



# Creation of an Office of Surveillance and Epidemiology Training Knowledge Management System

An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science.

Sponsoring Agency:  
Office of Surveillance and Epidemiology,  
United States Food and Drug Administration

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## **Abstract**

Our team developed a training knowledge management system (KMS) for the United States Food and Drug Administration's Office of Surveillance and Epidemiology using Microsoft's SharePoint. Through research, on-site analysis, focus groups, and interviews, we investigated user needs and developed a taxonomic search structure and KMS shell site. The site centralizes training courses and permits supervisory and individual tracking, which were key needs identified by staff and supervisors. We also developed recommendations and support materials for end-users and developers.

## **Acknowledgements**

Our project would not have been possible without the support of many groups and individuals. First we would like to thank our project sponsors: Ellen Pinnow, Marni Hall and Suranjan De. Without your time and insight, this project would not have produced any results. Thank you for making yourselves available to help us throughout our entire time at FDA, for anything we may have needed. We would also like to recognize Carol Pamer for coming up with the initial concept for our project.

While at FDA, the OSE staff and leadership were especially welcoming. In order to carry out our research and analysis, we worked with many staff members individually and in staff groups. The Regulatory Science, Project Management, and Administrative staffs in particular contributed to this portion of our project. Lana Pauls and Jill Bourdage offered well-rounded views of OSE training structure and needs.

During the web development portion of the project, we received help and assistance from different OSE staff members and other contractors. The CDERPoint development team made themselves available on multiple occasions to consult with our team on current best practices and possibilities of SharePoint. Gregory Jackson ensured that our team always had the technical resources and programs that we needed to configure and develop the site. Suranjan De provided his technical insight throughout the project, even before the group came to Washington D.C. Lyle Canida demonstrated and shared his SharePoint knowledge by showing our team his SharePoint site for the Project Management Team. Also, Erik Thorne gave us great perspective and ideas for our project, and he had the background knowledge to know best practices in SharePoint development. All of the people mentioned provided invaluable help in the development of our SharePoint site deliverable.

We would also like to thank our professors who guided us throughout the entire IQP process. Professor Ingrid Shockey provided assistance while we were designing our research methods and project proposal. Our advisors, Professors James Hanlan and Paul Davis, were great resources for us throughout our time in Washington, D.C. We would like to thank them for their continual feedback and guidance in our academic approach to the project and feedback on many drafts of this report. The guidance and suggestions from everyone who assisted us with our project created a valuable IQP experience.

## **Executive Summary**

The United States Food and Drug Administration is a regulatory agency tasked with the protection of American consumers through scientific inquiry and investigation of consumable products, medical devices, and cosmetics. In order to succeed in its mission, FDA employs thousands of experts in fields ranging from medicine to informatics and everything in between. The FDA's success depends directly on the knowledge of its employees. They must maintain knowledge on the frontiers of their respective fields. Professionals with highly varied backgrounds and training often come together on interdisciplinary project teams. Employees must be able to effectively communicate with colleagues of varied backgrounds.

Training is a critical part of a staff member's career at FDA. Training courses are located in many incompatible systems. Users find it burdensome to locate and track training. Training materials and courses cover many different topics and achieve a range of goals. Employees must take certain agency-wide administrative courses, but they also must participate in professional development and continuing education to ensure that everyone is up to date with the latest principles and practices in their respective fields.

Our team has provided a centralized, searchable knowledge management system (KMS) for training resources needed by the Office of Surveillance and Epidemiology (OSE) within the FDA. A Training KMS was developed in order to meet the needs of the OSE by addressing the challenges and frustrations training has caused within the office. The OSE Training KMS was created using the Microsoft application SharePoint. We developed an organizational taxonomy that governs the search structure of the KMS. The taxonomy developed is modular in the sense that it encompasses all training options and can be applied to other offices within the FDA in the future. Great care was taken to ensure that the organizational taxonomy was thorough and consistent with the training needs and structure of the OSE and FDA. Support manuals were provided for the user, webmaster, and developer. We also provided recommendations for future improvements and maintenance procedures.

Investigation of user needs and OSE training structure took place through interviews, meetings, focus groups, and job shadowing. More than 50 people took part in our social science research, ranging from the office director to new FDA employees. We gained an understanding of the training that was necessary to function effectively in the office, frustrations with the current systems, and user search preferences. Additionally a needs assessment and gap analysis

took place. The KMS features that we included will assist in bridging the gaps of training as well as provide support to the OSE by enhancing their work environment and skills.

We have provided recommendations for future development of features that were out of the scope of our project. Some of these recommendations are that the OSE require all staff members to complete SharePoint training. It would also be valuable for each individual staff and division within the office to define specific requirements for themselves. The OSE should assign governance of the new KMS and follow the maintenance and further development procedures we have outlined. Lastly, obtaining a web platform that allows the current training system to communicate with SharePoint would greatly reduce curation efforts.

# Authorship

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## Key Terms and Acronyms

<b>TERM</b>	<b>Definition</b>
<b>FDA</b>	Food and Drug Administration
<b>KMS</b>	Knowledge Management System
<b>OSE</b>	Office of Surveillance and Epidemiology
<b>SHAREPOINT</b>	Microsoft application used to manage and share resources
<b>CDER</b>	Center for Drug Evaluation and Research
<b>COR</b>	Contracting Officer Representative- interface between FDA and contractors
<b>LMS</b>	Learning Management System

## Chapter 1: Introduction

The Food and Drug Administration (FDA) was established in order to protect the health and safety of the American public through regulation of all food and drug products. The structure of the agency is hosted in nine main centers and offices that are further broken down into smaller offices and divisions with very specific roles (Slater, 2005). The Center for Drug Evaluation and Research (CDER) is responsible for the entire process of drug monitoring throughout the entire life-cycle of a drug. The Office of Surveillance and Epidemiology (OSE) within CDER focuses on identifying and researching drug safety signals. Drug safety signals are any sign that an approved drug might threaten public health in some unexpected way (FDA.gov, 2014). This office is broken down into six divisions and six staffs. Each has a specific function regarding the monitoring of a drug, both pre-approval and after it has been released to the market. The office is comprised of nearly 300 staffers devoted to the protection of American consumers through the evaluation of drug risks and promotion of safe drug use.

OSE reviews and monitors drugs throughout their entire life-cycle. This often involves assembling cross-disciplinary teams of experts who are educated in many different fields such as epidemiology, pharmacy, statistics, medicine, nursing, social science, and information technology. Frequent and intense training is required to keep staff members current in their fields of expertise, knowledgeable in the fields of their colleagues, and conversant with FDA's internal systems.

This type of training and expertise of FDA staff comes into play during times of crisis. In 1961, the disastrous side effects of the popular morning sickness drug thalidomide were exposed. Thousands of deformed infants were born as a result of the thalidomide exposure that they received while in utero. Through effective monitoring and drug review processes, thalidomide was not prescribed to pregnant women in the United States. Since the time of this worldwide thalidomide tragedy, there has been a Sixteenth World Health resolution that called for immediate action regarding adverse drug reactions (World Health, 2002). This case is just one of countless examples of the necessity for FDA staff to be prepared to respond in times of crisis to protect public safety (Noren *et al.*, 2009).

When we arrived, the OSE did not have an effective training knowledge management system that met these critical needs. Then-current systems did not incorporate all training materials from both internal and external training sources. OSE staff could not quickly access training materials from one centralized system; instead, individuals had to conduct repetitive searches in multiple databases in order to find the needed training course.

Furthermore, staff could not track training materials, certificates of completion, or credits for training courses they have taken. Much time was wasted as employees searched through email, the weekly Monday memo, FDA home page, Learning Management System, and external professional societies to learn about upcoming mandatory or elective training courses that allowed them to remain current in clinical, scientific, and regulatory knowledge and practices.

We were charged with creating a centralized training system that would give employees access to the right information as quickly as possible to support their varied roles in a scientific organization like OSE, which is comprised of staff with varying expertise who must be able to collaborate and work together. A training knowledge management system will be an essential tool for the OSE staff. It will give new and seasoned staff members the capability to locate, schedule, and track both mandatory and elective training material for new and seasoned staff members. Centralization of all training materials and the ability to track training progress will improve OSE efficiency.

Our team was charged with the creation of a searchable training system utilizing the Microsoft application SharePoint. Currently, searching for training material is difficult, tedious, and non-uniform, thus it can be greatly improved upon. One of our initial objectives was to develop an understanding of the day-to-day function of the OSE and focus on training structure. An integral task that we had was identifying user and administrator tendencies. By determining the staff's universal training challenges and frustration with the current system, we developed specific features and tools in our OSE training KMS that not only meet their needs, but also is adopted by staff. The needs of the OSE and current training structure were important factors that we considered while constructing the organizational taxonomy. The organizational taxonomy determined the search structure and functionality of the KMS. Development of the actual site heavily relied on a complete understanding of SharePoint. The shell site we developed provides an intuitive user interface and utilizes the taxonomic search structure behind the scenes to deliver

a powerful solution to OSE. In order to use the KMS, OSE staff was given a live demo that was recorded for those who were not there. The team also provided support materials in order to ensure the sustainability of the system for the future. These support materials and future recommendations will ensure the longevity of the newly developed KMS upon our departure from the FDA and will make sure staff members are comfortable and receptive to the new system. Proper execution in the creation of this knowledge management system accompanied by an effective implementation plan provided the OSE with an indispensable resource.

## **Chapter 2: Literature Review**

The FDA's regulatory actions impact 25 cents of every dollar spent in America (FDA.gov, 2014). The actions taken by this organization directly affect the products we use every day. As a regulatory agency with a mission dependent on science, the FDA adheres to the principles of scientific inquiry and investigation to comply with Congressional policy and protect American consumers. In order to do so, the agency employs experts in numerous fields that collaborate in interdisciplinary project teams. Highly trained staff is crucial to the success of the FDA. Employees must not only remain on the cutting edge of science in their fields of expertise, but they also must gain a working knowledge in the disciplines of their colleagues in order to form a cohesive team. Extensive training is compulsory to the success of the FDA and for the protection of the American consumer.

In this chapter, we examine in greater depth the FDA as an organization, the stakeholders in this project, training in an interdisciplinary environment, Knowledge Management System (KMS) best practices and several KMS case studies. We also explore SharePoint as a database creation tool as well as corporate training strategies involving new software implementation.

### **2.1 Agency Profile: The FDA and the OSE**

The U.S. Food and Drug Administration (FDA) is responsible for "protecting the public health by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics, and products that emit radiation" (FDA.gov, 2014). The nation trusts this regulatory agency to decide what is safe to consume. From children's daily multivitamins to genetically modified crops to mascara, the FDA requires that any consumable product, drug, medical device, or cosmetic must be rigorously monitored to ensure consumer safety.

The agency as we know it today was created by the 1906 Pure Food and Drug Act. As the needs of American citizens have changed and developed through time, the powers and focus of the FDA have evolved through legislation or landmark Supreme Court cases. The FDA's early focuses included food purity, preservative toxicity, interstate distribution of misbranded foods,

and unsanitary meat packing practices. The regulatory authority of the agency then expanded to include antibiotics and over-the-counter (OTC) home remedies. The FDA gained the power to mandate that a drug's label specify all ingredients and reference the intended purpose. It banned any false or unsubstantiated claims by manufacturers. It was not until 1966 that the FDA became responsible for evaluating the effectiveness of a drug. It was then necessary to go back and examine 4,000 drugs that were approved between 1938 and 1966 solely based on safety. During the latter part of the 20<sup>th</sup> century, FDA activity was heavily focused on consumer protection. New regulations required informatory patient package inserts and tamper evident packaging (FDA.gov, 2014). Throughout this 100 year evolution, the FDA has become a world leader in protecting consumers.

The FDA's structure includes nine central offices and centers that are further broken down into several smaller offices (FDA.gov, 2014). Each office is then broken down into staffs and divisions with very specific purposes. The center that we will be working in is the Center for Drug Evaluation and Research (CDER). The office we will be working with is the Office of Surveillance and Epidemiology (OSE). The OSE, currently directed by Gerald Dal Pan, is further broken down into two offices, The Office of Pharmacovigilance & Epidemiology and the Office of Medication Error Prevention & Risk Management, and includes six divisions. These divisions include: Pharmacovigilance I and II, Epidemiology I and II, Medication Error Prevention and analysis, and Division of Risk Management. Complete diagrams of FDA, CDER, and OSE structure can be seen in **Appendix B, Figures 2.1- 2.3**. The OSE also has six staffs that comprise the Immediate Office, which is responsible for all support and administrative functions.

The OSE is classified under the Center for Drug Evaluation and Research (CDER). They are responsible for "identifying drug safety concerns and recommending actions to improve public safety and protect public health"(Administration, 2014). Activities within the OSE range from adverse drug event (ADE) report evaluation to prevention of medical errors through drug nomenclature review. In order to carry out its necessary functions, OSE employs experts in many disciplines. They have degrees in fields ranging from toxicology and epidemiology, medicine and pharmacy, to informatics and finance. The office of nearly three hundred employees works in interdisciplinary teams according to division. Special project teams are often formed across divisions.

## **2.2 Stakeholders**

The OSE training KMS to be created will directly benefit the staff and leadership of the office. Staff members will be able to better assure currency in their field while also meeting FDA-wide training requirements. Office leadership will have a tool that can track staff member progress regarding mandatory training modules. Complete training of the staff will allow team members to perform at their highest level. Increased efficiency in training can alleviate time demands, thus allowing more time for innovation. While the OSE staff focuses heavily on evaluations according to regulatory activity, the majority of the office is composed of scientists with a desire to innovate. Staff members of the OSE are often trained in highly specialized technical fields. In order for the FDA to best serve the American public, all staff must be up to date in their field to bring the best knowledge and skill set to their projects. Allowing room for innovation can help the OSE to better meet their goal outlined in the agency's mission statement: to make available safe and effective drugs to the American Public.

## **2.3 Training Strategy and Theory**

There is a concrete science to training employees to perform at their highest levels. The OSE approaches staff training through a combination of staff development strategies and adult learning tactics. Well-trained employees tend to feel a higher overall sense of job satisfaction. Training that considers career goals and prepares employee for upcoming role changes is the most effective form of training in improving job satisfaction and increasing the feeling of how much a person feels valued (McNamara, 2014).

### **2.3.1 The Necessity of Interdisciplinary Training**

Interdisciplinary training has become a focus in the field of public health. Since the 1970's, the availability of interdisciplinary education within the public health sector has steadily increased. More often than not, a person who is trained in a very narrow technical role ends up collaborating on a team with several people in separate fields of expertise. When forming or joining a new team, two aspects are critical to the success of the team: confidence in your respective field of expertise and overlapping competencies. Each member of the team must feel

secure in the quality of knowledge they possess in their field of expertise. This body of knowledge begins during formal education and is strengthened through professional development throughout a staff member's career. Confidence in their expertise allows team members to define their role within the group and feel valued because the team needs them. Each team member must also possess overlapping competencies in the fields of their colleagues. Overlapping competencies and training allow for common vocabulary to be understood and assures a mutual respect for different disciplines (Hall & Weaver, 2001).

### 2.3.2 Adult Learning in the Workplace

The behavioral science behind adult learning is important to consider regarding workplace training. The technical term for adult learning is andragogy. The behavioral science community generally agrees with Knowles' 5 assumptions of the characteristics of adult learners. Malcolm Knowles asserts that adult learning relies on self-concept, experience reservoir, readiness to learn, orientation to learning, and motivation. As a person matures, their view of learning matures too. The quest for knowledge becomes self-directed, and each individual feels in control of the learning process. Learning is no longer just gathering information pertaining to a certain subject, but now is problem-centered with an attainable goal.

Knowles' has also suggested 4 principles to apply to adult learning structure. In order for an adult to benefit from training they cannot blindly be led through a curriculum that they do not see as valuable. To maximize the value of instruction in the workplace, an adult must have a hand in the planning and evaluation of their individual curriculum. In the process of planning their own training path with management, adult learners feel valued in their workplace. Experience plays a large role in adult learning. Mistakes can often motivate a subject to seek more knowledge to avoid future missteps. Relevance of a planned curriculum is the key to andragogy success. Adult learners respond to sources that have a direct impact on their career and personal interests (Pappas, 2013). Access to courses of substance and interest is essential in encouraging andragogy in the work place.

### 2.3.3 Organizational Learning Theory

When investigating an organization's training structure, it is also important to consider the behavioral science behind organizational learning. Peter Senge's *The Fifth Discipline: The*

*Art & Practice of the Learning Organization* has become a standard resource when structuring training for an organization. The approach suggested by Senge is highly systematic and looks to increase the efficiency of an organization by “ridding it of learning disabilities.” An organization (private, public, or government) can only continue to be successful if they learn faster than contemporaries in their field. The learning structure of an organization can usually fall into two categories, self-limiting or self-sustaining. The goal is for learning to add to the success of an agency by keeping employees up to date and on the cutting edge of their respective fields. Important components of organizational learning are personal mastery and shared vision. Each employee must be an expert in their discipline, but as employees come together on projects and initiatives, a shared vision and goal becomes a necessity (Senge, 2006).

## **2.4 Office of Surveillance and Epidemiology Training Structure and Strategy**

Over the years, the OSE has developed its own unique training structure. In an office that fosters a dynamic, heavily interdisciplinary, and technical environment while working to meet regulatory mandates, adequate training is essential. Information explaining the training structure of the OSE is not available to the public. Through interviews with Lana Pauls, OSE Associate Director of Executive Operations and Strategic Planning, and Dorothy Ballman, Staff Development Specialist, OSE training structure was researched. There are many sources of training. Staff members can participate in online training modules, on-campus instructional seminars, FDA certificate programs, off-campus courses, and professional conferences. There are certain online training modules required across the board for all of FDA. These modules include computer security, records management, and ethics. Certain roles such as supervisor and contractor interface representatives (CORs) require a set number of course hours per year in order to remain in that position. The office has also outlined core competencies for the major roles found in the office. The responsibilities of a COR or supervisor cannot be met without this training; however it is not “mandatory” in the sense that it doesn’t have a deadline. The OSE also employs many team members under Title 38 and Title 42. Title 38 and Title 42 employees must maintain an active licensure in their field by completing approved continuing education courses. These employees generally are physicians, nurses, and pharmacists. Elective training courses are offered to the entire staff according to interest and necessity. Courses range from grammar

refreshers and English as a second language to time management and communication skills. The path an individual employee takes through training is highly unique and dependent upon their division and projects. Courses of relevance are taken as needed to effectively fulfill responsibilities. An additional need regarding OSE training is the need for “Just-in-Time” or on-demand training. Staff members must have training resources at their fingertips in times of crisis response. When an outbreak occurs, the team responding to the outbreak needs to get up to speed as quickly as possible to prevent further human harm. There is a constant need for training in the OSE. Staff members must be able to complete training as it fits into their hectic schedules.

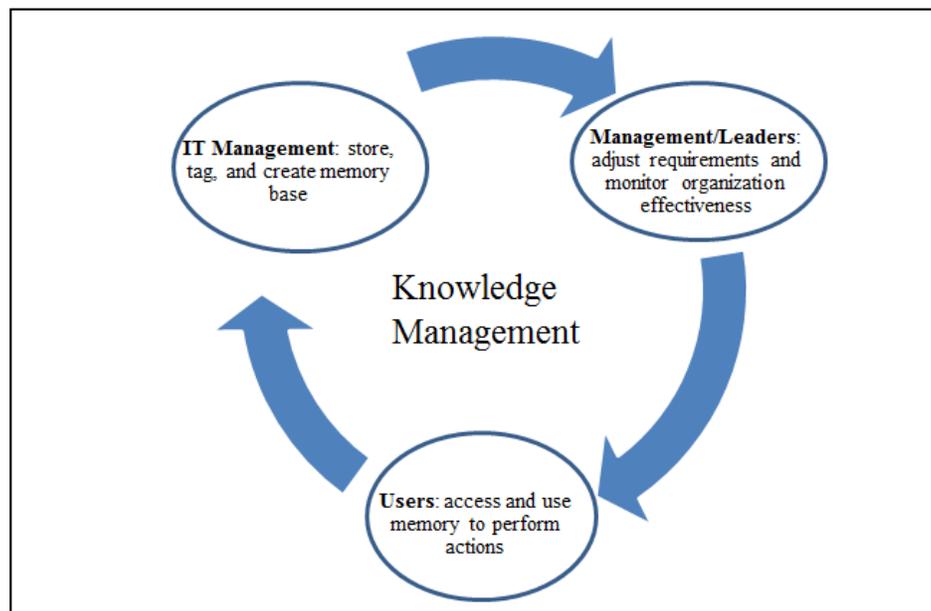
Dorothy Ballman, OSE Staff Development Specialist, consults Senge’s theories and models to inform training structure in the OSE. The principles discussed above are especially applicable to the goals of the OSE and FDA as a whole. In a heavily technical and interdisciplinary environment, self-sustaining learning approaches, personal mastery, and shared vision directly influence the success of the agency mission.

## **2.5 Knowledge Management Systems**

The environment in the OSE is always changing. There is only one FDA, but there are thousands of pharmaceutical and drug companies that are constantly sending the FDA cutting-edge scientific research and data. In order to overcome the challenges of working in a rapidly changing field, appropriate tools must be implemented in order to accommodate the demands of the users and those requiring access to continually evolving knowledge. Knowledge management systems have gained increased importance as information and data is now readily available through the Internet. A KMS is an integral tool as it can institutionalize best practices, capture knowledge, establish organization, and provide training materials for easy and efficient access (Morrissey & Schoemaker, 2005). For the purposes of this project, a knowledge management system is defined as a dynamic system of organization for the user community to access and share information in the most simple and effective way. It provides automated tools to minimize efforts for both the user and curator. This definition was arrived at through extensive research, presented below, and interviews with OSE personnel.

Effective knowledge management systems are an invaluable asset to an organization, because they are not just data collection repositories. These unique systems are multi-faceted and

involve more than just technology as it is a multi-disciplinary system that encompasses various theories in sociology, healthcare, and economics (Morrissey & Schoemaker, 2005). A KMS combines these theories in order to create a cohesive community within an organization in order to increase access to knowledge and address solutions to practical problems. This system increases collaboration and knowledge sharing among all staff members. Knowledge management can be applied to various fields, but there are four essential tasks that all knowledge management systems must accomplish. These tasks include: creating a structure for existing knowledge; organizing and tagging the knowledge; applying knowledge and making it accessible to users; and, lastly, implementing the system to ensure knowledge management usage. There are many key players in knowledge management, and in order to maintain and ensure the usage of the system; employees must be trained on each steps of the process. **Figure 2.4** displays the flow of knowledge management among the key players (Jennex, 2005).



**Figure 2.4: Key Players in Knowledge Management**

Implementation of this process of knowledge management shown in **Figure 2.4** will ensure that all staff members are familiar with the core competencies and allow them to see any available knowledge, data, or training materials that are offered within the organization. People are more receptive when they know that the system will directly benefit them. Training is a vital

component as the key players will be the ones to identify and resolve areas of improvement that they find in the knowledge management system (Pfeffer, 1998).

The OSE is unique because it is a scientific organization with a public health mission. In order to meet its mission, individuals must have varying expertise, a diverse skill set, and the ability to collaborate together. The learning curve that is needed in this field is extremely steep; workers must acquire a broad conceptual knowledge on topics outside their own field of work. A KMS provides a tool that allows users quick and easy access to both external and internal resources on topics of particular interest to them. Ease of access to the system is especially important when emergency situations arise. In these crisis times, employees must drop their current research and have access to “Just-in-Time” knowledge in order to correctly respond to critical medicinal errors or new disease developments. Even a drug that is generally safe for the public can cause unexpected outbreaks during its life cycle in the market. For example, an investigation conducted and collaborated by the FDA, Centers for Disease Control and Prevention, and state health departments confirmed that contaminated epidural injections caused a multistate outbreak of fungal meningitis. State departments across the country collaborated with their local medical centers to investigate whether any of their hospitals received the contaminated epidural injections. The *exserohilum* and *aspergillus fumigatus* contaminated batch of narcotics was traced back to the New England Compounding Center (NECC) in Framingham, Massachusetts. The growing multistate outbreak exposed nearly 13,000 people and caused 65 deaths. This was an extraordinary outbreak because historically fungal meningitis itself is very rare (Smith *et al.*, 2013). This example, and the need for rapid OSE response, highlights the need for employees to be current in not only their field of expertise, but also be able to learn and apply evolving methods and scientific knowledge. This case also shows how the FDA responds in a time of crisis, and it shows the impact that training and continued education can have in increasing the response time.

## **2.6 Knowledge Management Systems in Training**

Training is an important component for making sure that employees are both skilled and have the knowledge capability to effectively function in their jobs role (Johannessen & Olsen, 2003). Prior to this project, the OSE staff does not have an integrated knowledge management system for quick and easy access to training materials. Instead, staff must tediously scroll

through emails as well as several external and internal sites in order to determine the location of the required training materials. Some of these external sites are ISPE (International Society for Pharmaceutical Engineering), DIA (Drug Information Association), and the APHA (American Public Health Association). Furthermore, there is no way to currently track completed training material; instead, users must save or print completed certificates to document that they completed their training. An extensive data-driven knowledge management system would prove to be a valuable tool for the OSE staff. This system could contain features such as the ability to track user progress, a customizable training path for courses of particular interest, and synchronization with outlook calendar so that users know exactly when and where these courses take place. This system will improve time management and allow the OSE staff to focus on research and innovation. In order to create an effective knowledge management system, we have researched and studied other systems that have already been implemented in other federal agencies, other countries, and in small companies.

## **2.7 Case Studies in Knowledge Management Systems**

Many different agencies/companies have already implemented knowledge management systems. These systems have many general similarities, but simultaneously exhibit distinctive features. Evaluating the strengths and weaknesses of international and domestic knowledge management systems assisted us in designing an effective KMS for the FDA.

### **Case Study 1. National Library of Medicine: MEDLINE**

The US National Library of Medicine (NLM) has developed a biomedical knowledge management system called MEDLINE to index the highest quality biomedical research papers and journals. Currently the system contains well over 4,600 medical journals, and the citations and abstracts available in MEDLINE are searchable using both the NLM site as well as through PubMed. MEDLINE system contains more than 19,000 descriptors for subject topics (Bonham & Nelson, 1988). Searching on the MEDLINE site is narrowed down by a system containing a hierarchical taxonomy of specific subject categories arranged alphabetically under broader terms. One inefficiency of this KMS is that users experience long search results, because the system

provides too many tags, which makes it difficult to find exactly what you are looking for unless the user has a precise knowledge on the topic of interest (Kim & Chen).

#### Case Study 2. Gale-Cengage: Health and Wellness Resource Center

A smaller-scale example of a healthcare journal database is Gale-Cengage's Health & Wellness Resource Center, which compiles 400 health and medical journals for the use of the public, students, and healthcare professionals. The standout feature of this database is its user-friendly interface. A search can quickly be narrowed by selecting a tab on the home page. The search can then be further narrowed by selecting the desired result types. Another useful feature, InfoMark, gives users the ability to mark and save search results for use in a later session. A symbol is selected, and the reference is added to a list that is saved under a personal account, which can later be shared with others (Gale-Cengage, 2014). Though the system does offer a friendly user interface and efficient searching capabilities; the system is of relatively small size. Also references must be input into the system manually, and there are currently no automated processes.

#### Case Study 3. Aventis Pharmaceuticals

Aventis Pharmaceuticals is a leading pharmaceutical firm whose headquarters are located in Strasbourg, France. Aventis has approximately 71,000 employees and enjoys over 17 billion Euros in sales per year. They found their scientists to be spending 20% of their time trying to access and find up-to-date data and knowledge. Drug development costs are already quite high and could be reduced if the scientists spent less time trying to retrieve research that should be easily accessible. In order to improve time management, the Drug Innovation and Approval division of Aventis (DI&A) developed a KMS that would connect all their areas of research from biotech screening to clinical pharmacology into a single community that could exchange ideas and share knowledge both internally as well as externally. With less focus on determining where to find information, scientists can collaborate together, which can improve employee retention and innovation of new knowledge management strategies and ideas. There were two distinctive key features of the KMS that was developed. The first key feature was a document management storage system and a retrieval software package that quickly located the reports that the scientists were looking for. The second key feature was the creation of Kmail, which proved to be an

integral tool as researchers could easily contact or identify other scientists with specific expertise and this helped minimize duplicated research. These two tools in particular helped to speed up and improve the overall efficiency of the company as less time was spent searching for reports and documents. Several challenges with this system were getting everyone on board with the new project. The biggest challenges were convincing senior management that a KMS investment was a worthwhile endeavor. Projects that gain support from senior management tend to gain more acceptance and usage from all the employees. The DI&A ran several pilot tests, as workers were not receptive to the new system. Through each pilot test, both the developers and employees would evaluate the areas of improvement as well as the benefits of the new tools. Along with the pilot tests, the developers provided training for the employees. Implementing the KMS in a rolling transition from one area of a department to the next allowed employees to see the increased benefit from the KMS, thus making them more receptive in allowing the implementation of a KMS into their research-based department. With the support of leaders the DI&A developers were able to demonstrate the utility of the newly developed knowledge management system (Morrissey & Schoemaker, 2005).

#### Case Study 4. The U.S. Army: After Action Reviews (AAR)

The U.S. Army Combined Arms Center developed a knowledge management system in the 1970's called AAR, which has become an effective and groundbreaking organizational learning database. This system involves all key members and fosters change, growth, and innovation. The basic elements of the system are identifying lessons, storing documents in an easily accessible repository, transmitting applicable knowledge to the appropriate areas, communicating lessons to all units, and analysis and data mining on knowledge gaps. The concentration of the system is for project management. It also contains a structured question and answer portion, which addresses four distinctive questions. These questions include: What should have happened?; What actually happened?; Why were there differences?; and What lessons can we take forward for next time?. The KMS contains learning documents from operations that are part of the core competencies and ensures that everyone has an understanding of the organization and its mission (Darling, Parry, & Moore, 2005). The goal is to foster an environment of learning and facilitate knowledge flow between all army units from the leaders to subordinates. However, one problem is that Generals in each division are held solely responsible for assuring that all lessons are completed

by commanders, staff sergeants, and subordinates. It is imperative that all army units are compliant and using the system in order to collect accurate data to analyze for the four categories. It is also crucial that leaders correct any deficiencies during the training assessment and identify the strengths and performance of both the individual soldiers and those who are in charge. The benefits of the system outweigh the areas that need improvement and are crucial because they provide a knowledge advantage about new military technologies and strategies. This system is also modular and highly adaptable. When new technological innovations are integrated into the system, the main strategic elements remain constant (Paparone, 2001).

#### Case Study 5. NASA: Pause and Learn (PaL)

NASA modeled their Pause and Learn (PaL) knowledge management system after the U.S. Army's AAR system. After three failed Mars missions, NASA decided to review their mission statement and implement a plan on how to better manage projects. Their action plan was to build a codified knowledge management system that was not focused on the actual database but on the concept of learning (William, 2000). The KMS would automate the process of sharing knowledge from previous missions. NASA's goal for PaL was to collect knowledge during a project's entire life cycle and to capture each individual's knowledge on a project before they left the organization. In this way they would be able to retrieve this information for the next project. Three elements of PaL are focused on the interrogative categories: What happened?; Why did it happen?; and What did we learn from this?. One problem developers faced in implementing the KMS was trying to cultivate an environment where scientists would come together and share knowledge. However, the agency received a lot of resistance as scientists and workers did not want to release knowledge on projects because specialized knowledge is what gave scientists a competitive advantage. Project managers played an integral role in providing incentives to foster collaboration (Liebowitz & Megbolugbe, 2003).

## **2.7 Organizational Taxonomies: Smart Search Structure**

Every KMS needs some form of a search structure. A requirement defined in the original project description provided to us by OSE was the creation of an organizational taxonomy as the search structure for the KMS. An organizational taxonomy is a multidimensional, hierarchal

construct that classifies information according to logic, heuristics, and/or empirical data. It is important to note that a taxonomy is very different than a typology. A typology is the subjective creation of the individual, while a taxonomy is a complex logical tool that can organize large amounts of data. Organizational taxonomies are first categorized by high-level similarities of the entries to be organized. They are further broken down until entries no longer share notable similar characteristics. Polyethnic groups are broken down until entries reside in monoethnic categories. Experts have adopted the same labels for categories as seen in biologic animal kingdom taxonomies. The highest level of the hierarchy is called the kingdom followed by phylum, class, order, family, genus, species, deme, and finally form.

There are three procedural classifications for organizational taxonomies: traditional, theoretical, and empirical. Traditional taxonomy organization relies on the common sense of the creator. While classifications appear obvious to the creator they are not always clear to all people that will use the taxonomy. This method often fails to define how and why an item was assigned to a specific category in a specific level of the hierarchy. Theoretical organization relies on *a priori* knowledge or use of heuristics. Often times it becomes a combination of the two approaches. *A priori* knowledge is knowledge that a creator had in their mind before any investigation into the subject matter at hand. A heuristic approach involves evaluation of data, experimentation or trial and error. The third procedural classification relies on an arithmetic approach. All information is sorted and classified through data sets from empirical investigations (Rich, 1992).

## **2.8 SharePoint as a Knowledge Management Solution**

The Microsoft application SharePoint is a collaboration and knowledge-sharing platform, which provides for team collaboration, web based document management, and information sharing and development capabilities. The features of this application provide solutions in order to bring together people as well as manage data and knowledge. SharePoint links knowledge with communication by providing a one-stop centralized location for organizations to manage their information in an efficient and secure manner. Today's working environment is centered on an employee's knowledge of information that is available to them. SharePoint can provide an

organizational tool that addresses the needs of employee's to access knowledge, as they are reliant on their staff's specific knowledge while completing specialized tasks.

SharePoint offers a suite of out-of-the-box software features and tools, which automate the process of organizing and finding necessary information and knowledge. This automation provides companies with cost effective solution for information sharing and collaboration as workers can communicate and share information and document files. The flexible collaboration tools offered by SharePoint allow for personal calendars, social net-working tools, task lists, and the capability for developers to construct their own features and programs. These tools consolidate information into various types and organize the knowledge and data based on the needs of the employees. Libraries and lists allow users to manage documents. Workflows allow for process automation and make the site more usable. The classification and taxonomy tools provide for smart searching, organization of content management, and document collaboration (Smith & Bates, 2007). Development of the site mostly includes managing and organizing lists and libraries that are categorized according to a chosen taxonomy. There are also tools that must be incorporated that allow for the tracking of training materials and the completion of training modules. SharePoint provides many collaboration tools that make it a powerful platform to develop a KMS.

SharePoint is also compatible with other software programs such as Adobe Connect. Adobe Connect is a program that the FDA uses to create online training materials, and it was part of a push to transition from maintaining large amounts of cumbersome paper files to electronic data storage. Adobe Connect allows for the addition of materials known as content. A curriculum is then built by taking content and adding it to a list. That curriculum can then be assigned to designated groups. Once a member of a group has been assigned a particular curriculum, they can see and track their progress through the curriculum (*Using Adobe Connect 9*, 2014). All of these functionalities can be added to a SharePoint site by embedding it. These out-of-the-box features are why many agencies and companies have adopted it as a knowledge management system (Smith & Bates, 2007).

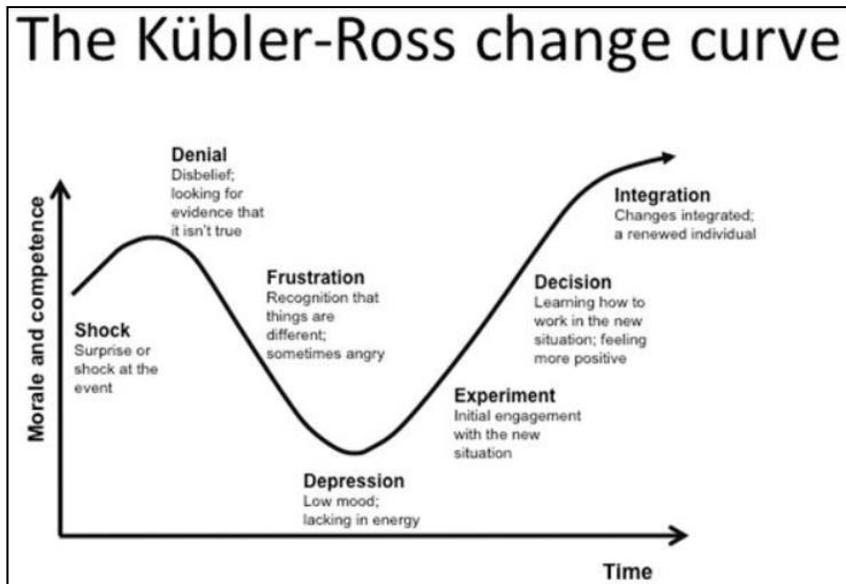
## 2.9 Moving from eRoom to SharePoint

The FDA has recently migrated from using eRoom and shared drives to SharePoint as their form of document sharing and organization. Years ago, eRoom was the industry leader in data organization and management as it provided a flexible and easy to use database to store documents (Lifson, 2014). A central feature of eRoom was the design wizard, which provided suggestions for users in creating tools. For the FDA, eRoom became a static file storage repository. Many offices also reached the maximum capacity of their individual eRoom. The FDA wanted to create a knowledge management system to reverse the trend of eRoom, which was a data rich but knowledge poor document dumping ground. The FDA adopted SharePoint as a solution to better manage knowledge and documents. The FDA began to implement SharePoint usage in a rolling method. To encourage divisions and employees to adopt the SharePoint solution, the FDA provided free SharePoint training courses. However, because SharePoint training was suggested and not required many employees opted to not take the training. As a result, there are many gaps in SharePoint training among employees. Some employees have extensive knowledge on SharePoint training and are considered experts while others have never taken the course.

### 2.9.1 Challenges to Consider When Implementing Change

It is common for staff members to be hesitant to implement change, but with support of leaders and application of successful training strategies change can be turned into a positive and rewarding experience.

The key to effective utilization of new technology is user attitudes and readiness to adopt a new database and change their previous work habits. The new database should be presented as an incentive to workers as it will directly benefit their work. Research into change management is growing steadily. Change is enacted in an organization as a response to a need. Those resistant to change may not fully understand the need it is addressing. Change may take the form of technological advances, reorganization of offices or assignments of responsibilities, or legislative or regulatory mandates. An accepted model in the field of change management is the Kübler-Ross Change Curve. This model can be seen in **Figure 2.5** below.



**Figure 2.5: Kübler-Ross Change Curve**

The Kübler-Ross Change Curve above in **Figure 2.5** shows the process of human response to change. Subjects first undergo feelings of shock, denial, frustration, and depression. As time progresses, reactions become more positive as experimentation and integration occur.

Change management takes into consideration the seven steps on the Kübler-Ross Change Curve. If change is managed correctly, resistance can be minimized. When implementing a new technological program, identifying and explaining the need and reason for the change to those it will affect is a good way to begin the implementation process. Subjects are much more receptive if they understand why a change is occurring. Allowing for proper training in the new system and transition time can also help subjects accept the change. Transition time allows subjects to experiment and become comfortable with whatever the change may entail. Experimentation is the first step toward positive feelings about change (Naysan, 2014).

The first step to successful implementation of new technological initiatives in an organization is analysis of inefficiencies with the current system. Clear definition of the benefits and capabilities of new a database to address these inefficiencies will provide comfort to those hesitant to adopt the new system. In this way the eventual users will directly see the benefits on

the new system. The interface of the newly developed database should resemble other sites in order to provide familiarity and consistency to the users which will in turn promote successful implementation. The second step is to educate senior management, supervisors, and managers on the potential benefits the new system can address such as increased employee productivity and time efficiency. Support from senior management will provide for increased office wide acceptance and usage of the database. Once management is onboard with the system implementation, employees need support services and training on how to use the new program. Training must be done in a simplistic, hands-on, user-friendly manner. Quick reference videos and end-user manuals provide for the most effective methods of training. The final step is to provide continued support material for employees. A point of contact should be provided so users have a specific person to direct any questions to.

## **2.10 Corporate Training Strategies**

In order to successfully implement a training knowledge management system in the OSE we researched the strategies that the FDA used to implement the Microsoft application SharePoint as well as best methods of training for successful user acceptance.

### **2.10.1 Training Models and Best Practices**

With any new technical product there is an expectation of support materials. The first part of training focuses on clearly establishing the goals of the trainees as well as the overall goals of the office. The applications of the training must be thoroughly explained. Once the trainees are aware of the purpose of their training, the training must take a hands-on, task-based approach rather than relying on simple memorization. Another important part to developing training strategies is determining a baseline level of the staff's starting knowledge. There will be a wide range of experience and learning styles (Pappas, 2013). Constant communication between both parties is critical to the success of a training project. This communication can only be successful if it is a give-and-take in which the trainers receives feedback on the goals of the trainees and the trainees receive feedback on their progress toward the goals and objectives of the training program. This communication should include constant re-evaluation of what is important to the trainees. There should also be periodic assessments on the staff's progress, so that both the staff

members and trainers can measure the success of the training (National Workforce Assistance, 1999). With regard to the structure of the actual material presented and teaching style, an informal style of instruction and learning will likely be very effective. In order to ensure that the training will actually be effective, andragogy principles must be considered. The single most important thing to remember when adults are learning is that they are self-motivated, so the training should focus on allowing them to develop independence when working by mostly providing guidance rather than just the answers (Pappas, 2013). Training in the applications and usefulness of knowledge management is a key way to motivate staff members to actually use the knowledge management system, so creating confidence in the system will rely heavily on a successful training program (Morrissey & Schoemaker, 2005).

## **2.11 Summary**

Training is a compulsory aspect of an interdisciplinary workplace. OSE employees need efficient access to information sources in order to remain on the cutting edge of their field of expertise. Behavioral science has evaluated the needs and tendencies of adult learners as well as provided models for training. Senge's theories, Knowles' principles, and the science of andragogy are particularly important resources while planning a training initiative. Inadequate training of OSE employees creates a hazard to the American consumer, as drug safety concerns will not be addressed properly. Agencies in private, public, and government sectors have implemented KMS for many different purposes. Knowledge management systems are an integral tool in the public health sector as they provide a one-stop database system that workers can use to access both internal and external resources. The OSE staff is extensively trained in many fields. Access to internal and external training courses is necessary to maintain the skills needed. The current system does not have the ability to combine courses from Learning Management System (LMS), the inside FDA portal, Panorama, and Adobe Connect while providing access to external resources. Also the current system does not allow for individual and supervisory tracking. Features allowing for report generation can prove especially useful in this setting. An extensive data-driven knowledge management system could prove to be a valuable tool for the OSE staff. This management system could feasibly contain all training resources both internal and external, allow staff and leadership tracking capabilities as well as notify employees of upcoming training opportunities and deadlines. Recently many international government

agencies as well as local organizations in the United States have implemented training knowledge management systems.

The FDA has chosen SharePoint to implement a knowledge management system. They have also requested that support material is provided to accompany the actual system. All of this background knowledge will greatly contribute to the creation of an effective knowledge management system and support that will be tailored to the needs of the OSE staff for their daily use.

## Chapter 3: Methodology

The OSE lacks an intuitive, user-friendly knowledge management system (KMS) capable of organizing and tracking use of important training materials and elective training opportunities. Our group has been charged with the task of creating a one-stop KMS that allows access of all mandatory and elective training materials for both new and seasoned staff members. The database must be created using the Microsoft application SharePoint and organized according to the needs of the OSE staff. We were also asked to provide support materials and instructions for the use and maintenance of the SharePoint site that we designed. We researched and created an intuitive SharePoint database for the OSE staff along with necessary support materials for implementation and maintenance. Prior to beginning the project, we identified the following objectives as necessary in order to achieve our goals:

- Comprehend the training needs of the different divisions and levels of the OSE by investigating current training resources and practices;
- Create an organizational taxonomy as a search structure specific to OSE user needs and search strategies;
- Develop an OSE Training KMS within Microsoft SharePoint utilizing the taxonomy;
- Identify strategies useful in training the OSE staff and create training materials for end-users and developers to ensure that this database shell can be applied to all divisions.

This chapter will describe the methods we used in order to accomplish our objectives. In the following sections, each objective is addressed along with the techniques used to complete it. Our data analysis strategies are also defined. Additional material included with this chapter can be found in **Appendix C**.

### 3.1 Objective One: Assess User Needs and Search Strategies

Before we could truly understand what the OSE staff needs, we became familiar with the nature of the organization and function of the OSE staff. The process of obtaining this understanding took place from our first day until the last day, and our interactions with the staff members directly influenced the course of this project.

### 3.1.1 Preliminary Meetings and Site Assessment

To understand the office mechanics of the OSE and its protocols, we conducted a basic site assessment. The OSE staff is comprised of a staff working in a multidisciplinary and interdisciplinary environment. Workers need to not only stay current in their field of expertise, but also be knowledgeable in the fields of colleagues with whom they work since projects teams are commonly comprised of experts in different fields. Cross training is critical to the OSE. Employees must remain current in clinical, scientific, and regulatory knowledge; thus it is essential to have a one-stop training site that all the staff can access. In order to determine how users access training materials, we asked staff members who were identified by our liaisons as leaders in the Immediate Office (the support staff within the OSE) questions regarding their part in managing the vast amount of knowledge and materials in the current system. From their answers, we identified and analyzed current and effective training strategies and materials. These initial steps provided a clear picture of the type of information that we needed to further research through interviews, focus groups, and job shadowing.

### 3.1.2 Expert Interviews

Our first data collection strategy was to interview the participants whom our liaisons identified as those with the most critical perspectives for us to understand. The snowball method was used in selecting further interview participants as more facets of OSE training structure required investigation. As a group, we conducted semi-structured interviews with eleven individual participants. These participants were key training specialists, directors, and supervisors. Their insight provided us with general information about the operations and specific training needs of the OSE. The interviews focused on user training needs ranging from mandatory administrative training to training for field specific professional development. We also sought information on what challenges have been encountered with the current system and how the staff believes the newly developed KMS can ideally address the most critical challenges. Current user search strategies were also investigated. An additional objective of the interview questions was to reveal the concerns staff members had about implementing a new database and to reveal any office attitudes that were resistant to change. A table of an interview questions can be found in **Appendix C, Table 1**.

### 3.1.3 Focus Groups

Following the interviews, we conducted three impromptu focus groups. The focus group dialogue sought to identify trends in “pain points” with current training structure and practices in the OSE and FDA as a whole. The focus group dialogue evolved into discussion about participant user-interface preferences and familiarity with SharePoint features. A focus group is especially useful when investigating multifaceted processes. A valuable aspect of focus groups is that they allow a dialogue between participants. In this dialogue, participants can ask each other questions and address issues that the team may have overlooked (Morgan, Krueger, & King, 1998). Focus groups were useful in identifying recurring themes and majority consensus (Morgan *et al.*, 1998). The utilization of impromptu focus groups ensured the authenticity of conversation and responses. These focus groups took place during regularly scheduled staff meetings. Staff supervisors volunteered their staff to participate. The purpose and format of the focus group was clearly explained and staff members were informed that participation was voluntary and by no means required. Some staff members opted not to participate or add anything to the conversations.

The entire team was present for the focus group session. The moderator directed the conversation by keeping the group on task and ensuring that everyone had a chance to participate in the dialogue. The other two group members collected data by taking extensive notes. Each note taker focused on participants sitting in a pre-determined area of the room. The dialogue was successful in creating a large data set of pain points and providing insight into the needs and wants of the user community.

### 3.1.4 Job Shadowing

Job shadowing is a qualitative research method that involves the researcher closely following and examining a worker over a period of time. Our group used shadowing to get a detailed, data-orientated, and comprehensive view of the current training systems in the OSE and the methods employees use to access these sites. We also learned the search techniques employees used to search for particular training activities on these sites (McDonald, 2005). The data collected from job shadowing focused on actual events unlike interviews and focus groups, which reconstructed and analyzed previously occurring events (Quinlan, 2008). We also ensured

that the participants were from the different divisions of the OSE, so that each division was represented. Participants were selected from different levels of the office as well. It was important to note any differences in responsibility between staff members, team leaders, and supervisors. During shadowing, we took special note on the particular training activities subjects completed and their search methods (title, topic, activity, key words etc.). We even attended the in-house lectures and conferences with the participants in order to see the registration and proof of training completion process. In order to determine how user friendly the current training systems were, we asked the subjects to use the site to search for specific training materials. Their understanding of how to navigate through the site was noted in our field notes. The shadow participants were referred to in our notes as “subject A” and “subject B,” etc. To ensure that we did not cross the boundary between public and private information, we made sure we received consent from the volunteer participant before we proceeded to take any notes. It was made clear that. If a sensitive situation occurred, the participant could ask us to take a break from shadowing. This process gave us an inside view on the subject’s mindset and the search tools that they were familiar with. Data from shadowing can answer research questions about not only the subject who is being evaluated, but also about the social relationships of the organization and how these processes are all inter-related (Quinlan, 2008). Through shadowing, we gained firsthand knowledge and understanding of the training needs of the OSE and the tools with which staff members were familiar.

### **3.2 Objective Two: Taxonomy Design**

With information from the discussion of organizational taxonomies in Chapter 2, the group proceeded to construct an organizational taxonomy that would determine the metadata and tagging in the OSE Training KMS. The goal of this taxonomy was to aid in smart searching, where users with different search strategies and/or limited information about the course they were looking for, could access the desired training materials without browsing hundreds of results. The most fitting procedure for our team to follow while constructing this search structure was the theoretical method, where classifications would be based on prior knowledge, evaluation, experimentation, and trial and error. After gathering information from interviews, impromptu focus groups, and needs assessment activities we noted the high-level similarities in

training activities. Each high level category was further divided until courses no longer had substantial similarities.

Many versions of the taxonomy were created and presented to project sponsors. Through the agile development method, a version would be presented and discussed, feedback would be implemented and another more complete version would begin the cycle again. Along the way, clear definitions for each category and level within the taxonomy were developed. The definitions were left for those who would work with the KMS after our departure from the FDA in order to ensure that future courses would be categorized properly. The final step was the population of the organizational taxonomy with actual training courses from FDA.

### **3.3 Objective Three: KMS Design**

The OSE Training KMS was created in Microsoft SharePoint. It was developed as an independent SharePoint site that could later be linked to the OSE parent SharePoint site. Once needs of the office were determined and the taxonomy was completed, out-of-the-box features of SharePoint were configured to create a comprehensive, intuitive training site. Through implementation of the taxonomy with cascading search filters, the site suits OSE user search preferences. In addition to smart searching options, quick navigation features were added as well as notifications of different types. Quick navigation allows the user to access course transcripts, certificates, future training plans, and calendars. Notifications alert the user of upcoming courses or deadlines. The custom workflows allowed for advanced features and tools to be developed such as automatic Outlook invite reminders to notify users when training courses they registered for were near their due date.

Throughout KMS development, testing took place. Alpha tests were performed within the project group to see if features were working the correct way from both the perspective of the general user and the supervisor. When the KMS shell site neared completion, beta testing occurred with our project liaisons and new members of the OSE staff. The beta test captured the perspectives of users with many different levels of familiarity with SharePoint. Participants at the beta testing level would watch the site tutorial and then attempt to use different features in the shell site. Features that seemed to cause confusion were then simplified.

### **3.4 Objective Four: OSE Training Activities**

Through information gathered in the methods outlined in section 3.1, we will have completed a baseline assessment of the OSE's computer/program literacy, their pain points regarding training, their organizational structure, and their current training strategies in place at the OSE. It was important to consider how adults learn and the current training approaches. We used this background information to develop a training plan that would be specifically tailored to the OSE staff.

The baseline assessment aided two parts of the project deliverable. A complete understanding of the staff's SharePoint familiarity informed feature configuration in the KMS to promote ease of use. In order for the staff to use the database that we have created, we provided support materials and a manual for instructional sessions. The support that the OSE staff received was comprised of three parts. The first part was an in-house session that included a demonstration of the KMS. We also created documentation for end users, webmaster, and developers of the KMS that included electronic copies of support manuals. For the third part of support, we provided recommendations for how to develop and maintain the KMS from an administrative and technical standpoint.

### **3.5 Logistical Considerations**

According to the deputy director, Robert Ball, the OSE consists of 270-300 total employees. Our liaisons suggested that we only interview and conduct focus groups with certain participants to ensure that our research was effective and time was used efficiently as this allowed us to avoid compiling impossible wish lists from everyone. The danger of KMS projects lies in the process of defining the boundaries of information. For our interviews and surveys, the transcript length included the name, job title, and a brief narrative of the field notes that were collected during the research strategies. All transcripts were organized using an index file. All data collected was stored in word documents and these electronic documents were deleted upon completion of the project. During the conduct of the project, documents were stored on FDA-issued, password and ID card protected laptops. Laptops were returned to the FDA for proper restoration to factory settings upon completion of the project.

### **3.6 Timeline of Deliverables**

**Appendix C, Table 2** is a Gantt Chart that presents the specific sequence of our methods. Information gathering began with conducting the site assessment, interviews, and focus groups. Lastly, shadowing occurred. Data analysis began immediately following selected interview completion. Database development commenced as soon as substantial information was gathered. Week 5 was devoted to KMS development and report drafting. Week 6 involved final presentation activities and development of support materials. Week 7 involved office demos as well as report finalization.

### **3.7 Summary of Methods**

Our aim was to create an OSE Training KMS using SharePoint and provide training manuals on how to use and maintain the database. We used four main information-gathering strategies to help us reach our objectives. From the site assessment, selected interviews, focus groups, and shadowing; we gathered all the necessary information needed to develop a database tailored to the OSE staff needs. Data analysis was vital in order to interpret all the field operational data that we collected using our four strategy methods. We used content analysis to organize files based on index sheets. Development of an organizational taxonomy to ensure ease of access for end-users was another critical aspect of this project. By providing training manuals for the OSE staff, we established a general baseline of their knowledge on SharePoint, so that the KMS we created can remain in use once our group departed Washington.

## Chapter 4: Data & Analysis

This chapter presents the data collected through the research methods discussed in Chapter 3. The analysis methods and prevailing trends and themes are also reported here.

### 4.1 Analysis Methods: Coding

In order to correctly examine the vast amount of data that was collected, a method for analysis was chosen. All of the collected data was first analyzed through content analysis. Content analysis is the replicable method of organizing data into content categories that can be easily accessed and diagnosed. We used content analysis to organize the data into index sheets. These index sheets included the specific topic being addressed as well as several subtopics that provided which method we used. Each subtopic was further broken down into several themes that included: date, subject, and specific research findings. We also included page numbers in all of our index sheets in order to create an easily navigable, comprehensive filing system. To gain a more in depth analysis of the data categories in each index sheet we used coding analysis. Coding analysis is a type of statistical analysis and it is defined as a way to “condense extensive data into smaller analyzable units through the creation of categories and concepts from the data.”(Mayring, 2004). Coding analysis is a valuable method as it qualitatively generates theories about the data and leads to conclusions based on the interpretation of these theories. We used coding analysis to effectively determine results from both the expert interviews and needs assessment data gained during job shadowing (Stemler, 2001).

#### 4.1.1 Interview Data

Coding analysis for the 11 expert interviews was conducted by first categorizing the interview questions. Seven standard questions were asked in almost all of the interviews. We sub-categorized the 7 question categories by color-coding the subject’s responses to the questions. Each subject’s response category was further broken down by creating a data table to show the common trends in the responses. An example of the common trends data table that was created can be seen in **Appendix B, Table 1**.

#### 4.1.2 Needs Assessment Data

Similar to the analysis of expert interviews, data from the needs assessment was carefully analyzed. Nineteen searches were run in the Learning Management System, or LMS, during job shadowing. Search results were examined carefully and courses were entered into an Excel spreadsheet. Courses were entered into the spreadsheet and color-coded based on the keyword that led to the result. Then the courses were sorted by the primary category so that they could be created in the OSE Training KMS organizational taxonomy. Some courses also had a secondary category. The version included in the appendix is sorted by primary category. The color-coding is an important tool to visually show how different LMS searches yield results that would go under one category identified in the organizational taxonomy. It highlighted the different paths that could lead to the same training course within LMS. A color key to the LMS analysis is located in **Appendix B, Table 2**.

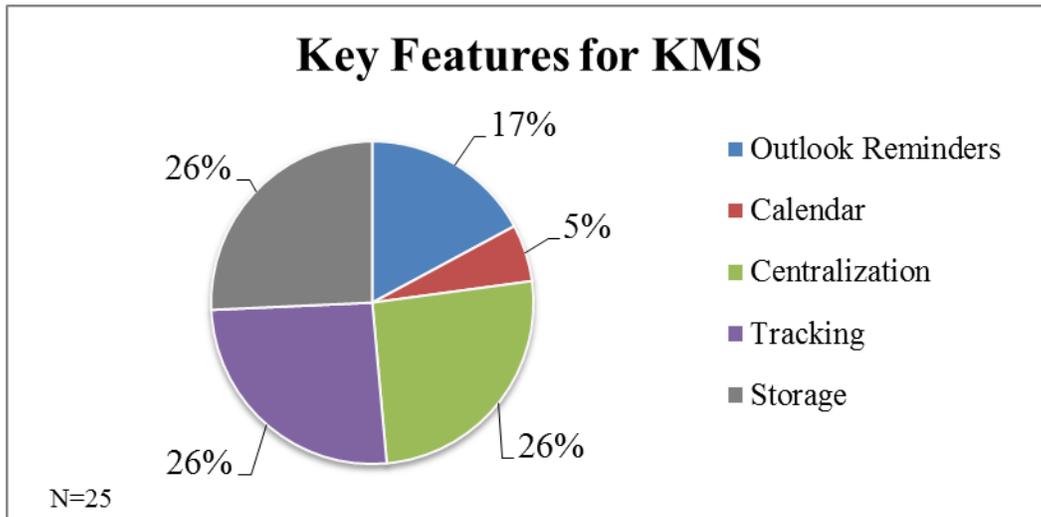
### 4.2 Data

Through analysis of the data from the site assessment, needs assessment, expert interviews, and impromptu focus groups, we developed a well-rounded view of the training structure and needs of the OSE. The data is presented in detail in the following sections.

#### 4.2.1 Site Assessment

Site assessment began upon arrival to the FDA and OSE. While waiting for security clearance and FDA-approved computers, we read through many of the orientation materials that OSE employees would receive. We developed an understanding of office hierarchy through these orientation materials. Knowledge of the office hierarchy came into play later when determining levels of users for the KMS. During this segment of the project, initial sponsor meetings and preliminary interviews defined the scope of the KMS to be created. Additionally from the preliminary interviews, meetings, presentations with different staff leaders, and CDER scientific rounds that we attended, we gained a deeper understanding and appreciation of the OSE and its operations. The preliminary interviews, meetings, and presentations gave us insight

into what key features to include in the knowledge management system. We compiled a list of key knowledge management features that both the OSE staff and leaders asked for. The specific, recurring KMS features that were identified are summarized in the pie chart, **Figure 4.1**, seen below.



**Figure 4.1: Suggestions of Key Features to Include in the KMS**

In **Figure 4.1** the pie chart depicts the percentage of the common trends that were revealed when subjects were asked: “What are some of the specific features you would like to see included in this KMS?”. The main features that were requested to be incorporated into the KMS were: having one, centralized database for all training (26%); tracking of all completed training materials (26%); and providing storage for meta data and continued expansion (26%). Two other features that were requested was for individuals to receive Outlook reminders when training is nearing its due date (17%). The second feature that respondents requested was a calendar that could be used to both personally track each employees training and provide a staff calendar to show when everyone was taking training (5%).

#### 4.2.2 Needs Assessment

One of the FDA’s current sites to access training courses is called the Learning Management System (LMS). Through meetings and interviews with IT experts and OSE staff members with varying levels of experience, common pain point trends with LMS have emerged. LMS has many useful features and contains the majority of training courses and materials for the entire

FDA. However, LMS as a whole is a broken system as there is no search structure and it lacks metadata. For a system that must provide training for over 14,000 people, there are only 2 people to contact if there are problems. Maintenance of LMS has proven to be a continuous problem as courses remain in the system after they have expired and there is no monitoring of courses that are uploaded into the system. Many of the inadequacies of the system exist because everything must be done manually and there is no way to automate the system.

#### 4.2.2.1 In-depth LMS Analysis

Through job shadowing, sample searches of LMS were performed. Careful analysis of these searches corroborated the information discussed in section 4.2.2. Many interview participants alluded to challenges with LMS, but it was important to investigate the system for ourselves. Nineteen searches, yielding 2,340 results, were analyzed. Courses applicable to the needs of the OSE staff were highlighted and categorized into a spreadsheet. An abbreviated form of the needs assessment spreadsheet can be seen below in **Appendix B, Table 3**.

Analysis of LMS showed that searches rarely return the desired results, even if the search term is the exact title of the course. LMS only does a keyword search of the title and a short description of the course. There is no tagging or advanced searching. Of the 727 courses that were thoroughly examined, 252 courses that applied to OSE needs were categorized into 16 categories. These categories defined how the courses would be included in the KMS. It is possible to filter courses within LMS; however, filters must be manually set up by each user. Keyword searches generally return hundreds of results, which become tedious to look through when attempting to locate a certain course. LMS search results often include courses that were a one-time offering many years ago. Some sample search results were only offered once in 2007, however they still appear in searches in 2014.

#### 4.2.3 Expert Interviews

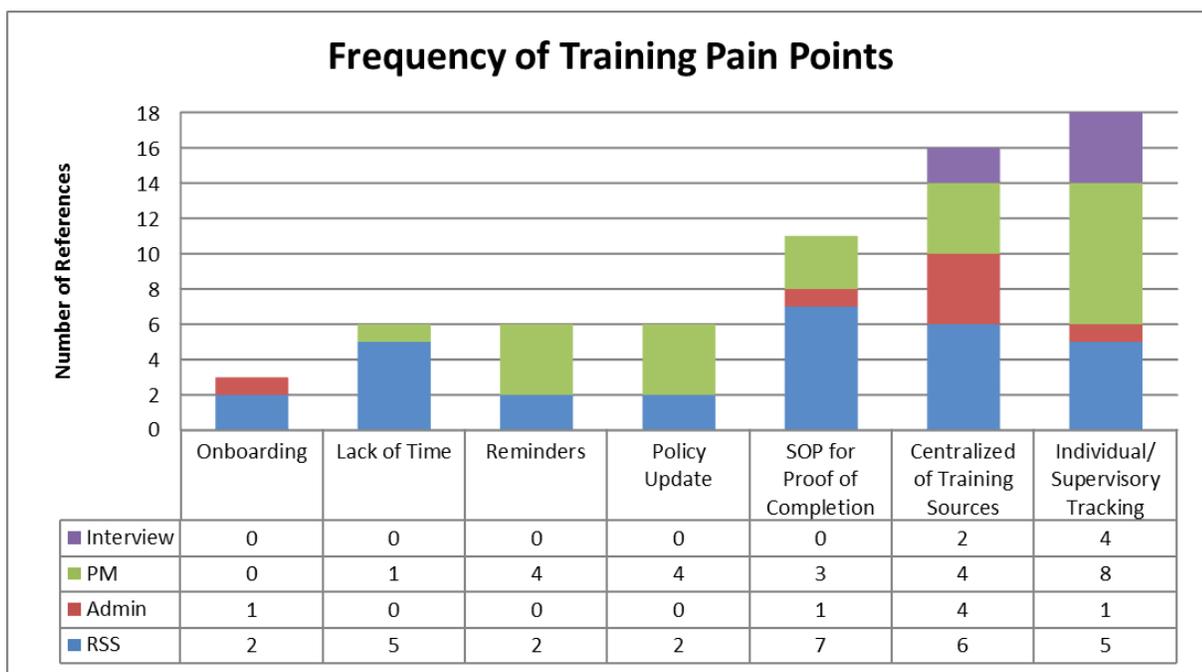
We conducted 11 semi-structured interviews with participants that our liaisons deemed as those with the most critical perspectives. The data collected from these interviews helped us gain a comprehensive understanding of the current challenges in OSE training. We used the snowball method to identify additional interview participants in which each participant we talked to would direct us to another person who could better address our questions or give us additional insight.

The OSE subjects we interviewed were from a range of different divisions and staffs, which gave us a broad overview of the entire office. Each of the interview questions was tailored to address the particular field of expertise of the subject. There were 7 questions in the interview that almost all the participants answered. We compiled the data collected from the 7 recurring questions into a large index sheet. In order to find common trends, the subject's responses were color-coded then compiled into a common trend data table. Pie charts were constructed from the data table in order to quantitatively analyze the common trends from the data table. It is important to note that interview subjects gave several responses to each question and every response was considered as a separate data point. Listed in **Appendix B, 7 Interview Questions (Figures 4.2-4.8)** are some of the questions we asked in the interviews as well as the calculated percentage of common themes from the subject's responses.

#### 4.2.4 Impromptu Focus Groups

Impromptu focus groups were held to help determine the needs of OSE staff members at different levels. Participants groups were selected on a volunteer basis. Three supervisors volunteered their staffs for the impromptu focus groups where participants were asked to speak about their personal "pain points" regarding OSE training structure or standard operating procedures. The impromptu focus group occurred during regularly scheduled staff meetings for the Project Management Staff, Regulatory Science Staff, and Administrative Staff. This combination of staffs provided feedback from many levels of employees within the OSE. The same question regarding a training pain point was asked in some of the interviews as well. **Figure 4.9** shows the frequency of pain points that were brought up.

**Figure 4.9, Frequency of Training Pain Points from Focus Groups and Interviews**



**Figure 9** Shows the frequency with which each training “pain point” was mentioned during the impromptu focus groups. The blue entries are from the Regulatory Science staff, the red are from the Administrative Staff and the green are from the Project Management Team. The purple refer to pain points mentioned during interviews. There were 46 total respondents who provided 66 data points.

All the responses narrowed down to 7 main areas that a KMS could address. The need for individual and supervisory tracking was the most common pain point that came up during the impromptu focus groups. The second most popular pain point was centralization of training sources. These two most popular pain points were the only ones discussed in all four settings. A large portion of the discussion concentrated on the need to develop a standard operating procedure for the storage of training completion certificates. Currently it is the responsibility of the individual to determine how to store personal certificates of completion. Methods currently employed vary from paper files to electronic files of PDFs; however, any staff member must be able to produce each certificate whenever it is requested. Lack of time, necessity of reminders, and compiled policy updates all were mentioned six times during the focus groups and interviews. Development of a comprehensive onboarding checklist was mentioned three times.

This point was mentioned by staff members who were new to OSE and finding it difficult to ensure that they were on the right training path.

These seven main areas of concern match up well with data from the 11 expert interviews. Between the two methods of research, a broad sample of the office was surveyed. Respondents ranged from people who had joined the OSE less than two weeks prior to the focus group to the director of the entire office. The data as a whole is strengthened by the widespread agreement of office leadership, supervisors, project managers, and general staff members.

#### 4.2.5 Job Shadowing

During three sessions of job shadowing, we were able to observe how subjects who were relatively new to the office interacted with LMS and SharePoint. This was our opportunity as contractors to get a look at LMS. Contractors normally are not allowed to access LMS. The first session we observed provided the searches that were analyzed in the in-depth LMS analysis that we conducted. The second session allowed us to see firsthand the frustrations in looking for specific materials in LMS. A subject was prone to stop searching after many unsuccessful search attempts. Subjects expressed a lot of confusion with the inconsistent formatting of training materials between the differing training sites. The third session allowed us to interact with a subject who was very new to OSE. We observed how the subject searched for training material: first in email and then in LMS. The new employee also seemed comfortable with SharePoint after completing some of the online training modules. This firsthand knowledge gave us a better understanding of how to proceed with development of the site, as we did not want to envelope the efficiencies of LMS.

#### 4.2.6 Project Management SharePoint Developer Focus Demonstration

A demonstration was held with the Project Management (PM) team, as they were the first OSE staff that developed their own advanced SharePoint sub-site. Development of the Project Management site has been an ongoing process for nearly 3 years. Responsibility of maintenance of the site is broken down by levels of expertise. The main webmaster is a SharePoint expert and he has conducted staff level training presentations for all of the employees comprised in the PM staff. He has furthered staff training by providing detailed instructional folders within the SharePoint site that contain information on how to navigate through the site as

well as use the specialized tools. These training folders have proved valuable to the PM staff as they can refresh their SharePoint knowledge by accessing these folders. To ensure that all the PM staff employees could navigate through the site they were required to take online SharePoint training modules. Employees comfortable using SharePoint within the PM office conducted private walkthroughs with users who asked for additional and specific assistance in navigating through the site. Some of the standout features the PM site offers is an automated shared calendar for all employees. This calendar is overlaid by different teams within the PM staff and can be updated manually if individuals choose to add their own meetings into the shared calendar. The PM site also includes a desk manual for new employees and provides links for onboarding as well as an excel spreadsheet of all weekly training courses that need to be completed if you are a new employee. One struggle the PM staff has faced is levels of permission. There are sometimes too many hands working to further develop and manage the site. Without communicating to each other, users tend to add, delete, or rearrange documents in the site causing links to break or key folders to be deleted.

This demonstration by the PM staff enabled us to see how the SharePoint site was developed, implemented, and managed. We also learned about the challenges and successes they overcame while integrating SharePoint as a daily functional tool for their staff. We were able to view a fully functional SharePoint site as well as learn the training strategies they used in order to educate their staff on how to navigate through the newly developed site. The insight we gained from this meeting shaped our development of support materials for both the webmaster and end-users.

### **4.3 Beta Test**

A beta testing session was held once the KMS neared completion. Original glitches were sorted out during alpha testing by project group members. It was important to host the beta test to see how users with varying levels of SharePoint knowledge interacted with the site. Overall users seemed to be able to navigate the site well with the help of the user manual. There were minor word choice suggestions that would help improve the site's intuitiveness. The main issue encountered during beta testing was a lack of access to the site. Permissions are a complicated topic in SharePoint. Following the testing session it was necessary to re-evaluate permissions granted to each user to make sure all features of the KMS were accessible.

#### 4.3.1 Training KMS Demonstration

A demonstration of the OSE Training KMS was conducted in order to show the OSE staff how to navigate through the site as well as familiarize the staff on the particular features of the site and their corresponding functionalities. The demonstration had an in-depth walkthrough of the site and also allowed for staff members to ask questions. From this demonstration, the staff members became knowledgeable about the developed site which will enhance their use of the site in the future. The staff's questions, comments, and insights helped our development of the user, developer, and webmaster manuals as we included protocols for specific functionalities based on the questions we received.

#### 4.4 Gap Analysis

There are several knowledge gaps in the current OSE training systems. These gaps include slow adoption of center-wide usage of SharePoint, undefined requirements for training courses, lack of monitoring processes, no maintenance of an updated employee list, and incompatible communications among the current training sites.

➤ Inconsistencies with current SharePoint implementation and training strategies

From various meetings, interviews, and a SharePoint training class that we attended, we learned that the FDA migrated away from eRoom as their form of document sharing and organization as it became a dumping ground of documents. The immense number of documents placed into the eRoom system ultimately caused the entire shared drive to collapse. The FDA reevaluated their system for shared drives and, in January of 2013, adopted the Microsoft application SharePoint. Since this time, only about 1,700 FDA employees out of 14,000 have attended the FDA center wide SharePoint training seminars due to the varying levels of use and adoption amongst offices and divisions. As a result, the FDA SharePoint help desk receives a vast number of tickets asking questions that the baseline SharePoint training session could have easily answered. eRoom officially ended in April of 2014. Since then, the FDA has set its ideal goal to have all employees switch to SharePoint, but there has been slow adoption of switching over from eRoom to SharePoint. In October, 2014, the last division's extension to use eRoom expired, and now all centers must adopt the SharePoint solution. Because there wasn't a unified center conversion to

SharePoint, there are huge knowledge gaps on how to use the system throughout all of FDA. Some centers proactively use SharePoint and are considered experts in the field while others have never even accessed SharePoint. Divisions that have adopted SharePoint are demanding advanced training seminars, thus there is a widening overall gap of knowledge and skill level among FDA staff members. This slow adoption to change pushed back implementation of advanced SharePoint training seminars. As recently as October, 2014, the first advanced SharePoint training seminar “Permission Boot Camp” was revealed to allow SharePoint site owners to learn new developer tools. Employees are still in need of more advanced training seminars, thus widening the knowledge gap, as about 88% of FDA has not attended basic SharePoint training.

➤ Undefined Requirements

Currently the only formally required training is three agency-wide courses. These courses include: computer security, records management, and ethics. Supervisors and Contracting Officer Representatives (CORs) have additional requirements they must meet. Only one staff within the OSE has defined training requirements necessary to work on their team. It took the team nearly three years to define exactly what training is mandatory for their team. Requirements were then categorized as “mandatory” or “highly recommended.” The staff-defined requirements have proven to be a useful resource for the staff that took the time to develop them. Additionally there are several broad roles within the OSE that comprise many of the divisions and staffs. Role standardized training has not been defined. Staff members from different divisions/staffs with the same role will often come together and work on a special project. Role specific requirements would ensure that all team members on a project would share similar basic skills.

➤ Lack of monitoring Processes

The OSE is lacking a one-stop database that contains all necessary training materials and there are multitudes of differing ways to access training courses; so an automated tracking tool is impossible. There is no current way to track when a training course is occurring, track when the training course was completed, or save the certificates of training completion. This is especially troublesome for employees who must maintain licensure and have to manually

track their credits. There are currently three FDA-wide training courses that must be completed and non-compliance can result in loss of computer access. There has been a recent emphasis on 100% compliance in course completion. These courses are extremely difficult to track, as completion for each employee must be manually entered into a spreadsheet. In order to track down employees who are non-compliant, emails are sent to the supervisor identifying the non-compliant employees; and from there the supervisor is left solely responsible for making sure their staff (~ 20 employees) is compliant with the training. The supervisor then reports back to a person within their office who is in charge of tracking the training of the entire office (~300 employees). This process is extremely tedious and takes away time from leaders and supervisors of the office who should not have to spend their time completing unnecessary busy work.

➤ Maintenance of Personnel Lists

Through interviews with respondents who were responsible for reporting on required training, we discovered the importance of accurate staff lists. In order to achieve 100% compliance, all staff on the list must prove that they have completed the training modules. The current system relies on lists of personnel from EASE that can include new employees who haven't joined yet, employees who transferred, and employees who left the FDA altogether. With inaccurate personnel lists, time is wasted searching these inaccurate lists. An administration of 14,000 people should not have the problem of not knowing for which office an employee works. Currently, there are no annual, biannual, or quarterly list maintenance procedures.

➤ Incompatible Systems

There are many sources of training within the FDA that OSE staff members need to access. Many of the systems are incompatible with each other. LMS is the most used training source; however, it is notorious for its inability to communicate with other programs. The only function that LMS does have is the ability to export a list of courses to Microsoft Excel. There was consideration of using Adobe Connect for training; but, 0% of the interview respondents mentioned it as somewhere they search for training. Adobe Connect has some very useful features; however, since LMS contains almost all of the training for not only the

FDA, but the entirety of U.S. Health and Human Services, Adobe has not caught on and is being phased out. The most common method of finding training is the use of Outlook emails sent out by staff in various positions in the office. Access to an LMS course through Outlook can only be achieved through a link. The links to LMS only remain active for about 60 days. It is also difficult to sort through where to find training. With hundreds of emails received each day, this is an inefficient way to approach searching for training. Searching for training materials has become tedious with all the different systems in place.

## **4.5 Practical Considerations**

Analyzing the current challenges of training for the OSE allowed us to find practical solutions to the challenges that employees face. Through interviews and meetings, we were informed on the limitations with the current training systems. As we gained more data and insight through our search strategies, we learned more about the needs of the OSE staff. We found that SharePoint promotes collaboration and provides out-of-the-box features that can combat the inconsistencies of the current system.

### **4.4.1 Efficiencies and Limitations**

Inefficiencies with the current ways to locate training have hindered employees' ability to enhance their job performance through taking training. There is not one centralized site to access training materials; instead, employees must perform labor-intensive searches through several internal and external programs in order to locate the training courses they need. Some of these internal sites are emails, intranet sites, and LMS; and the external sites include professional societies, universities, pharmaceutical companies, and other federal agencies' databases. Lack of a centralized system that contains all training materials has created many roadblocks in the training process. Employees search through several sites to find training. If they don't know exactly the title of the course they are looking for, the search results using keywords can produce over 250 results. OSE employees are very busy and must remain vigilant in all areas of their expertise from drug laws to brushing up on scientific writing. Time management is key, but since so much time and effort is spent just searching for training material, most employees opt not to complete the courses, as it has become a hassle.

#### 4.4.2 Social Implications of Implementing an OSE training KMS

The OSE employees work in a complex environment and must manage much knowledge on a daily basis. Thus it is imperative that each employee maintains currency in their field of expertise, as they are required to be knowledgeable on varying topics such as current drug laws. Training is an essential component for an OSE employee as they must be up-to-date on all the current tools and findings. The OSE as a division is comprised of individuals with varying expertise who collaborate together to meet the FDA mission of public health safety. Employees must be current in their own fields as well as maintain a working knowledge in the fields of their colleagues in order to collaborate effectively.

Creating an efficient and effective knowledge management system in itself is a challenging problem, as strict boundaries for the system must be established. Through our social science research methods, we learned how to best organize the KMS to meet the needs of the OSE staff. There are many moving pieces within the OSE, so it was vital that we determined the needs of the OSE staff. The needs were determined through various interviews, meetings, impromptu focus groups, and job shadowing. Through our social science research methods we observed gaps in the current OSE training system. The KMS we developed is unique due to the taxonomy and the metadata structure that we created. The information gathered through interviews and impromptu focus groups determined the structure of the taxonomy to ensure that it addressed user needs and aligned with common search strategies. A knowledge management system differs from a database in that it is not just a list of links, but it addresses the needs of the employees. SharePoint is a site that promotes collaboration and the goal for our KMS was to provide employees with a system in which they could quickly locate and complete training. The KMS that was developed is distinctive as it not static, but a live shell site that can be replicated to other divisions. It is in this live shell aspect where the social component becomes apparent in this project.

#### 4.5 Summary of Key Findings

Coding analysis was chosen as the best statistical analysis method to interpret the data collected from the expert interviews and needs assessment. From the site assessment, a broader understanding of the FDA and specifically the OSE division was revealed. We arrived at the key

features for the knowledge management system through use of pie charts depicting the common themes resulting from the responses we received. Using coding analysis, we were able to establish in the needs assessment the weaknesses with Learning Management System (LMS) and to understand how our KMS will begin to address these inconsistencies. Challenges within LMS were largely due to the lack of smart searching tools such as metadata and tagging as well as the complete lack of maintenance of the system. The expert interviews provided quantitative results on common trends that were revealed for some of the questions asked in the interviews. The pie charts, located in **Appendix B**, helped determine what the OSE staff is looking for, so we could integrate their ideas into the KMS we developed. Unlike IT contractors that the FDA usually hires for projects of this type, we had the unique opportunity of working very closely with the stakeholders in the project. With the extensive research of user needs and increased access to current systems, the potential impact of our project exponentially increased as it addresses very specific needs of the OSE in a way that best serves them. Our analysis also revealed problems in the current system and the features to develop in the KMS that can combat these inconsistencies. The gap analysis showed the knowledge gaps with the current SharePoint training and emphasized the necessity of having a well-trained staff. Others gaps that were revealed were a lack of monitoring processes in the current training site and inefficiencies and limitations within the current system. We also discussed a deeper analysis on the social implications that the KMS addressed.

## Chapter 5: Results

Through our social science research methods and data analysis procedures presented in Chapters 3 and 4, we have developed four deliverables for the OSE. The first deliverable is our modular organizational taxonomy. Next we defined the levels of users for the KMS within the OSE and drew parallels between office user levels and standard SharePoint user levels. Then a functioning knowledge management system was built in Microsoft SharePoint. Finally support materials were developed for users, supervisors, developers, and the webmaster.

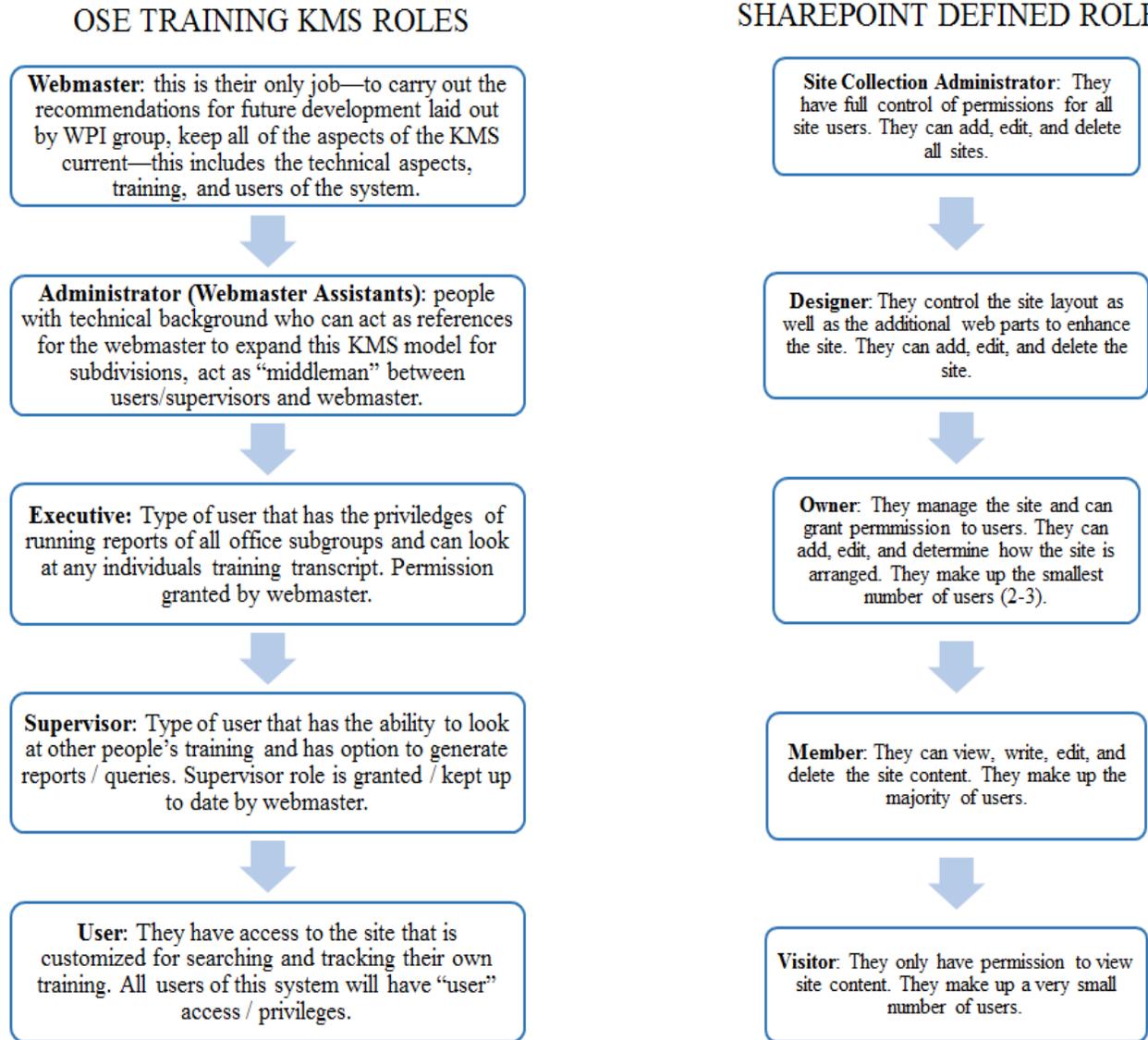
### 5.1 Organizational Taxonomy

An organizational taxonomy was developed as the search structure for the OSE Training KMS. With the knowledge we gathered about office training structure and user needs, categories, groups and classifications were associated with each training source in order to maximize search effectiveness. After much discussion, five major categories were defined: FDA Agency Required (Annually), Professional and Continuing Education, Data Systems, Fundamentals, and Career Skills. The taxonomy was refined through the agile method, meaning a draft was developed, presented to project sponsors and edited. This cycle was repeated until the organization of courses and definitions of terms were acceptable to the main stakeholders of the project. The FDA Agency Required category includes agency-wide requirements. It also includes courses that meet the additional training requirements of supervisors and contracting officer representatives. The Professional and Continuing Education category gives users access to professional societies, organizations, and journals that can be used to keep current on new developments in their respective fields of expertise. This category is also where staff members can sign up for FDA seminars that can count toward continuing education credit. The Data Systems category houses training for internal and external programs which are used daily in staff duties. The Fundamentals category includes training on basic skills needed to function effectively at FDA such as grammar refreshers, Microsoft Office training, and English as a Second Language. The Career Skills category contains courses aimed to build a staff members interpersonal, intrapersonal, and leadership skills. A graphic representation of the organizational taxonomy can be seen in **Appendix E, Figure 5.1**. Each category is shown in more detail with **Figures 5.2-5.4**. The fully expanded taxonomy including courses can be seen in **Appendix E, Table 1. A**

taxonomic dictionary was developed to ensure that the structure would be utilized throughout further population of the site. The dictionary is shown in **Appendix E, Table 2**.

## **5.2 Levels of Users**

In SharePoint there are various hierarchical groups that are used in order to provide security. By managing site permissions each predetermined group will only be allowed to view, access, and edit certain lists, list items, web parts, and tool functionalities within the site. Groups allow for an efficient way of organizing users permissions as individuals within certain groups share all the same permissions. This safeguards that only users with qualified SharePoint knowledge and experience are editing, maintaining, and developing the site. SharePoint has identified five main permission groups for users, but we have customized these permissions to fit the needs of the OSE users. These user-defined roles are showed below in **Figure 5.2**.



**Figure 5.5: Levels of Permissions**

In **Figure 5.5** the hierarchical permission groups are shown starting with the group with full developer privileges. The right hand list shows the groups of users within the OSE Training KMS and the left hand list shows the levels of SharePoint defined by the *Office Pro SharePoint 2010 Manual*. The five user permissions we established for the OSE Training KMS closely mirror the levels of users that SharePoint has defined.

- 1) The highest permission group that we have defined is the Webmaster. The Webmaster’s role will be to grant permissions to all users. This is important, as someone must manage all the group’s permissions. As employees join and leave the

OSE it will be the Webmaster's role to keep the user directory up to date and add or remove employees from groups to maintain organization. The Webmaster will carry out the recommendations that we have provided for future development and will keep all aspects of the KMS current. They make up the smallest number of users, as there should only be one or two within the OSE.

- 2) The second permission group level is the Administrator or Webmaster Assistants who are individuals with IT and SharePoint technical backgrounds that implement the developing, site layout, and maintenance requests from the Webmaster. The Administrator role is to enhance the site and its web parts. They cannot make any changes within the SharePoint site unless instructed to do so by the Webmaster. This group can include a few users.
- 3) The next permission group is the Executive. Those within the Executive group are users that can run office wide tracking reports to see which employees are compliant in completing mandatory FDA training courses or highly recommended courses. They can review any user's training transcript.
- 4) The Supervisory permission group will be able to access the supervisory tracking tool that will give them the ability to look into the training course transcripts of individuals in their staff. Supervisors will have the ability to track their staff's training by filtering by the individual or the specific training course.
- 5) The lowest permission group is the user. The user will have access to the site in order to track and locate training materials, but they will not be able to look at any other individuals training course transcripts. Users cannot edit or delete any of the site content, but they can add and remove training courses from their transcript or training path.

Groups are a way to automate the process of assigning Permission Levels to users. Instead of manually assigning each specific user certain permissions, the Webmaster can assemble individuals into groups and assign each group certain permissions. This also provides for better organizational structure of the user directory. Defining the specific user groups for the OSE

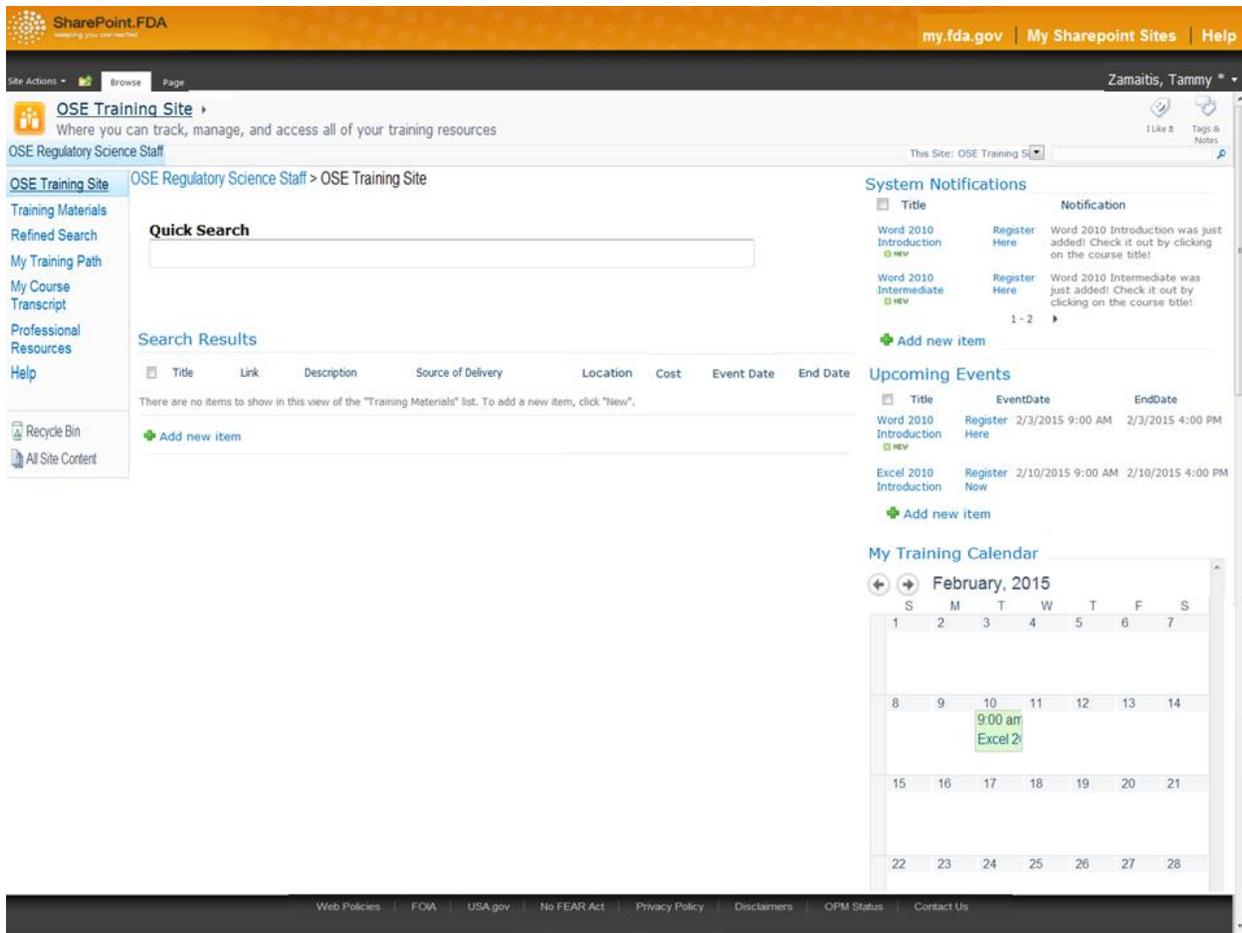
Training KMS will provide for ease of access and ensure that only individuals with expert SharePoint knowledge will be the ones making any changes to the site.

### **5.3 OSE Training Knowledge Management System**

This section presents our SharePoint shell site. It focuses on the functionality of the site. The site was built to address many of the challenges faced by OSE staff members when finding, organizing, and tracking their training. It includes many of SharePoint's out-of-the-box (OOTB) capabilities to incorporate all of the ideas that our group determined would best serve OSE employees. The site uses lists, views, workflows, custom forms, and pages to implement most of the requested functionality identified during our data collection and analysis. Anything that was not immediately addressed in this initial creation is addressed in both the recommendations section of this report as well as in the Developer's Guide provided.

#### **5.3.1 Site Home Page Interface Elements**

The first thing that a user will see is the site Home Page. The Home Page contains many of the standard SharePoint features including the Quick Launch Bar, List Web Parts, Filter Web Parts, and Breadcrumb Navigation. The functionality provided by the site Home Page includes notifications, searching, tracking, and site navigation. The site Home Page can be seen in **Figure 5.3** below.



**Figure 5.6: OSE Training Site Home Page**

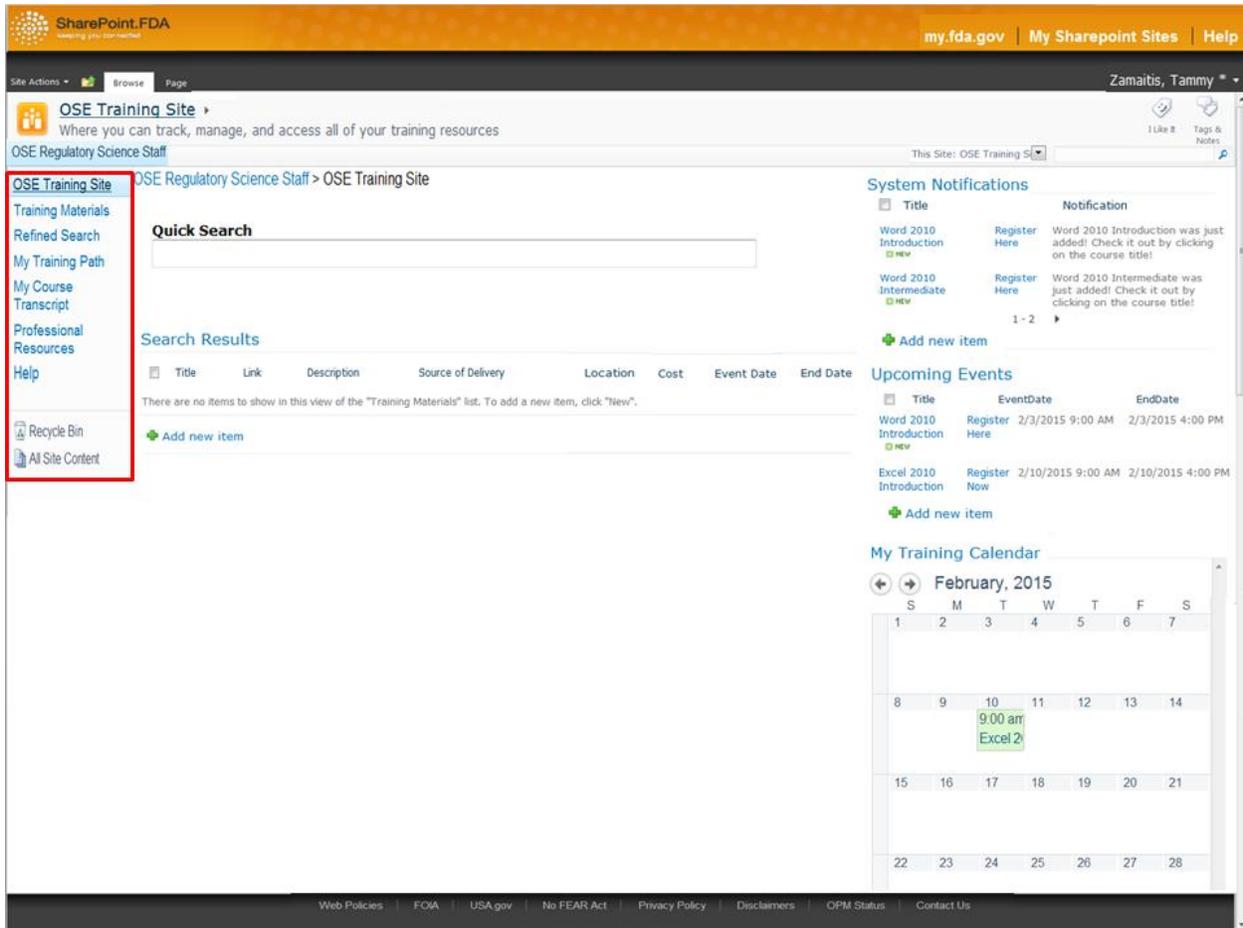
**Figure 5.6** displays the OSE Training KMS homepage along with the previous listed key interface elements located on the site.

### 5.3.2 Site Navigation

The ability for users to easily navigate through a knowledge management system is of the utmost importance, because a key part of knowledge management is making information and knowledge as easy to access as possible. Navigation of the site is accomplished through two main OOTB SharePoint features: Breadcrumb Navigation and the Quick Launch bar.

Breadcrumb Navigation is a standard feature of any SharePoint site, and allows users to keep track of their location in the site and return to previous pages as necessary. The Quick Launch bar, a standard SharePoint feature, contains several links that connect to different lists and pages

contained in the site. **Figure 5.7** shows the Quick Launch Bar which is located on the right hand side of the Homepage.



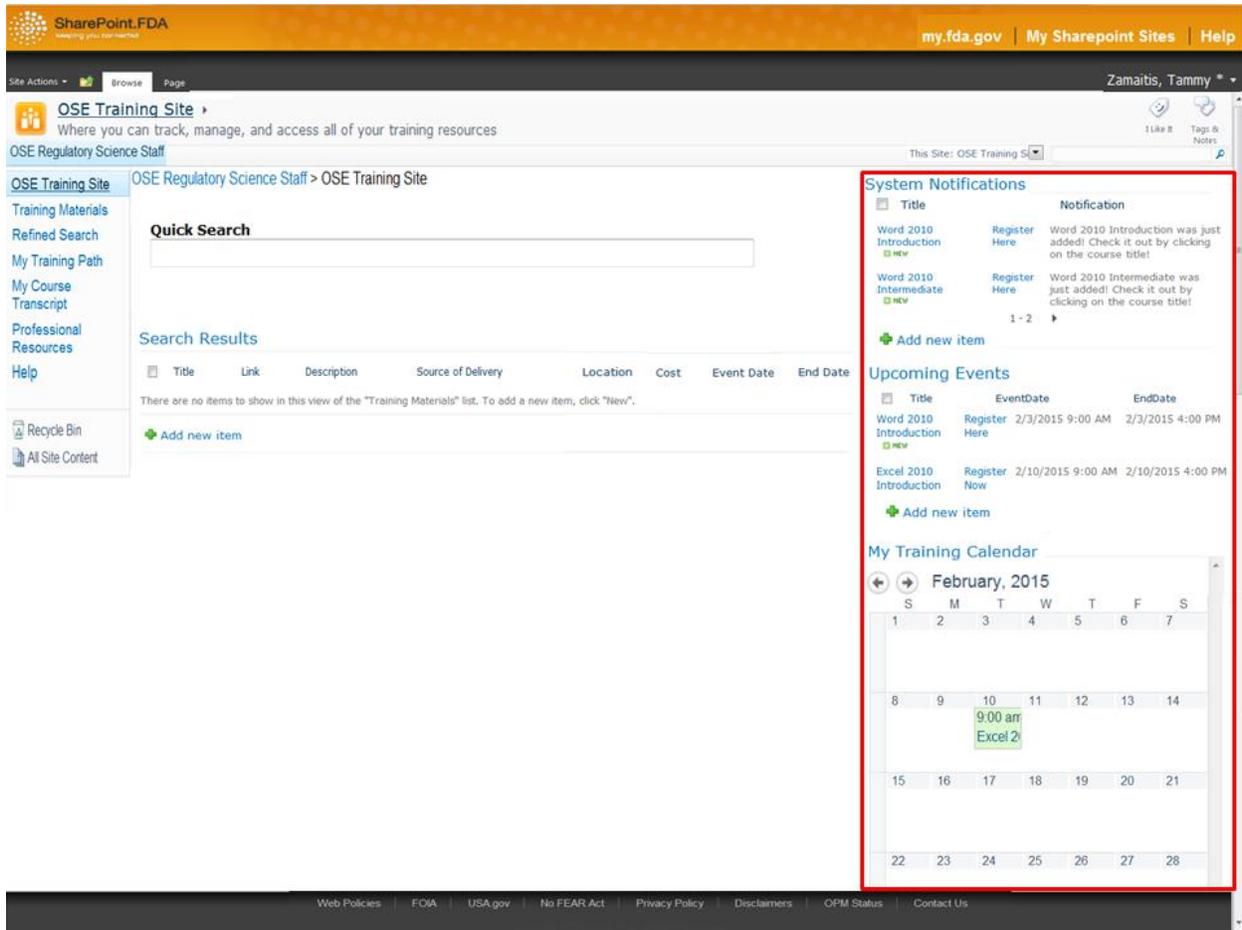
**Figure 5.7: Quick Launch Bar**

In **Figure 5.7** the Quick Launch Bar is highlighted in red and contains several buttons which provide access to the Training Materials list, Refined Search page, My Training Path list, My Course Transcript list, Professional Resources list, Supervisory Tracking Tool (if a user has correct permissions), and Help list.

### 5.3.3 Site Notifications

The OSE Training Site addresses the pain points of staff members on needing a tool that provides for notification on when training courses are near completion. There were three distinct times that users wanted to be notified about training: when it is initially put into the system, when potential trainings are upcoming, and when training that they have registered for are due.

The Site Home Page provides three different List Web Parts to address each one of these scenarios. These notification methods are shown in **Figure 5.8**.



**Figure 5.8 Training KMS Notification Tools**

The notification web part tools are located directly on the homepage of the site. The three tools which are highlighted in the screen shot in red are as follows: System Notifications, Upcoming Events, and My Training Calendar.

The first notification feature we will discuss is the System Notifications which is a view of the Training Materials list. This view is constructed by leveraging SharePoint's filter functionality. In specific, this view filters Training Materials list items based on whether they were created in the past 7 days by comparing the value of Created to [Today]. It also uses the ability to limit the number of items displayed and has an item limit set at two; so that it will not take up too much space on the Home Page. Courses that are nearing their due date (no matter

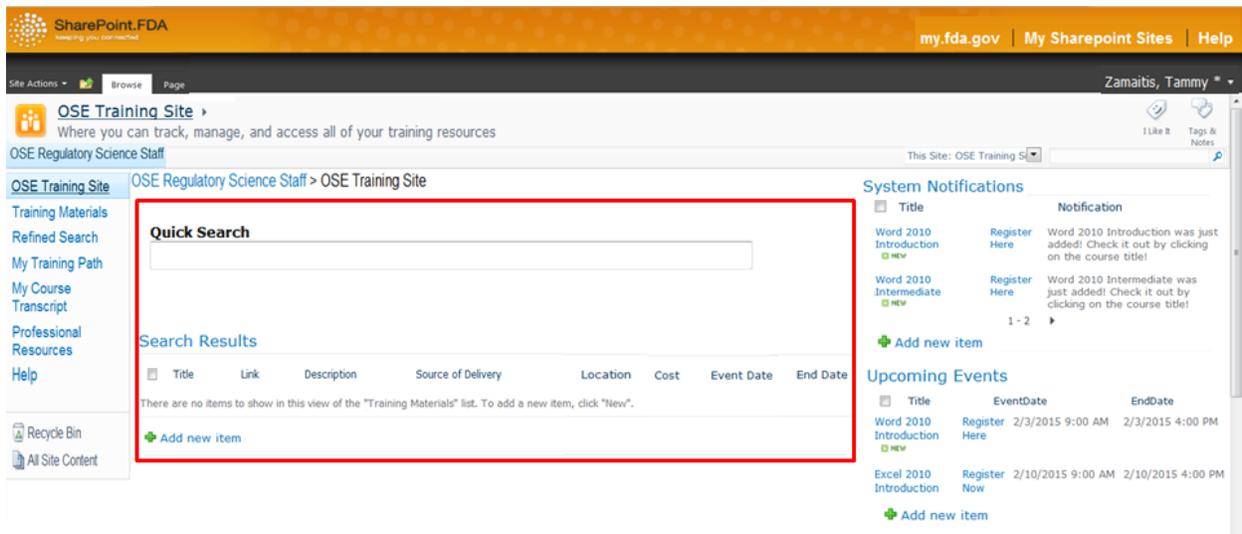
whether a user has registered for them) will be displayed by the Upcoming Events List Web Part. These notifications will allow users to see potential courses that they could register for. The second notification web part tool is Upcoming Events which is a view of the Training Materials list. This view also utilizes SharePoint's OOTB software filter abilities to differentiate Training Materials list items based on whether their due dates are within the next 60 days by comparing the value of Due Date to [Today]. It also has an item limit set at four, so that it will not take up too much space on the Home Page. Setting item limits is an OOTB option for list views. The final method that the site uses to notify users of upcoming training that they have registered for is the My Training Calendar List Web Part. My Training Calendar is a view of the My Course Transcript list. Like the other two views above, My Training Calendar filters the list items based on whether the Assigned To Me: column is equal to [Me] in this way the Calendar will only display training courses the user has registered. Through our development of these notification methods, we were able to leverage SharePoint concepts such as [Today] and [Me], which allow for filtering based on the date and the current user. Lastly, as part of the OOTB tools, SharePoint can send emails to users that contain hyperlinks. Through research, we developed a hyperlink that creates an iCal calendar invite that users can add to their personal Outlook calendars. Also from either the Training Materials or My Course Transcript lists, a user has the ability to run a workflow that sends an email that contains an Outlook Invitation which links to their personal Outlook Calendar. This allows users to be notified of upcoming training courses they registered for without having to access the SharePoint Training KMS site. All of this functionality provided by SharePoint allowed us to address user needs regarding notifications about training.

#### 5.3.4 Searching For Courses

One of the main pain points of current training systems was inefficient searching tools. For the OSE Training Site, we developed the Quick Search Web Part, Cascading Search list view, and Search page.

- Quick Search

The Quick Search and Search Results are located on the OSE Training Site Home Page. The search functionality is accomplished through the use of two connected Web Parts. The Quick Search and Search Results are seen below in **Figure 5.9**.



**Figure 5.9 Quick Search and Search Results**

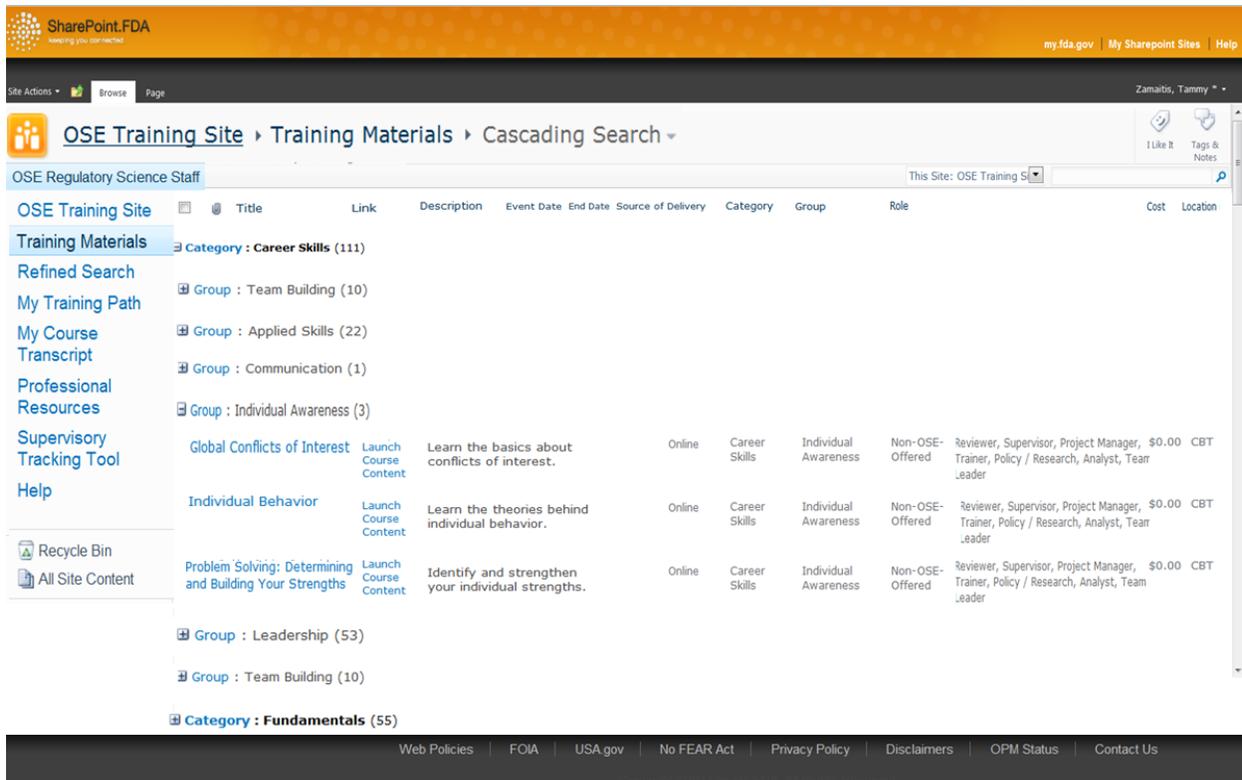
Figure 5.9 shows the Quick Search tool bar and the Search results that populate once fields have been met for the Quick Search tool bar. It contains a Text Filter Web Part titled “Quick Search” and a List Web Part titled “Training Materials.”

The value that a user inputs into the “Quick Search” Text Filter Web Part is compared to the title, description, and hidden metadata columns of all of the list items in the Training Materials list. Keyword exact match searching is avoided by checking to see if any the connected columns “contain” values entered into the “Quick Search” Text Filters. This method of checking for containment rather than equality allows for more dynamic searching. This list view also shows the most popular offerings by leveraging sorting functionality provided by SharePoint. It will display courses that have the most number of employees registered at the top of the list.

- Cascading Search

The Cascading Search is a view of the Training Materials list. It contains all of the same list items as the All Items view, but they are grouped by the columns Category and Group then sorted by the column Classification. These three columns form the structure of the taxonomy.

Figure 5.10 shows the Cascading Search.

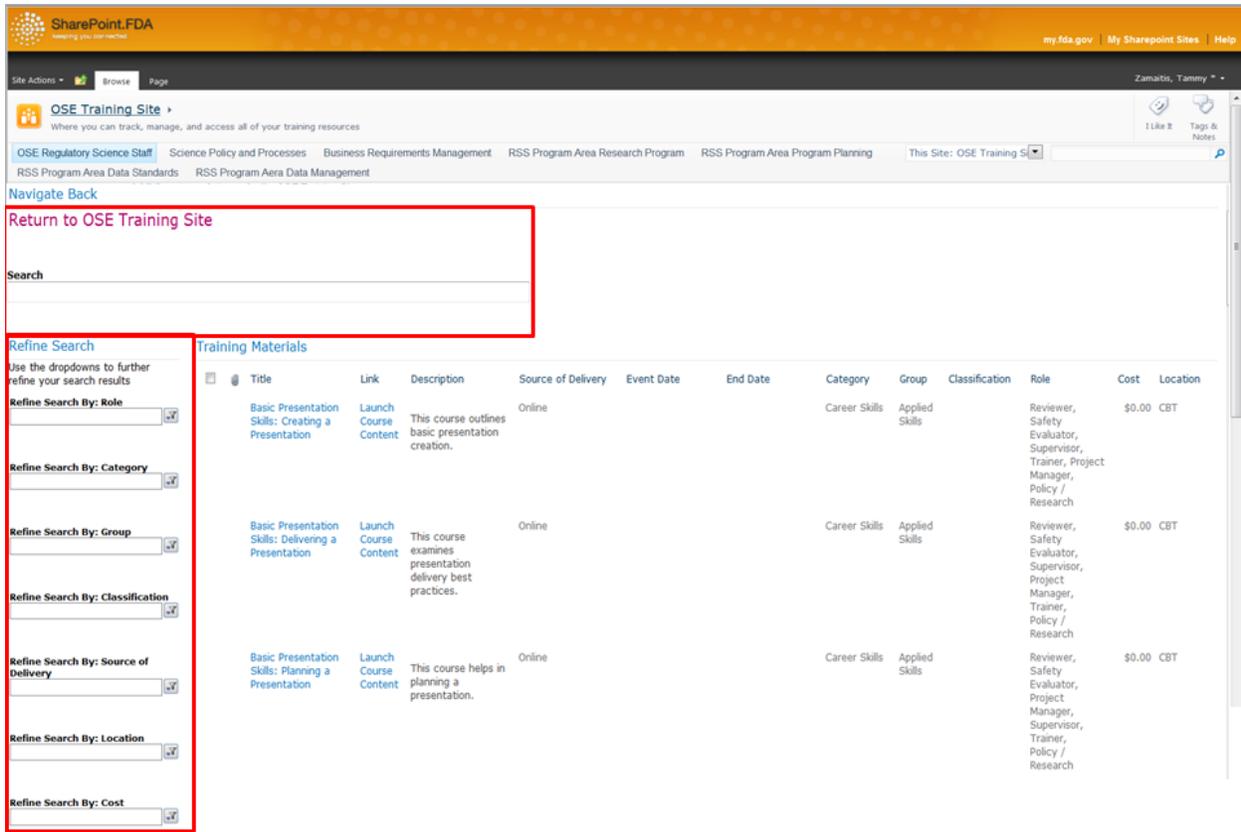


**Figure 5.10: Cascading Search**

In **Figure 5.10** the grouping and sorting is accomplished using OOTB SharePoint list view editing options. The Group by: functionality groups all list items that have the same values for a given column. For the Cascading Search view, Group by: is applied to the Category and Group columns. The Sort: functionality determines the order of list items based on their values for a given column. For the Cascading Search view, Sort: is applied to the Classification column. The Cascading Search view shows list entries as they are located within the taxonomy.

- Refined Search Page

The Refined Search Page was developed to provide advanced searching capabilities. The search Page and its corresponding drop down filters are shown below in **Figure 5.11**.



**Figure 5.11: Refined Search Page**

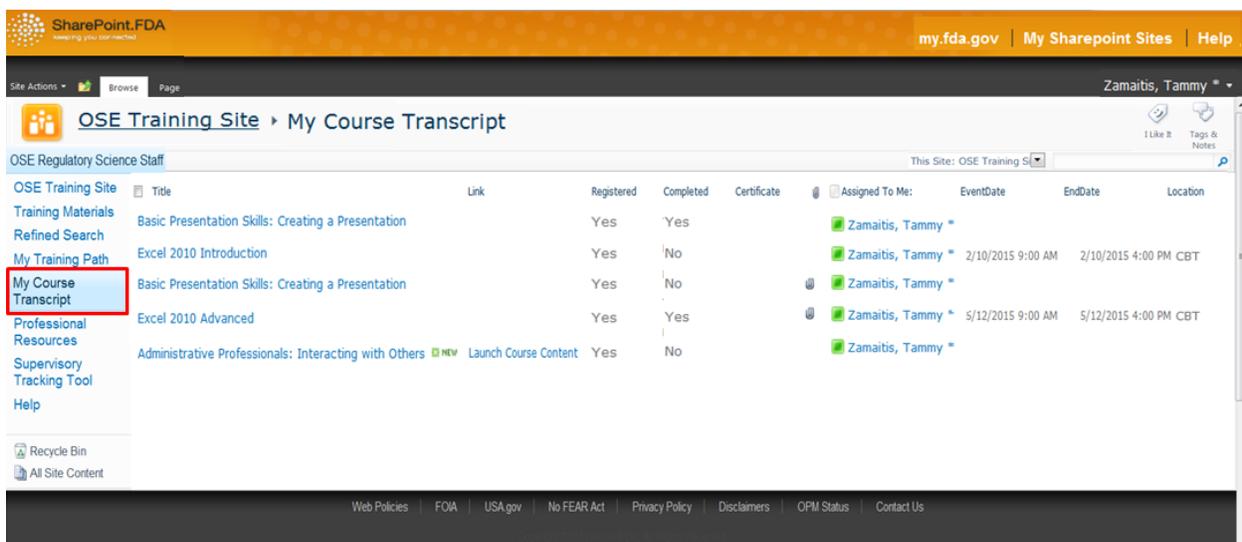
Figure 5.11 Shows the search page which is comprised of four different types of Web Parts: Text Filter, SharePoint List Filter, List, and Content Editor. Highlighted in the screen shot are the Search tool bar as well as the Refine Search bar with the corresponding drop down options.

The Content Editor provides a hyperlink that allows user to navigate back to the site Home Page. The Text Filter is used to do an initial search of the Title and Description column. This is accomplished by connecting the “Search” Text Filter Web Part to the Training Materials List Web Part. Like the Quick Search, this search compares values in the Text Filter as parameters and checks whether they are contained rather than equivalent to the values in the Title and Description columns. Once the list items are filtered based on the value typed into the Search Text Filter, a user has the ability to further refine the filters on the list items by entering values into any one of the SharePoint List Filters located on the left under Refine Search. All of the results from the values of the filters are shown in the list Web Part.

### 5.3.5 Tracking of Courses

Another main feature that we wanted to incorporate is tracking for both users and supervisors. We used two different lists to include tracking functionality. We also applied custom permissions to these lists to ensure that supervisors could have a private tool to use. There are three tools that were developed that provide for tracking functionality and these are My Course Transcript, My Training Path, and Supervisory Tracking tool. These tools are located within the Quick Search Tool Bar.

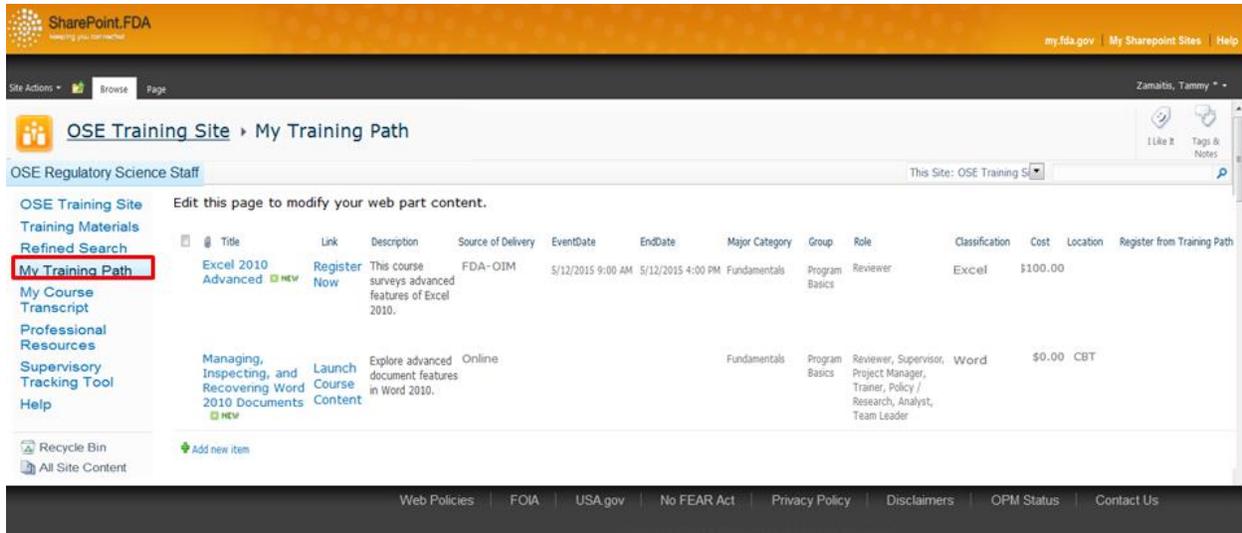
The first tool with tracking functionality is My Course Transcript which provides users with the ability to track their training progress. When a user adds a course from the Training Materials list to the My Course Transcript list using the Add to My Course Transcript workflow, a new list item is created and populated in My Course Transcript. This tracking feature is shown in **Figure 5.12**.



**Figure 5.12 My Course Transcript Web part**

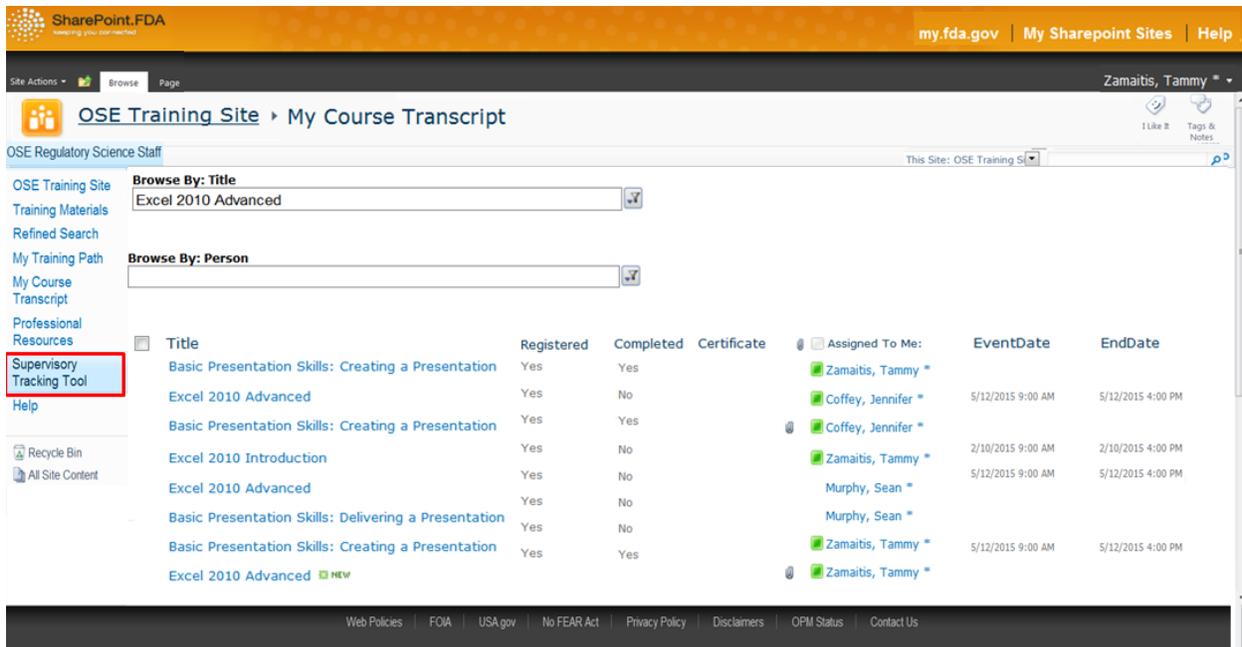
**Figure 5.12** shows My Course Transcript where the t list item is assigned all of the values from the Training Materials list which is also assigned to the current employee who initiated the workflow. The columns in My Course Transcript include Yes/No columns that indicate whether a user has registered or completed training. The view that users can see once again leverages SharePoint's filtering capabilities according to filter list items according to whether Assigned To Me: equals [Me].

The next feature that provides tracking is the My Training Path list which contains list items that have the same columns and values as list items from the Training Materials list. The My Training Path list page is shown in **Figure 5.13**.



**Figure 5.13** shows the My Training Path list site gives staff members the ability to plan which trainings to take. It is meant to hold people accountable by making them physically record their plans and path regarding training. The list relies on a filter that filters items based on whether they have been assigned to the current user (i.e. Assigned To Me: equals [Me]). When a user adds a course from the Training Materials list to the My Training Path list using the Add to My Training Path workflow, a new list item is created and populated in My Training Path. In this workflow, the new My Training Path list item is assigned all of the values from the list item from the Training Materials list and also is assigned to the current employee who initiated the workflow.

The final tracking tool was the Supervisory Tracking Tool which addresses the main point of many of the supervisors from whom we collected data from. The Supervisory Tracking tool is shown in the screen shot in **Figure 5.14**.



**Figure 5.14 Supervisory Tracking Tool Page**

In Figure 5.14 show the supervisory tracking tool which is only visible from the Quick Launch bar to supervisors with the correct permissions. Supervisors will have the ability to search the list items by filtering based on a specific staff member, a specific course title, or both. Filtering based on these values is implemented by connecting two SharePoint List Filter Web Parts to the My Course Transcript list.

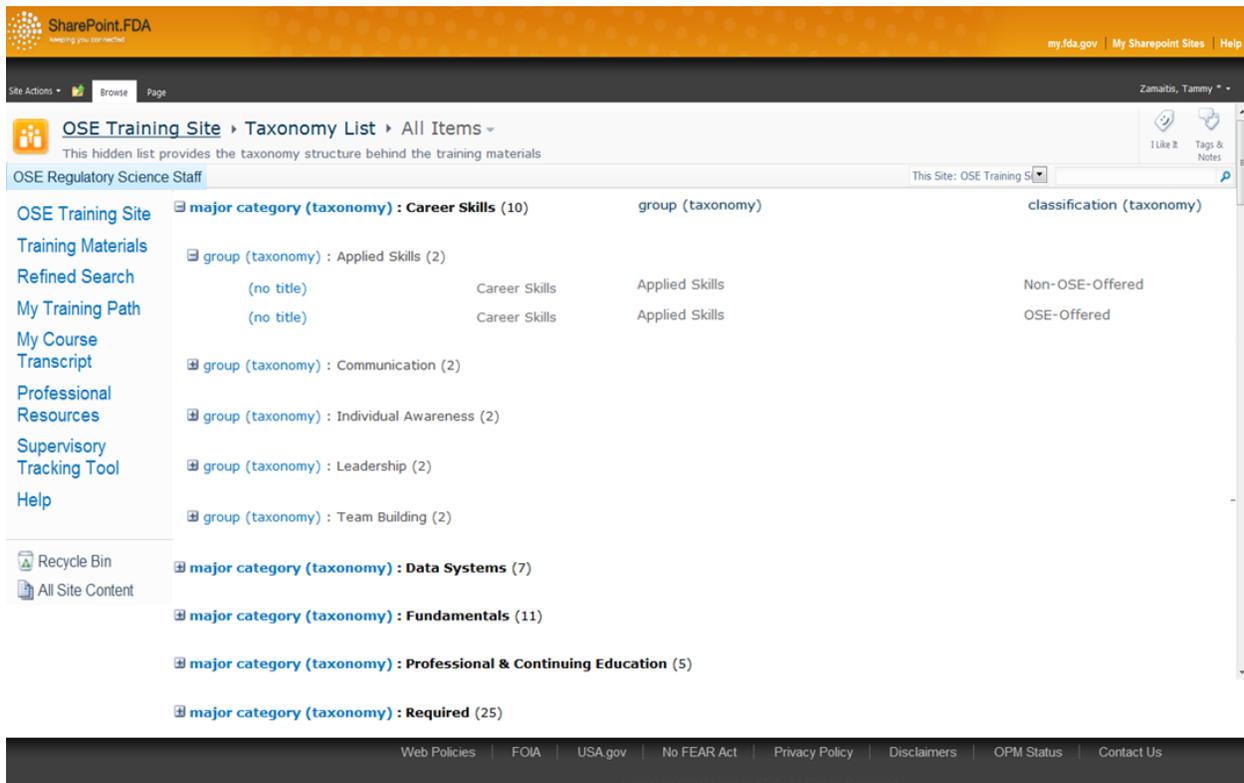
Supervisors determined that one of the main challenges of the current training system was that there wasn't an efficient way to track the progress of their staffs. Supervisors wanted to be able to check for compliance or see which members of their staffs would be good for a particular project based on their training record. The Supervisory Tracking Tool filters the list items based on who whether they were assigned to the user. This functionality is a more manual way of tracking, and some of our recommendations will address how to possibly automate the process.

### 5.3.6 Course Organization

One of the biggest features of our knowledge management site is the taxonomy that we created to organize and outline the current structure of training in the office. The Taxonomy List is the way that we enforce the taxonomy to be followed when creating new course entries. This list is a product of weeks of research and analysis, and it helps distinguish the site as a

knowledge management system. In the Taxonomy List, place-holder entries are organized and grouped by the columns major category then group. Then the entries are sorted by classification. The method for filtering and sorting list entries is the same as described in our discussion of the Cascading Search view of Training Materials. The Taxonomy List is used and followed when the webmaster or administrator enters new items into the Training Materials list using the custom InfoPath form.

The Training Materials list has a custom form for entering and editing new List Items that was designed in InfoPath. List Items for Training Materials can only be entered or editing while following the rules of the taxonomy created and recorded in the SharePoint site. All of the options for entering new courses are derived from the hidden list Taxonomy List, and they follow set options. The SharePoint taxonomy list is shown in **Figure 5.15**.



**Figure 5.15 OSE Training KMS Behind the Scenes Taxonomy**

**Figure 5.15** shows the SharePoint taxonomy that works behind the scenes. When entering a new item, the options for the Group dropdown are filtered by the value of Category. Likewise, the options for the Classification dropdown are filtered by the value of Group. The concept of

filtering a dropdown list based on the value of another dropdown list is called cascading dropdowns, and we implemented this functionality to ensure that the taxonomy is effective in both the present and future.

The SharePoint site that was developed reflects the pain points identified by the staff as significant challenges and problems with the current system. The pain points that we found were all translated to underlying issues with the current state of training for OSE. Once our group determined these underlying issues, we were able to develop solutions. All of our ideas for solutions were either immediately added in the SharePoint shell site active component or included in our upcoming recommendations chapter.

#### **5.4 OSE Training KMS Support Material**

The FDA chose SharePoint as their new solution to sharing knowledge and data; however, because SharePoint training was highly recommended but not mandatory many of the employees never received detailed instruction regarding SharePoint usage and development. As many of the employees are not well informed in SharePoint maintenance and development we designed several in depth, instructional protocols to ensure proper usage, longevity, and further development of the shell site. These instructional protocols included a user, developer, and webmaster manual. The manuals that we developed are instructional walkthroughs of how to navigate through the site and use the available tools and features. The manuals were written concisely to ensure that users utilize the protocols we set forward. Additionally, the manuals are located directly within the SharePoint site as they are accessible through the “help” button located in the quick launch menu presented on the homepage of the SharePoint site. Each manual is tailored to fit its respective audience.

The User manuals provide detailed screen-shot walkthroughs of navigating through the Training KMS interface elements as well as the functionalities and capabilities of each of the tools that are provided. Each component of the site was clearly defined as well as the differing tools along with their functionality were explained and demonstrated in order to create the most comprehensive and effective protocols. The User manual that we developed is shown in **Appendix E, Section 1**. The second manual we created was the Developer manual (**Appendix**

**E, Section 2)** which is an advanced manual that provides detailed guidelines regarding the implementation of the out of the box software tools, the maintenance of these tools and workflows, and specifics for moving forward in the further development of the site and enhancement of features in the future. The final manual we developed was the Webmaster manual shown in **Appendix E, Section 3** clearly defines the role of an OSE SharePoint Webmaster. In this manual we laid out the responsibilities and permissions of each level of users. This manual depicts the proper use of the site, web parts, and a naming protocol for entering training materials into the site. Through the proper use of this OSE training KMS, training materials can be easily accessed through one centralized training site. Management of this training site is critical for the usage, impact, and longevity of this site.

#### **5.4.1 Key Findings**

Some of the important findings from our case studies were the specific functionalities of some of the tools and features other agencies have developed for their knowledge management systems. Aventis Pharmaceuticals KMS has a specific tool called Kmail which proved to be an integral feature as it provided a way for scientists to contact and connect with each other on their specific expertise. In this way duplicated research was minimized and documents could be easily found and retrieved as scientists were collaborating together and sharing knowledge and data. NASA's Pause and Learn (PaL) had similar features to Aventis Pharmaceuticals as they were also looking for a way to cultivate an environment where scientists would come together and share knowledge. After three failed Mars missions, NASA decided to implement a plan on how to better project management. Their KMS automated the process of sharing knowledge from previous missions as it collected knowledge about the project's entire life cycle. The structured questions after each mission provided question categories such as: What happened?; Why did it happen?; and What did we learn from this?. These categories helped to determine the challenges of the mission and how they could move forward to prevent the same problem in the future. We tried to incorporate these key takeaways into the training KMS that we developed, but some of these features were outside our project's scope; so we included them in our recommendations.

## Chapter 6: Conclusions and Recommendations

Through the social science research methods discussed in Chapter 3 section 3.1, we were able to develop a comprehensive understanding of the needs this Training KMS could address within the OSE. Centralization of training materials and tracking functionality for individual users and supervisors were the most important aspects to consider while developing the OSE Training KMS. Considering the needs of the OSE staff regarding training while creating this KMS ensures the usefulness of the project and the lasting impact it can have. Our team had the unique opportunity of working very closely with the end users of the system that we were creating; therefore, we could tailor it to their specific needs. Often times contractors that are brought in to create similar systems, do not have the access to do the research which we were able to conduct. We were granted the opportunity to closely work and communicate with the stakeholders who enabled us to develop an understanding of the universal challenges and frustrations of the current training systems.

SharePoint used as a training KMS can realistically address OSE training needs while offering a medium for collaboration and teamwork. Through meetings with IT experts, we learned that we would be configuring out-of-the-box SharePoint software features in a way that could address OSE needs without custom code. We avoided custom coding as it is both time consuming, skill intensive, and unreliable. By avoiding coding we saved time and ensured the longevity of the system. The SharePoint platform offered many features that aligned directly with the needs of the OSE. In order to develop a SharePoint platform that would be utilized by the OSE, creativity was needed in order to configure the out-of-the-box features in a way that both met the needs of the OSE needs and remained user-friendly.

The development of the organizational taxonomy was vital to the smart search capabilities of the OSE Training KMS. Currently, the main FDA training systems conduct a basic keyword search for the title and description of courses and rarely return the desired results. The organizational taxonomy is a hierarchal classification system that categorizes entries according to similarities. This structure determines the tags and associated terms for each possible keyword search. With the taxonomy built in to the background of the list structure of the site, several paths lead to similar search results to accommodate user search preferences. The organizational taxonomy is key to meeting the needs of the OSE and minimizing user action and

need for human curation. A comprehensive taxonomy enables smart searching, remedies the efficiencies of the old system, and better serves user needs.

Our research and development of the OSE training KMS encountered several roadblocks. Our consultations with our project liaisons defined the scope of this KMS, which was immediately limited by various factors such as time and limited constraints as we only had seven weeks at the FDA. Recommendations address other roadblocks that we encountered during the research and development process for the taxonomy and active SharePoint shell site. They also speak to aspects of the KMS that are outside the scope of our project but would be valuable additions in the future.

The multitudes of recommendations offered in this chapter are presented in table format beginning on page 232. The table includes the roadblock being addressed, the recommendation for further action, and an explanation of how the recommendation will assist in bridging the gaps in the current training systems. Please see **Appendix D, Table 1**, for the complete catalogue of recommendations.

Before presenting the table of recommendations, we highlighted some key, high-level recommendations for the implementation of our KMS, future standard operating procedures, and revisions to current practices. Many of the challenges that these recommendations address were identified in our gap analysis, seen in Chapter 4, section 3.

While developing the taxonomy, we discovered large gaps in staff understanding regarding which training was required or necessary for their job. At an agency level, FDA requires certain training, for example, more training is required for supervisors and contracting officer representatives (CORs). Within each office, each role and staff needs some level of specialized training. There are no concrete requirements for staff-specific or role-specific training. CORs have a list of the amount of credit hours needed in each topic of training; however, there is no list of courses that meet those requirements. ***We recommend that the definition of staff-specific and role-specific training begin within the OSE.*** Ensuring that an entire staff comes to the table with standardized knowledge can increase efficiency by making clear what everyone should know and also eliminating extraneous explanations to get everyone up to speed during meetings. Similarly, role-standardized training guarantees that all members of

a project team share parallel background knowledge and can increase project quality and efficiency. Staff turnover is common within the FDA; so these defined training tracks can help new members assimilate and begin producing meaningful work sooner.

Transfers and additions to staffs across the FDA are very common. Maintenance of staff lists becomes even more important with the recent emphasis on 100% compliance with FDA mandatory training. Valuable time is wasted tracking down staff members who may have left the office, or not joined the office yet. ***A standard operating procedure for the maintenance of staff lists on a quarterly, biannual, or annual basis should be developed and assigned to someone to avoid this inefficiency in the future. This procedure should also update FDA's internal systems.***

A large knowledge gap regarding SharePoint exists within the FDA. Some leaders in the office rely on SharePoint to complete their daily duties, while only 10% of the total FDA has attended training. ***We recommend that the OSE require the entire office to complete SharePoint training.*** Requiring that all the OSE staff take the SharePoint training is key to the success of the SharePoint Training KMS. Proper knowledge of SharePoint use and navigation will ensure that the newly developed training KMS is utilized and beneficial.

A challenge we faced during creating the SharePoint KMS was that LMS is a closed system and does not allow sharing of information with other networks and sites. In order to centralize training, courses from LMS must be included. Links to LMS are currently a part of the KMS; however, they must be manually input by the webmaster. ***Our recommendation in order to overcome this technical boundary is to develop a web platform for users that call pull information from training systems.*** Web platforms are frequently used within SharePoint in order to pull information from existing sites which will enhance data binding and dynamic theming of the training KMS. Web platforms can pull content as well as organizational structure from LMS and link it to the SharePoint user's profile. These landing pages can be given different levels of permissions. When the user would like to access a LMS training course they will be able to directly access the course through the SharePoint site as the Web platform will pull the content course data from LMS. If a web platform cannot be implemented, Business Connectivity Service will integrate the LMS external data as if it is internal data within SharePoint, thus allowing the LMS data to be edited by Microsoft tools.

Finally, during our efforts to link LMS with the OSE Training KMS, we discovered that contractors do not have access to LMS or any other internal FDA data system. Since we were technically classified as contractors, we did not have access to LMS despite the fundamental challenge of our project being centralization of all training sources. It is not uncommon for contracting firms to be hired to create systems similar to ours. It seems to be a fundamental flaw that large amounts of money are spent contracting the creation of these systems, when the product is incomplete due to inability to link to internal FDA systems. ***A recommendation to remedy this challenge is the creation of a contractor view of internal systems where any sensitive or confidential information is hidden.*** With restricted access, contractors could develop more impactful systems, as they would be able to investigate the systems that the new system would link with.

Once the shell site for the OSE Training KMS is populated with training courses and user groups, the OSE will have an impactful solution to a difficult challenge. Training activities will be centralized and easily tracked by supervisors. This system can serve as an example of a creative knowledge management through SharePoint and a model for other offices within the FDA. The impact of this knowledge management system is greater than that of an IT database as it is not just a static site populated with training materials, but it serves the needs of the Office of Surveillance and Epidemiology and creates a system that has the potential to communicate with existing systems. This will increase the efficiency of office training processes exponentially and allow the technical experts to focus on their mission in protecting the American patient.

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## Appendix A

### Glossary

1906 Food and Drug Act- Act passed by Congress creating the FDA, and allowing for its first regulatory power: prevention of interstate commerce of misbranded food and drug items.

Adobe Connect: Adobe Connect is a software program that can be used to create online curriculums.

Adverse Event (ADE) Report: Report filed when a patient experiences harmful health episodes while on a new drug. This report simply notes the reaction and drugs present in the patient as well as medical history. The report does not comment on causality.

After Action Reviews (AAR): The U.S. Army developed a knowledge management system called AAR in order to develop a highly modular and adaptable system to facilitate knowledge flow between all army units.

American Public Health Association (APHA): The APHA is a diverse professional society which aims to bring public health awareness through communication.

Aventis Pharmaceuticals: This is a leading pharmaceutical firm located in Strasbourg, France that developed a knowledge management system to connect scientists from different divisions to collaborate and research together.

Center for Drug Evaluation and Research (CDER): Larger unit of the FDA to which the OSE belongs. This office is responsible for regulating all over-the-counter and prescription drugs. This large center is broken down into 11 offices and 1 division.

Centers for Disease Control and Prevention (CDC): The CDC is a US federal agency with a mission to improve public health.

Coding analysis: A type of statistical analysis to condense extensive data into smaller analyzable units.

Content analysis: A systematic method of organizing data into content categories.

Drug Information Association (DIA): The DIA is a professional organization that aims to develop healthcare technologies and innovation.

eRoom: The EMC Corporation developed this collaborative software program in order to provide an easy to store data management system.

**External Societies:** Professional societies and organizations that provide continuing education credit in order for individuals to maintain licensure.

**Health and Resource Center:** This healthcare journal database was created by Gale to provide students and health care professionals with medical journals and articles.

**Index Sheets:** An alphabetical list that includes topics, major themes, dates etc. to provide organization in a filing system.

**Individual Development Plan (IDP):** The IDP is a document that is used as a tool for employees in order to document with their supervisors a plan for their career goals.

**Interactive Qualifying Project (IQP):** IQP is usually undertaken during a WPI student's junior year and this project aims to connect science and technology with social issues and human needs. This type of project often involves working with a local organization to conduct applied research and use of social science methods to either develop a prototype or provide a recommendation to a problem.

**Intermediate Office (IO):** The IO is the support staff within the OSE office of the CDER division.

**International Society for Pharmaceutical Engineering: (ISPE)** is an international professional society dedicated to promoting public health through scientific education.

**Just-in-time training:** A concept method for providing knowledge and skills for immediate action.

**Knowledge Management System (KMS):** A KMS is generally an IT based system that provides a multi-disciplined approach in supporting, developing, sharing, and storing information for an organization.

**Knowledge Management:** a dynamic system of organization for the user community to access and share information in the most simplistic and effective way. It provides automated tools to minimize efforts for both the user and curator.

**Learning Management System (LMS):** LMS is a software package that is designed to provide, manage, and deliver electronic education materials to users.

**List Item:** A single entry in a SharePoint list.

**List:** Lists make the foundation of a SharePoint site. They contain items that are located and displayed on the site.

MEDLINE: Medical Literature Analysis and Retrieval System Online is a database dedicated to life sciences as well as biomedical information. It includes information from academic journals as well as from a multitude of differing health care fields.

Metadata: Data used to describe data. Metadata allows for better searching and organization of data

National Library of Medicine (NLM): The United States National Library of Medicine is part of the National Institutes of Health and it is the world's largest medical library.

Office of Surveillance and Epidemiology (OSE): Office within the FDA that uses AE and ADR reports in order to identify drug safety concerns and recommend further actions regarding consumer safety.

Organizational taxonomy: a method of hierarchal categorization of information (in this case training courses) to provide a search structure, determining metadata and tagging for a particular entry.

Out-of-the-box (OOTB): Free tools and features provided to develop SharePoint. For the purposes of our project, we consider SharePoint Designer and Microsoft InfoPath Designer to also be out-of-the-box, because no code was written.

Over-the-counter (OTC) drug: A medicinal product available to consumers without a prescription. These products include products ranging from cold remedies to fluoride toothpaste.

Pause and Learn (PaL): NASA developed a knowledge management system called (PaL) in order to automate the process of sharing knowledge between project teams.

Permission Groups: A collection of users who share certain permission for a SharePoint site

Permission Level: A set of permissions that can be given to users or user groups

Permissions: Rules that determine a user's ability to perform actions in SharePoint

Post-market analysis: Monitoring of a drug after it has completed the approval process and is released to the market for consumer use.

PubMed: The National Center for Biotechnology Information database system that comprises more than 24 million citations from MEDLINE as well as other life science journals and articles. These citations provide links to full document access.

SF-182: The form that needs to be completed in order to request FDA funding for training

SharePoint Designer: A free tool used for more advanced development and configuration of a SharePoint site

SharePoint: Microsoft application that provides tools for file sharing and file management as well as integration with other Microsoft applications such as Word, Excel, PowerPoint, and Outlook

Sixteenth World Health Resolution: This resolution was developed to provide criteria for determining the need for drug control.

Title 38 and Title 42: Recruited high level physicians and public health and welfare workers are provided with a mechanism to compensate them at levels comparable to private sectors. Employees hired under these titles must maintain an active licensure by completing yearly continuing education credit, which is monitored by the board of their particular field.

US Health and Human Services (HHS): The HHS is a federal government agency that is responsible for protecting the health of Americans through human services.

View: Settings that determine which list items are displayed and accessible from a list

Vigibase: The World Health Organization's pharmacovigilance database system, which has a hierarchical taxonomy in order to provide efficient data analysis and retrieval. This database system incorporates the pharmacovigilance database systems of over 80 participating countries.

Web Part: A web page element that can be customized and included in a SharePoint page.

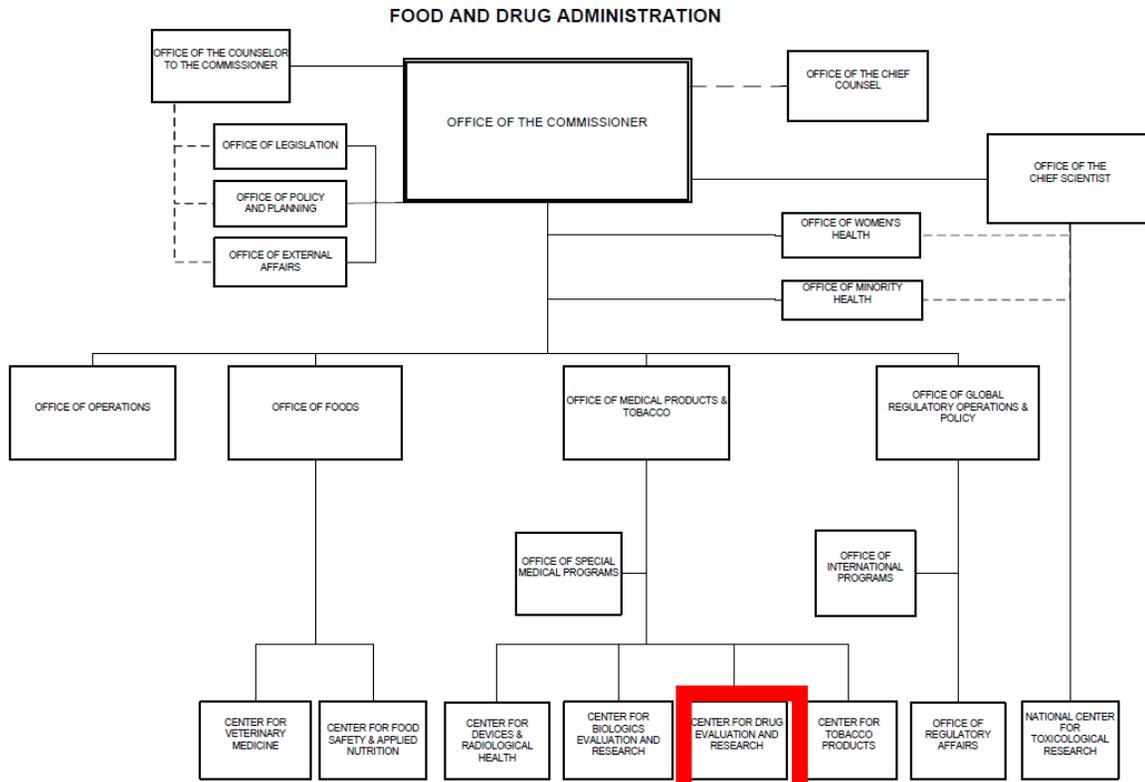
Workflow: An XML file that establishes a logical sequence of steps to accomplish a goal.

Workflow: Logical statements and actions that automate processes in SharePoint

World Health Organization (WHO): A United Nations agency that was established in 1948 in order to coordinate international health activities to help governments prevent and control communicable diseases through various technical programs and projects as well as improve upon health services

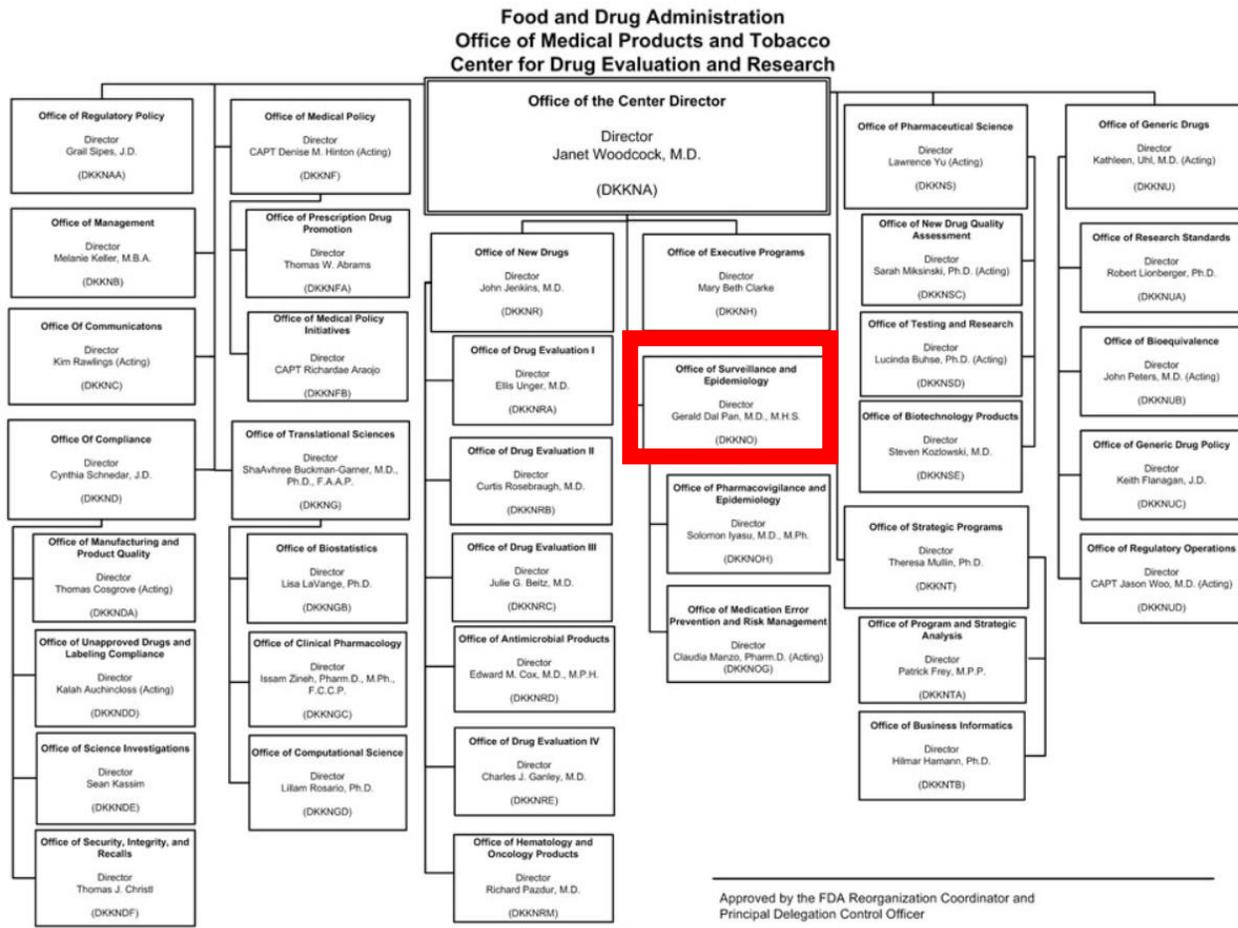
# Appendix B

Staff Manual Guide 1110.1  
Organizations and Functions  
Effective Date: July 26, 2011



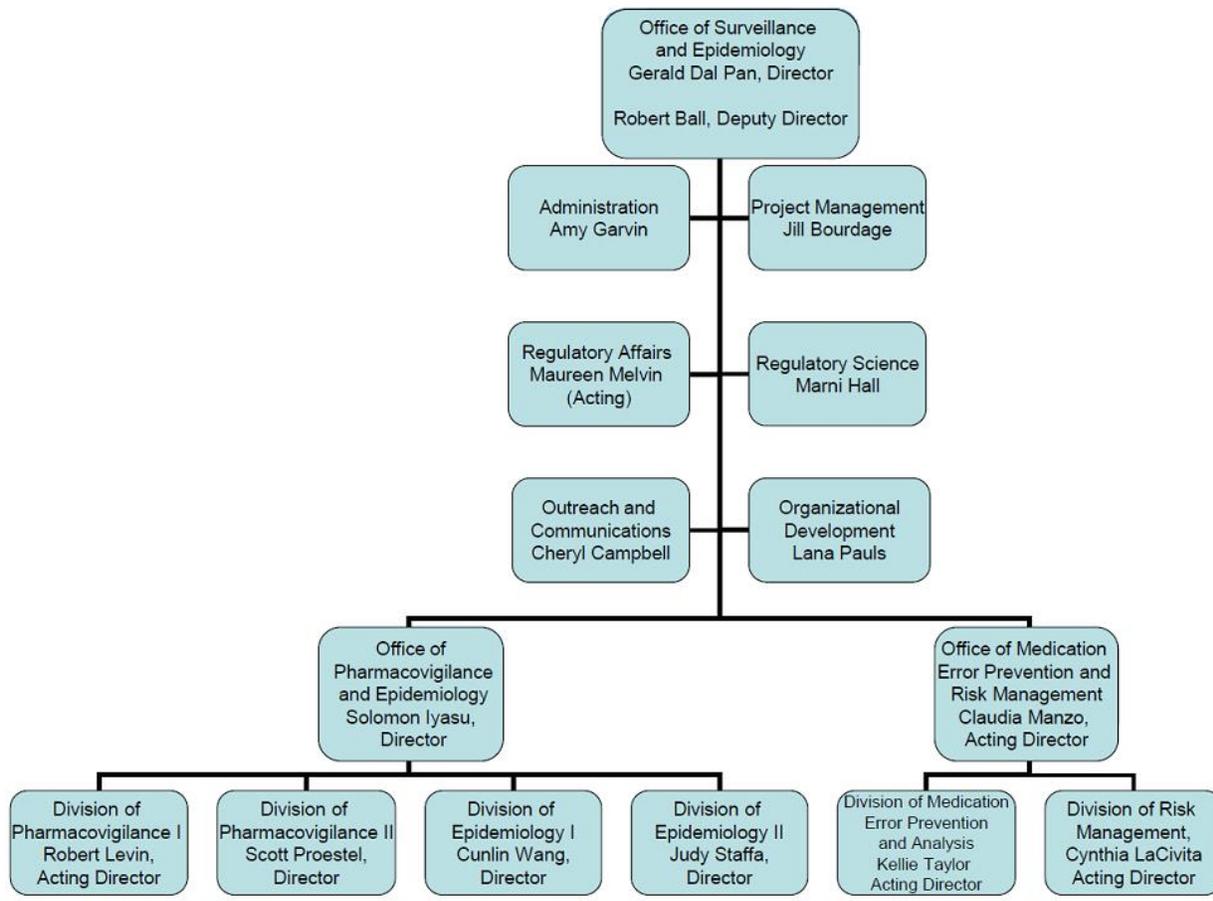
**Figure 2.1 United States Food and Drug Administration Organizational Chart**

In **Figure 2.1**, the structure of the FDA is shown graphically. The Office of Surveillance and Epidemiology is a part of the Center for Drug Evaluation and Research (CDER). CDER is emphasized by the red rectangle.



**Figure 2.2 FDA Center for Drug Evaluation and Research Organizational Chart**

Shown in **Figure 2.2**, the structure of the Center for Drug Evaluation and Research (CDER) is shown visually. The red rectangle denotes the Office of Surveillance and Epidemiology.



**Figure 2.3 FDA Office of Surveillance and Epidemiology Organizational Chart**

The structure of the Office of Surveillance and Epidemiology (OSE) is shown above in **Figure 2.3**. This graphic also include the director of each division or office within OSE.

The three graphics show how complex the organization of the FDA is. We are working with the OSE, but that is only a small of a large regulatory agency. Employees in the OSE make up a little more than 2% of the entire Food and Drug Administration.

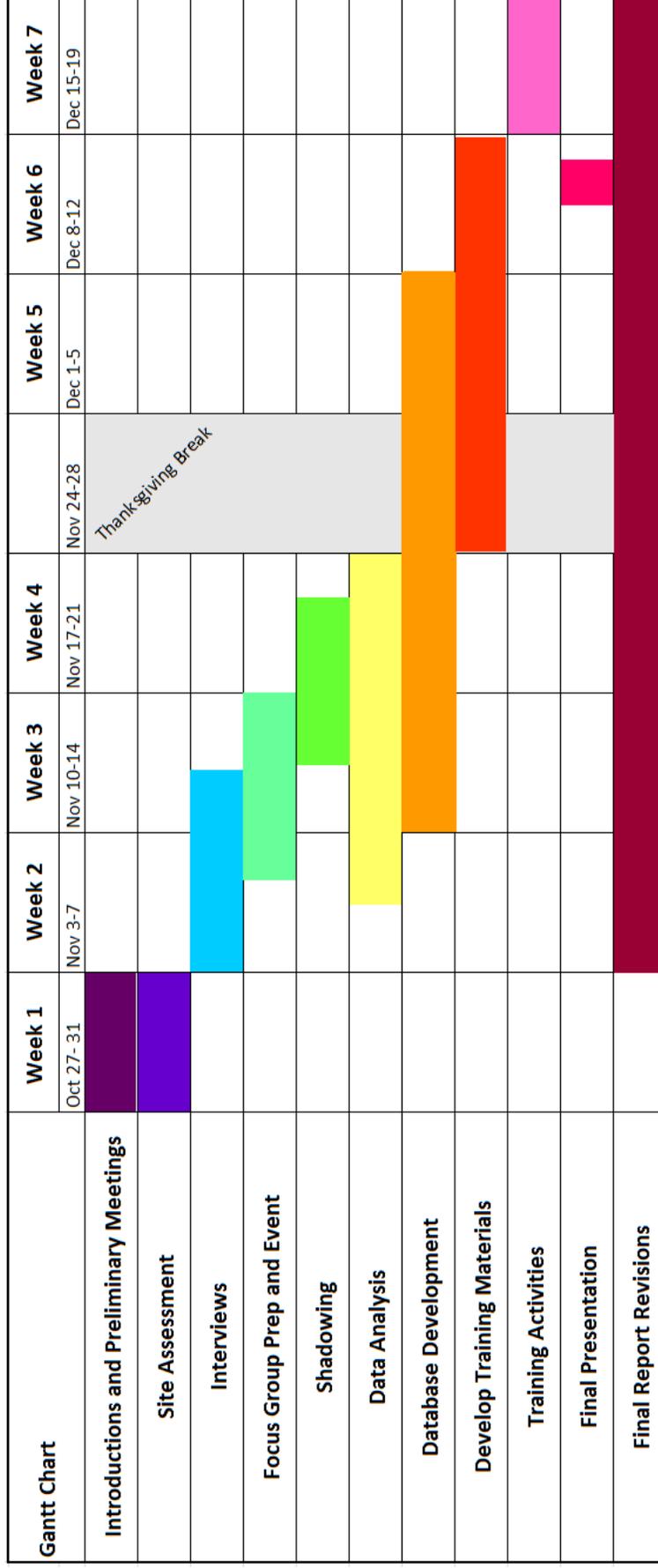
## Appendix C

**Table 3.1 Interview Questions**

<b>General</b>
Officially, what is your role in the OSE and what does it entail?
Please identify challenges regarding OSE training (structure, offerings, etc.) that this KMS could realistically address.
Currently, how do you find out about course offerings?
Do you individually search for training materials? If so, where?
Where are some key places that you search for training materials?
How do you personally store your certificates and proof of completion?
How do prefer to receive reminders and alerts about due dates and upcoming courses?
When you hear the phrase “Required Training” what immediately comes to mind?
When are the required training deadlines calendar-wise? (Ex. end of fiscal year, end of calendar year etc.)
Do you have an individual plan of training you would like to take in the long run according to your needs as part of the OSE and greater career goals?
If so, how did you develop it and what resources did you consult?
In what instances would an individual progress tracking feature be useful?
Please describe a “pain point” with the training system as it stands now.
<b>Supervisory</b>
What are your reporting requirements regarding training?
In what instances would a staff progress tracking feature be useful?
Currently, how would you go about checking which staff members have completed specific training?
Can you speak to your experience managing the recent Records Management training?
Do you have lists of the different types of staffs (Ex. Permanent, contractor, etc.)? How are these lists maintained?
How do you advise supervisors to ensure their staff has completed necessary training?

<b>Additional Needs</b>
Can you speak to the training needs of a COR?
Can you speak specifically about training to maintain your licensure? How do you find it? What is the time frame? Etc.
Can you please discuss the types of training that counts as supervisory training? COR training?
Can you speak specifically about training requirements for contractors?
<b>Organizational Options</b>
Currently how do you search for training materials?
“Training according to role” is a topic that we have heard a lot. In order to organize offerings this way we need to first identify main roles within the office. Can you identify the main roles in the office?
<b>SharePoint Knowledge</b>
Have you taken the SharePoint training provided by the office?
How often do you use the current SharePoint sites that are active throughout the FDA?
Are there any particular features that you want to be part of this KMS?
Have you ever/ do you currently act as admin for any SharePoint sites?
How should we structure our recommendations for those who will continue this project after we leave? What should we be sure to include?
<b>Scope of KMS</b>
In your own words, what do you think is the purpose of knowledge management?
How does this view of knowledge management fit into the scope of this project?
Based on that definition, how can knowledge management best practices inform out project?
What do you see as the reasonable outcomes of this project?
Do you have any suggestions for our organizational taxonomy based on your own experiences as an end user (or supervisor)?
Please discuss the possible impact of this KMS for the OSE and beyond.

**Table 3.1** Lists the questions asked during the 11 expert interviews. Questions were asked as they were applicable to the subject, not all subjects were asked all the listed questions.



**Figure 3.1** Shows the timeline for the on-site portion of our IQP.

## Appendix D

**Table 4.1: Table of Common Trends Resulting from Subject’s Responses to Current OSE Challenges**

<b>Question: Current OSE Challenges</b>	<b>Subject’s Response</b>
Difficulty in locating training	Subject C: Burden in locating training Subject D: Could not find training course location Subject E: Difficult to find training links Subject F: Too many places to find training
No way to track completed training courses, certificates of completion, or credits	Subject B: Can’t track training credits Subject C: Need tracking to prove training completion Subject G: Unclear of when to complete training Subject H: To keep certification need to track credits Subject I: No way to track completed training courses Subject J: No way to track credits
Lack of funding	Subject A: Not enough money for training Subject E: Some courses are good to take but cost too much Subject J: Cost a lot of money for some training courses
Not enough time to do training	Subject A: No time to check all the places for training Subject B: Wasted time searching for training Subject D: No time to search for training Subject F: No time in schedule for training
No centralization of all training materials	Subject A: Too many choices of places to find training Subject C: One stop database Subject F: Too many places to search for training Subject G: No centralization of training courses
Lack an updated staff list	Subject G: Lacking an updated employee list Subject H: List of employees not up to date
Lack of awareness on which training courses to take and which ones count as credit.	Subject C: Where is the training located? Subject E: People don’t know how to use the current site Subject G: Unclear of what training to take Subject K: What courses would a new employee take?

**Table 4.1** shows the common trends that resulted from the subject’s responses to the question: “Please identify challenges regarding current OSE training.” The left hand column is the common trends in the responses and the right hand column shows a brief summary of the subject’s actual response. Color-coding the subject’s responses provided for a quick and efficient way to distinguish each subject’s response. From the data table of main themes we quantitatively analyzed the data by developing pie charts, which presented the percentages of common trends.

## LMS Search Analysis

**Table 4.2: Color Key to LMS Search Analysis**

Search Term	Color
Applied skills	Gray
Communication	Magenta
Conflict	Light Blue
Drug Law	Pink
Individual Awareness	Purple
Individual Awareness (exact)	Dark Blue
Language	Tan
Leadership	Green
Negotiation	Lavender
Policy	Salmon
Program Basics	Scarlet
Supervisor	Pale Pink
Team building	Turquoise
Team Building (exact)	Blue
Team work	Pale Yellow
Team work (exact)	Light Green
Teamwork	Dark Purple
Trust	Red
Writing	Bright Yellow

**Table 4.2** Each search term was given a specific color. Once all the course information was entered, the spreadsheet was then sorted by primary category. The colors provided a quick visual indication of which search the course came from.

**Table 4.3: Abbreviated LMS Analysis Spreadsheet**

<b>SEARCH TERM</b>	<b>SOURCE OF TRAINING</b>	<b>TITLE</b>	<b>PRIMARY CATEGORY</b>
applied skills	Online	Using Strategic Thinking Skills	Applied Skills
applied skills	FDAEEO	Interpersonal Skills for Managers and Supervisors	Applied Skills
applied skills	FDACDER	Presentation Skills: Speaking to Inform, Persuade & Managing Special Challenges	Applied Skills
applied skills	FDACDER	Presentation Skills	Applied Skills
applied skills	FDACDEROND	Intermediate Presentation Skills	Applied Skills
applied skills	FDACDER	Facilitation Skills	Applied Skills
applied skills	FDACDEROND	Interview Skills	Applied Skills
applied skills	Unclear	Basic Mediation Skills	Applied Skills
applied skills	FDACDER	Presentation Skills: Speaking to Inform	Applied Skills
applied skills	Online	Listening Essentials: Improving Your Listening Skills	Applied Skills
applied skills	Online	Critical Thinking Essentials: Applying Critical Thinking Skills	Applied Skills
applied skills	FDACDER	Negotiation Skills	Applied Skills
applied skills	FDACDEROND	Interviewing Tips for Your Next Position	Applied Skills
applied skills	Online	Basic Presentation Skills: Planning a Presentation	Applied Skills
applied skills	Online	Basic Presentation Skills: Creating a Presentation	Applied Skills
applied skills	Online	Basic Presentation Skills: Delivering a Presentation	Applied Skills
Conflict	FDAEEO	Interpersonal Skill Development for Employees	Applied Skills
Conflict	Online	Challenges of Facilitating	Applied Skills
individual awareness	Online	Fundamentals of Organizational behavior for the Individual	Applied Skills
individual	FDACDEROND	Confident Communicator/ Confidence, Self	Applied Skills

awareness		Esteem, and self-awareness	
individual awareness	Online	HHS Disability Cultural Awareness Training	Applied Skills
individual awareness	Online	Individual Behavior: Critical Thinking and Learning	Applied Skills
individual awareness	Online	Developing Strategic Peer Relationships in Your Organization	Applied Skills
Leadership	FDACDER	Situational Leadership	Applied Skills
program basics	Online	implementing and Assessing a Succession Planning Program	Applied Skills
program basics	Online	Essential mentoring Techniques: Evaluating and Ending Mentoring	Applied Skills
program basics	Online	HHS Mentoring Program Orientation	Applied Skills
program basics	Online	Essential Mentoring Techniques: Designing and Initiating Mentoring Programs	Applied Skills
team building	Online	Being an Effective Team Members	Applied Skills
team work	Online	Being an Effective Team Members	Applied Skills
team work	Online	Personal Productivity Improvement: Managing Your Workplace	Applied Skills
Trust	Online	Decision Making: Making Tough Decisions	Applied Skills
Trust	Online	Administrative Professionals: Interacting with Others	Applied Skills
Trust	Online	Forming Peer Relationships and Alliances at Work	Applied Skills
Trust	Online	Using Business Etiquette to Build Professional Relationships	Applied Skills
Writing	FDACBER	Clear and Concise Email and Business Writing	Applied Skills
Writing	FDACDER	Successful Meetings and Minutes	Applied Skills
applied skills	Online	Communication Skills	Communication
applied skills	FDAOC	Communicating Science Workshop	Communication
applied skills	Online	Essential Skills for Professional Telephone Calls	Communication

applied skills	Online	Communication Skills and Project Management	Communication
Communication	Online	The Internet, Social Media, and Electronic Communication	Communication
Communication	Online	Effective Communication	Communication
Communication	Online	4G Communication Systems	Communication
Communication	Online	Communications and Feedback	Communication
Communication	Online	Communication Skills	Communication
Communication	Online	Culture and Its Effects on Communication	Communication
Communication	Online	Interpersonal Communication: Communicating with Confidence	Communication
Communication	Online	Interpersonal Communication: Targeting Your Message	Communication
Communication	Online	Interpersonal Communication: Communicating Assertively	Communication
Communication	Online	Crisis and Risk Communication	Communication
Communication	Online	Communication Skills and Project Management	Communication
Communication	Online	Telecommuting Basics: A Communication Strategies for the Remote Employee	Communication
Communication	Online	Interpersonal Communication: Listening Essentials	Communication
Communication	Online	Understanding the Risk of Using Internet Media and Electronic Communications	Communication
Communication	Online	Communications and Security in Windows Server 2008	Communication
Communication	FDACBER	Communicating with Clarity	Communication
Communication	FDACDEROND	How to Write a Darn Good E-mail	Communication
Language	FDACDEROND	Body Language	Communication
Policy	Online	The Internet, Social Media, and Electronic Communication	Communication
team building	Online	Effective Team Communication	Communication
Trust	Online	Interpersonal Communication:	Communication

		Communicating with Confidence	
Trust	FDACDEROTS	Speak so Others will Listen	Communication
Trust	Online	Strategies for Communicating with Tact and Diplomacy	Communication
Trust	Online	Telecommuting Basics: A Communication Strategies for the Remote Employee	Communication
Writing	Online	Communication Skills	Communication
Writing	Online	Communicating Across Cultures	Communication
Conflict	Online	Global Conflicts of Interest	Conflict
Conflict	FDAEEO	Effective Communication and Managing Workplace Conflict	Conflict
Conflict	Online	Workplace Conflict: Recognizing and Responding to Conflict	Conflict
Conflict	FDACDEROTS	Creative Conflict Management and Resolution	Conflict
Conflict	FDACDER	Successful Conflict Resolution	Conflict
Trust	Online	Workplace Conflict: Strategies for Resolving Conflict	Conflict
Trust	FDACDEROTS	Constructive Conflict Management in the Workplace	Conflict
team building	Online	Managing Software Project Outsourcing: Working with the Outsourced Team	COR
team work	Online	Managing Software Project Outsourcing: Working with the Outsourced Team	COR
applied skills	Online	Individual Behavior: Critical Thinking and Learning	Individual Awareness
applied skills	Online	Individual Behavior	Individual Awareness
individual awareness	Online	Individual Behavior	Individual Awareness
team building	Online	Problem Solving: Determining and Building Your Strengths	Individual Awareness
Writing	FDACDEROND	Personal Accountability	Individual

			Awareness
applied skills	FDACDEROTS	Speaking for Success: American English Pronunciation & Public Speaking Skills	Language
Communication	FDACDEROTS	Effective Communication Skills for Non-Native Speakers of English	Language
Language	FDACDEROTS	Enunciation	Language
Writing	FDACDER	English as a Second Language	Language
Drug Law	FDACDER	Basic Drug Law (15 Hour- 5 Sessions)	Law & Policy
Drug Law	FDACDER	Basic Drug Law (2 Day)	Law & Policy
Drug Law	FDACDER	NDA Regulations and Policies	Law & Policy
Drug Law	Online	Business Law and Ethics	Law & Policy
Drug Law	Online	HHS Appropriations Law	Law & Policy
Drug Law	FDACDER	All You Wanted to Know about FDA Employee Rights and Responsibilities	Law & Policy
Drug Law	FDACDER	Administrative Law	Law & Policy
individual awareness	Unclear	Managers and Supervisors Safety Awareness Training (MSSAT)	Law & Policy
program basics	Online	Employee and Labor Relations: Employment Regulations and Organizational Programs	Law & Policy
program basics	FDACDER	All You Wanted to Know about FDA Employee Rights and Responsibilities	Law & Policy
team work	Online	Workforce Planning and Employment: Employment Legislation	Law & Policy
applied skills	Online	Using Facilitation Skills as a Manager	Leadership
applied skills	Online	Managerial Skills and Abilities	Leadership
Communication	FDACDER	Strategic Communication for Manager: Enhancing Two-Way Communication for High Performance	Leadership
Communication	Online	Plan and Manage Project Communications	Leadership
Communication	Online	The Voice of Leadership: Effective Leadership Communication Strategies	Leadership
Communication	Online	Leading Teams: Fostering Effective Communication and Collaboration	Leadership

Communication	FDAEEO	Interpersonal Skills for Managers and Supervisors	Leadership
Communication	FDAEEO	Managing Workplace Conflict	Leadership
Conflict	FDACDER	Leadership Self Deception	Leadership
Conflict	Online	Managing Workforce Generations: Working with a Multigenerational Team	Leadership
Conflict	Online	Leadership: Valuing Diversity and Culture	Leadership
Conflict	Online	Managing Internal Dynamics in a Cross-functional Team	Leadership
Conflict	Online	Leading Teams: Establishing Goals, Roles, and Guidelines	Leadership
Conflict	Online	Leadership Advantage: Leading Effective Meetings 2.0	Leadership
Leadership	Online	Leadership	Leadership
Leadership	Online	Government Leadership Advantage	Leadership
Leadership	Online	The Voice of Leadership: Inspirational Leadership	Leadership
Leadership	Online	The Voice of Leadership: The Power of Leadership Messaging	Leadership
Leadership	Online	Leadership Essentials: Creating Your Own Leadership Development Plan	Leadership
Leadership	Online	The Voice of Leadership: Effective Leadership Communication Strategies	Leadership
Leadership	Online	Plywood Leadership: Lessons on Leadership from a Warrior, Statesman, and Scholar	Leadership
Leadership	Online	Leadership Advantage: Accountability 2.0	Leadership
Leadership	Online	The Voice of Leadership: Self-assessment and Motivation	Leadership
Leadership	Online	Leadership Essentials: Communicating Vision	Leadership
Leadership	Online	Leadership Advantage: Decisiveness 2.0	Leadership
Leadership	Online	Leadership Advantage: Globalization 2.0	Leadership
Leadership	Online	Leadership Advantage: Influence and Persuasion 2.0	Leadership

Leadership	Online	Leadership Advantage: Career Development 2.0	Leadership
Leadership	Online	Leadership Advantage: Ethics, Integrity and Trust 2.0	Leadership
Leadership	Online	Leadership Knowledge Center	Leadership
Leadership	FDACDER	Choosing Leadership	Leadership
Leadership	FDACDER	Leadership Development Program Course	Leadership
Leadership	FDACDER	Leadership Self Deception	Leadership
Leadership	Online	Leadership Essentials: Motivating Employees	Leadership
Leadership	Online	Leadership Essentials: Leading Innovation	Leadership
Leadership	Online	Leadership Essentials: Leading Change	Leadership
Leadership	Online	Diversity: Leadership Virtual Module	Leadership
Leadership	Online	Leadership: Valuing Diversity and Culture	Leadership
Leadership	Online	Leadership Six: Stress Management	Leadership
Leadership	Online	Leadership Advantage: Coaching 2.0	Leadership
Negotiation	Online	Leadership Advantage: Negotiating 2.0	Leadership
Negotiation	Online	Leading Teams: Dealing with Conflict	Leadership
program basics	Online	Strategies for Successful Employee Onboarding: Assessing Program Success	Leadership
program basics	Online	Compensation and Benefits: Managing Policies, Programs and Activities	Leadership
program basics	Online	Introduction to Program Management	Leadership
team building	Online	Leading Teams: Building trust and Commitment	Leadership
team building	Online	Leading Teams: Launching a Successful Team	Leadership
team building	Online	Leading Teams: Developing the Team and its Culture	Leadership
team building	Online	Leading Teams: Managing Virtual Teams	Leadership
team building	Online	Leading Teams: Motivating and Optimizing Performance	Leadership
team building	Online	Leading Teams: Dealing with Conflict	Leadership
team building	Online	Leading Teams: Establishing Goals, Roles,	Leadership

		and Guidelines	
team building	Online	Leading an Agile Team	Leadership
team building	Online	Essential Mentoring Techniques: Building and Maintaining Mentoring Relationships	Leadership
team building	Online	Key Strategies for Managing Cross-Functional Teams	Leadership
team building	Online	Managing Internal Dynamics in a Cross-functional Team	Leadership
team building	Online	Managing Review Teams in DAARTS	Leadership
team building	Online	Managing Essentials: Managing a Diverse Team	Leadership
team building	FDACDEROTS	Conflict and Cooperation: Managing Team Communication	Leadership
team building	Online	Generating Creative and Innovative Ideas: Maximizing Team Creativity	Leadership
team building	Online	Managing Workforce Generations: Working with a Multigenerational Team	Leadership
team building	FDACDEROND	Giving Feedback for Team Leaders and Supervisors	Leadership
team building	Online	Leadership Essentials: Building Your Influence as a Leader	Leadership
team building	Unclear	Effective Feedback for Team Leaders and Supervisors	Leadership
team work	Online	Leading Teams: Developing the Team and its Culture	Leadership
team work	Online	Leading Teams: Managing Virtual Teams	Leadership
team work	Online	Leading Teams: Dealing with Conflict	Leadership
team work	Online	Leading Teams: Building trust and Commitment	Leadership
team work	Online	Leading Teams: Establishing Goals, Roles, and Guidelines	Leadership
team work	Online	Leading Teams: Fostering Effective Communication and Collaboration	Leadership

team work	Online	Leading Teams: Launching a Successful Team	Leadership
team work	Online	Leading Teams: Motivating and Optimizing Performance	Leadership
team work	Online	Managing Workforce Generations: Working with a Multigenerational Team	Leadership
team work	Online	Leading an Agile Team	Leadership
team work	Online	Promoting Respect in the Global Workplace-Manager Edition	Leadership
Teamwork	FDACBER	Leading and Managing Organizational Change	Leadership
Teamwork	Online	Leading Teams: Developing the Team and its Culture	Leadership
Trust	Online	Leadership Advantage: Ethics, Integrity and Trust 2.0	Leadership
Trust	Online	Leading Teams: Building trust and Commitment	Leadership
Trust	FDACDER	Building Trust and Confidence as a Leader	Leadership
Trust	Online	Managing Technical Professionals	Leadership
Trust	Online	Management Essentials: Delegating	Leadership
Trust	Online	Delegation Essentials: An Introduction to Delegating	Leadership
Writing	FDACDER	UnCivil Servant: Holding Employees Accountable for Performance and Conduct	Leadership
Writing	Online	Essentials of Interviewing and Hiring: Preparing to Interview	Leadership
Language	Online	Automating Excel Tasks using Macros	Microsoft
Policy	Online	Microsoft Windows Server 2012- Installing and Configuring: Group Policies	Microsoft
team work	Online	Creating Workbooks, Worksheets, and Data in Excel	Microsoft
team work	Online	Protecting and Sharing Excel 2007 Workbooks	Microsoft

Negotiation	Online	Negotiation Essentials: Persuading	Negotiation
Negotiation	Online	Negotiation Essentials: Communicating	Negotiation
Negotiation	Online	Conducting a Successful Negotiation Simulation	Negotiation
team work	FDACDER	New Reviewers Workshop	Reviewer
Teamwork	FDACDER	New Reviewers Workshop	Reviewer
Writing	FDACDER	New Reviewer Blended Learning Program	Reviewer
team work	Online	Workflows, Collaboration, and Analysis in SharePoint 2013	SharePoint
individual awareness	Online	Union Awareness	Supervisor
Supervisor	Online	Performance Management for Managers and Supervisors	Supervisor
Supervisor	Online	Workplace Harassment for Supervisors and Managers	Supervisor
Supervisor	FDACDER	Potential Supervisors: So You Want to be a Supervisor	Supervisor
Supervisor	unclear	Managers and Supervisors Safety Awareness Training (MSSAT)	Supervisor
Supervisor	unclear	Mandatory EEO Compliance Training for Managers and Supervisors	Supervisor
Supervisor	FDACDEROND	Giving Feedback for Team Leaders and Supervisors	Supervisor
Supervisor	unclear	HHS Supervisory 101 Curriculum	Supervisor
Supervisor	Online	Reviewing Forms as a Supervisor	Supervisor
Supervisor	unclear	HR Practices for Managers and Supervisors	Supervisor
Supervisor	FDACDER	Hiring and Recruiting for Supervisors	Supervisor
Supervisor	FDACDEROND	Career Planning for Supervisors	Supervisor
Supervisor	FDAEEO	Interpersonal Skills for Managers and Supervisors	Supervisor
Supervisor	FDACDER	Managing Change for Managers and Supervisors	Supervisor
Supervisor	Instructor Led	Effective Performance Management: Writing	Supervisor

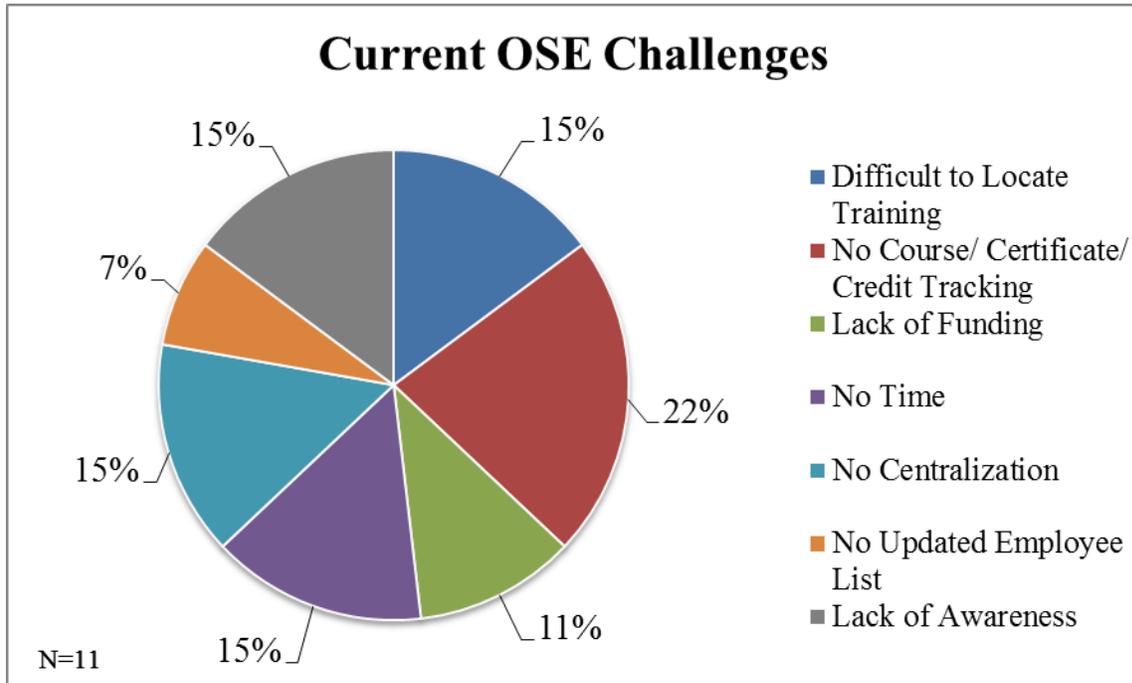
		and Conducting Performance Appraisals	
Communication	Online	Control Project Communications	Team Building
Communication	Online	Effective Team Communication	Team Building
Conflict	Online	Fundamentals of Organizations- Groups	Team Building
Conflict	Online	Group Dynamics Two: Applications	Team Building
Leadership	FDACDER	Stepping Up to Collaborative Leadership	Team Building
team building	Online	Establishing Team Goals and Responsibilities	Team Building
team building	Online	Elements of a Cohesive Team	Team Building
team building	Online	Using Feedback to Improve Team Performance	Team Building
team building	Online	Team Dynamics	Team Building
team building	Online	Cross-functional Team Fundamentals	Team Building
team building	Online	Generating Creative and Innovative Ideas: Maximizing Team Creativity	Team Building
team work	Online	Establishing Team Goals and Responsibilities	Team Building
team work	Online	Elements of a Cohesive Team	Team Building
team work	Online	Effective Team Communication	Team Building
team work	Online	Using Feedback to Improve Team Performance	Team Building
Trust	FDAEEO	Teambuilding: The Five Dysfunctions of a Team Workshop	Team Building
Trust	Online	Elements of a Cohesive Team	Team Building
Language	FDAOES	Writing Regulations & Guidance Using Plain Language	Writing
Language	FDAOES	Topics in Plain Language & Health Literacy	Writing
Language	FDACDEROTS	Language Tune-Up	Writing
Language	FDAOES	Writing for Success using Plain Language	Writing
Language	FDAOES	Foundations of Plain Language	Writing
Language	FDACDER	English as a Second Language	Writing
Language	FDAOES	Elements of Plain Language	Writing
Language	FDAOES	Writing Web Content in Plain Language	Writing
Writing	Online	Writing Under Pressure: The Writing Process	Writing
Writing	Online	Writing Under Pressure: Preparing for	Writing

		Success	
Writing	Online	The Plain Writing Act	Writing
Writing	FDAOES	Writing Regulations & Guidance Using Plain Language	Writing
Writing	Online	Writing for Technical Professionals: Effective Writing Techniques	Writing
Writing	FDACDER	Writing Refresher	Writing
Writing	FDACDEROTS	E-mail Writing	Writing
Writing	FDACDER	Writing for Publication	Writing
Writing	Online	Business Writing: Editing and Proofreading	Writing
Writing	FDACDER	Technical Writing for Reviewers	Writing
Writing	Online	Business Writing: Know Your Readers and Your Purpose	Writing
Writing	FDAOES	Writing Web Content in Plain Language	Writing
Writing	Online	Writing for Technical Professionals: Preparation and Planning	Writing
Writing	FDAOES	Creating Clear Documents: A Toolkit for Clear Drafting	Writing
Writing	Online	Business Grammar: The Mechanics of Writing	Writing
Writing	FDACDEROTS	Effective Writing Skills Workshop	Writing
Writing	FDAOES	Foundations of Plain Language	Writing
Writing	FDACDEROTS	Mistake-Free Letters and Memos	Writing
Writing	FDAOES	Elements of Plain Language	Writing
Writing	Online	Business Grammar: Parts of Speech	Writing
team work (exact)			
team building (exact)			
individual awareness (exact)			

**Table 4.3** is an abbreviated version of the spreadsheet created while analyzing LMS during needs assessment activities. Columns with additional course information have been omitted in the interest of space. The columns here show the search term, course title, and course category. Nineteen searches were performed yielding 2,340 results. 252 courses are included in this table. Each search term along with the OSE applicable courses were entered. Courses were then categorized based on similarities. Sixteen categories were created and later incorporated into the organizational taxonomy. This table is arranged by category and search term within that category to keep as many courses from the same search together within the category. The colors quickly illustrate how various searches return results that belong in the same category. This data confirms the importance of metadata and tagging for effective searching.

## 7 Interview Questions

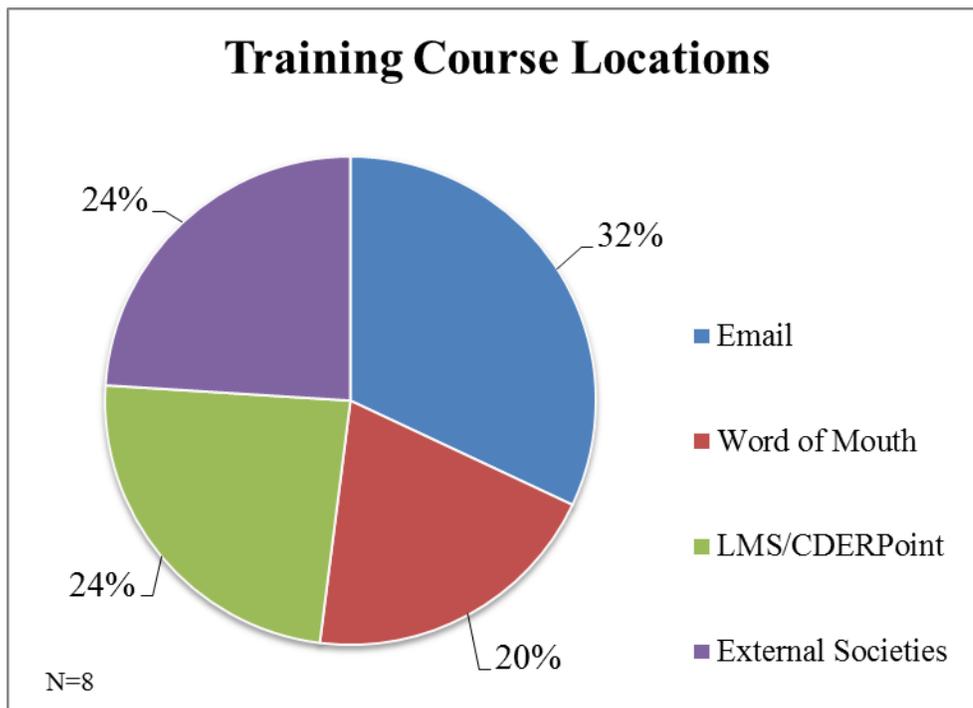
Please identify challenges regarding current OSE training (structure, offerings, etc.) that this KMS could realistically address?



**Figure 4.2: The Current Challenges in the OSE Training System**

**Figure 4.2** shows the percentage of the common themes that were found when subjects were asked to identify current challenges in the OSE training system. The main challenges of the current system that were identified is there is a lack in tracking completed courses and certificates (22%), there is difficulty in locating training courses as there are many places to search for training courses such as email, FDA home page, Monday Memo, LMS etc. (15%), no centralized database to find all training materials (15%), lack of awareness on what training materials to take (15%), and not finding enough time to complete training (15%). Other challenges that were identified was a lack of funding for training (11%) and lastly there is not an updated employee list and with the recent push for 100% compliance it is important to keep the employee list updated. (7%). Employees that are no longer working for the FDA or have moved divisions are showing up on the non-compliant list for mandated FDA courses.

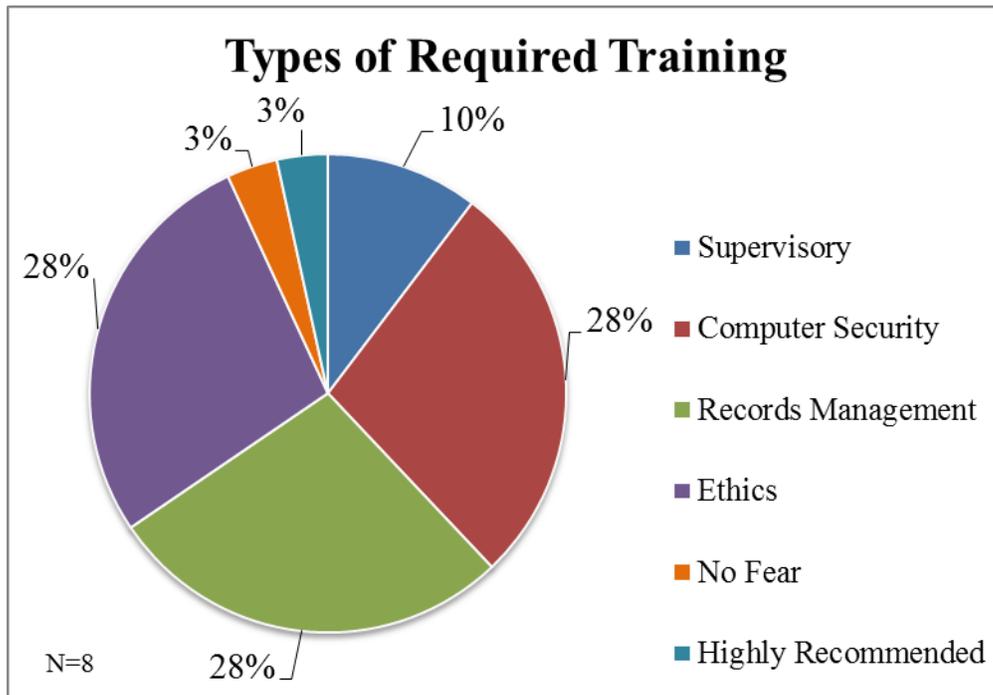
What are some key places that you search for training material?



**Figure 4.3: Current Methods in Searching for Training Courses**

**Figure 4.3** demonstrates the percentage of common trends that were uncovered when subjects were asked where they currently search for training materials. The main locations that were identified to search for training materials is from emails (32%), external societies (24%), and LMS/CDERPoint (24%). Employees identified word of mouth (20%) as another method for discovering training opportunities, but it was not as common as the other ones.

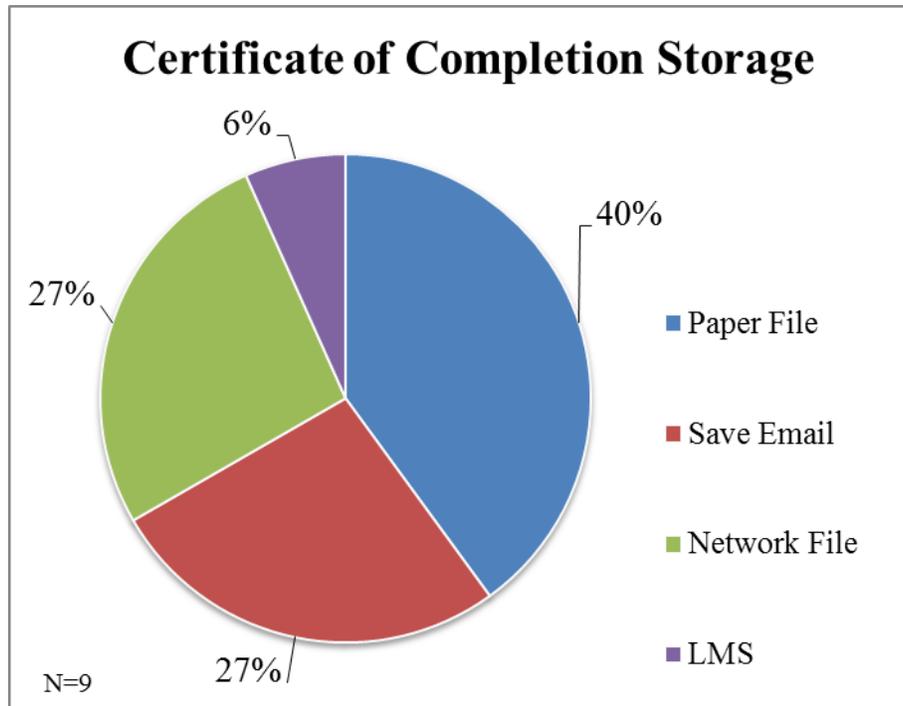
When you hear the phrase “Required Training” what immediately comes to mind?



**Figure 4.4: FDA Mandatory Training Requirements**

From **Figure 4.4**, this graph exhibits the percentage of similar trends that resulted from the subject’s responses to what training courses are FDA wide mandatory and need 100% compliance. The main consensus shows that the FDA wide training materials are “Computer Security” (28%), “Records Management” (28%), and “Ethics” (28%). Other courses that were considered to be required were training for supervisors (10%), highly recommended training that supervisors suggest their staff take (3%), and “No Fear” which is a one time training course that all employees must take when they first arrive at the FDA (3%).

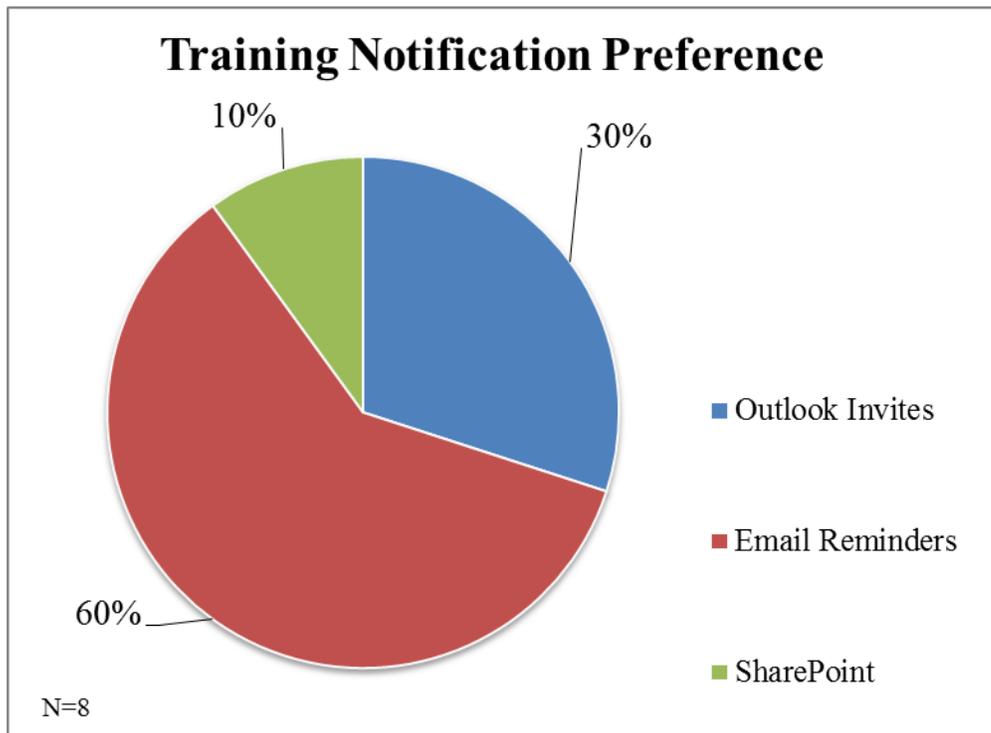
How do you personally store and organize your certificates and proof of completion?



**Figure 4.5: Storage of Certificates of Completion**

**Figure 4.5** is a pie chart which indicates the common themes that resulted from the subject's responses on how they store the certificates of completion they receive after they finish a training course. The most common ways employees store their certificates of completion to prove they took particular training courses is by printing out the certificates and maintain a paper file (40%), emailing themselves the certificate and creating a specialized Outlook folder for them (27%), and saving the PDF files on their desktop (27%). Another way to save the certificates was to load them to the learning portal LMS (6%).

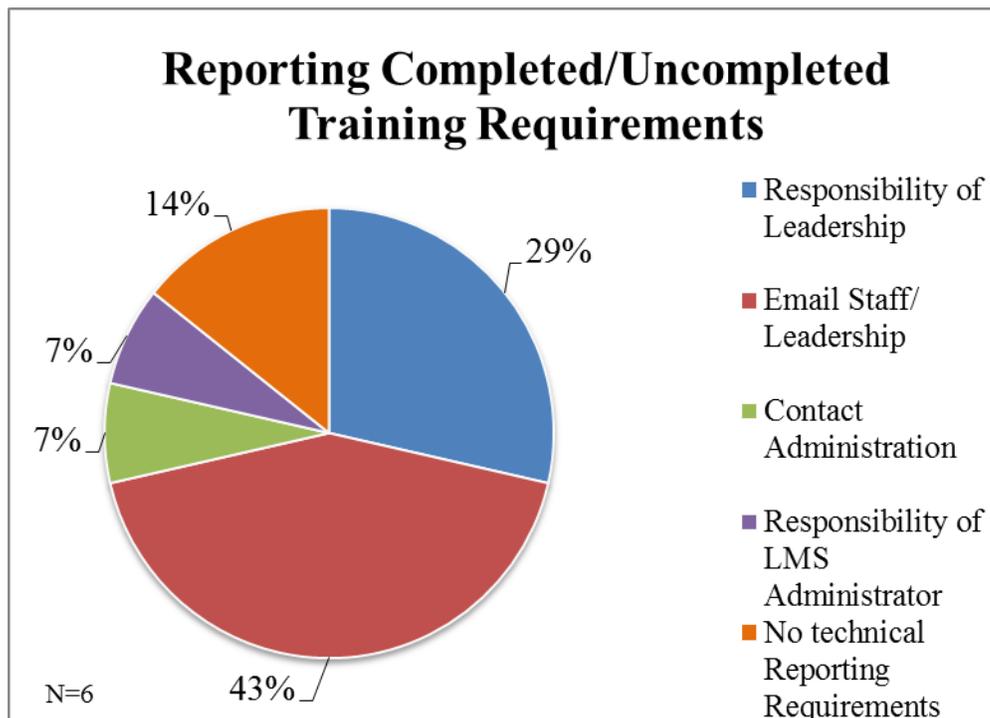
How do you prefer to receive reminders and alerts about due dates and upcoming courses?



**Figure 4.6: Types of Reminder Notifications for Upcoming Training Courses**

Subject's responses to the question on what their preference for receiving notifications showed very similar common trends. **Figure 4.6** illustrates the most common preference and this was to receive email reminders on when to complete upcoming and due training materials (60%). The next two preferences were to receive outlook invites on when training course were due to be complete (30%) and to have the SharePoint training site display upcoming training courses (10%).

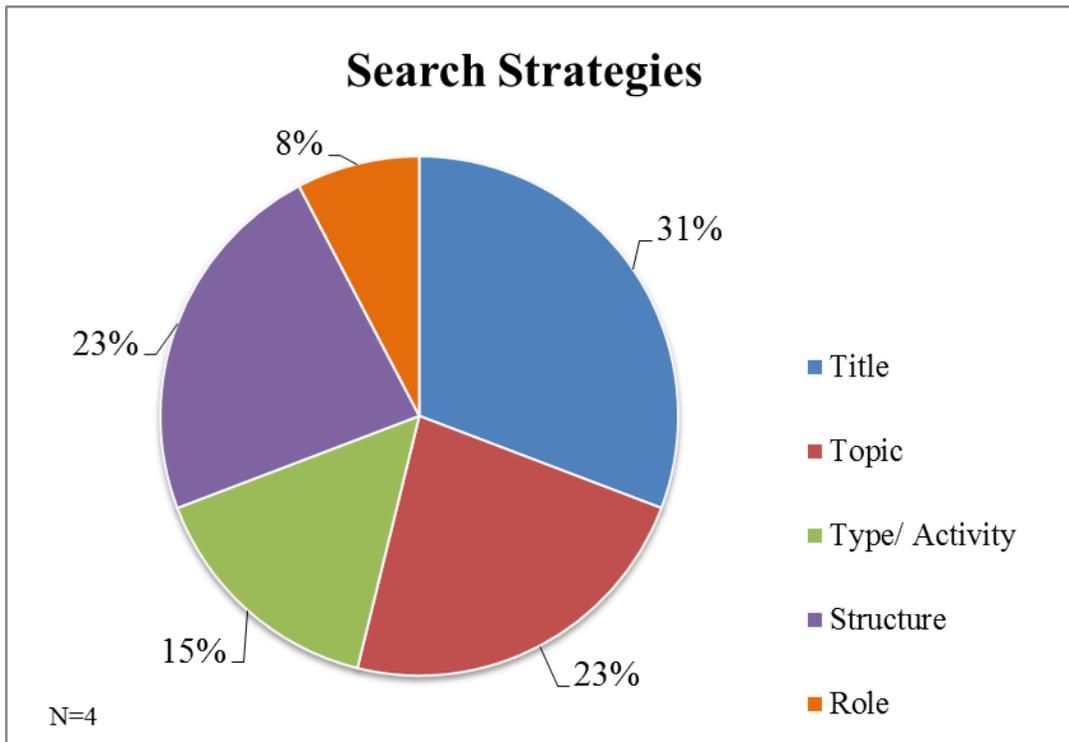
What are your reporting requirements regarding training?



**Figure 4.7: Reporting Methods for Completed/Uncompleted Training Courses**

In Figure 4.7 the common trends in the responses for reporting completed training materials is explained. Most subjects agreed that employees must report completed training courses to their supervisor and supervisors should send email reminders to their staff to complete necessary training courses (43%). Others said those in leadership are responsible for their staff to complete necessary training material (29%), and others said there is no technical reporting requirements for training materials that are completed. A few subjects said it was the responsibility of the LMS Administrator to check and see which employees were compliant with training courses (7%) and others said employees should contact the Administration team when they have completed training (7%).

Currently how do you search for training materials?

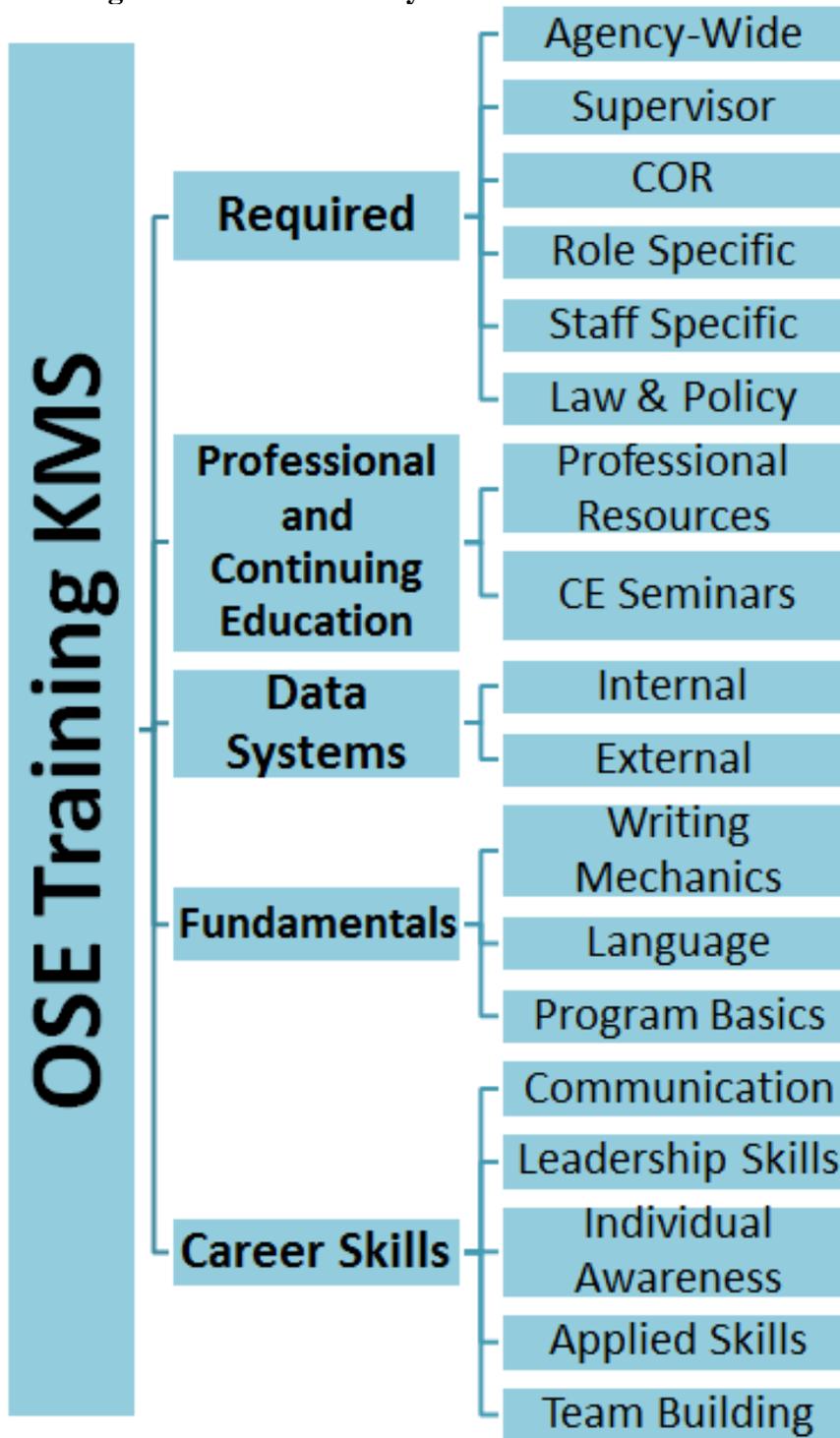


**Figure 4.8: Search Strategies for Locating Training Materials**

The pie chart shown in **Figure 4.8** validates the common themes in search tactics to locate training materials. The main trends in the data showed that searching by title (31%), topic (23%), and structure (23%) were the most effective search strategies to locate training courses. Other search methods were to search for training based on the type or activity (15%) and by role or job title (8%).

**Appendix E**

**Figure 5.1 Organizational Taxonomy**



**Figure 5.1** Shows an abbreviated graphic of the organizational taxonomy.

**Figure 5.2 Required Category**

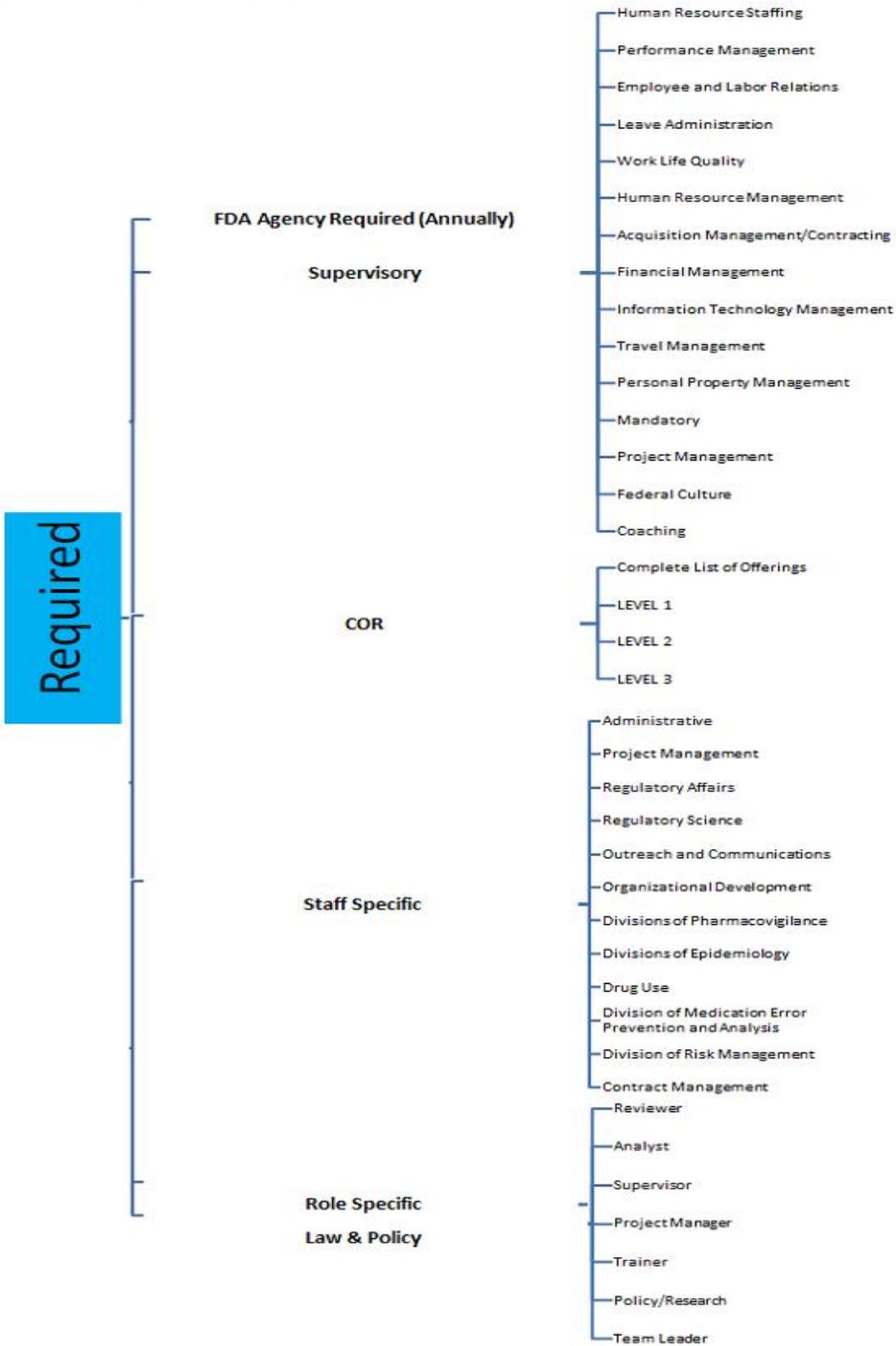


Figure 5.2 Shows the *Required* category in more detail.

Figure 5.3 Professional and Continuing Education and Data Systems Categories

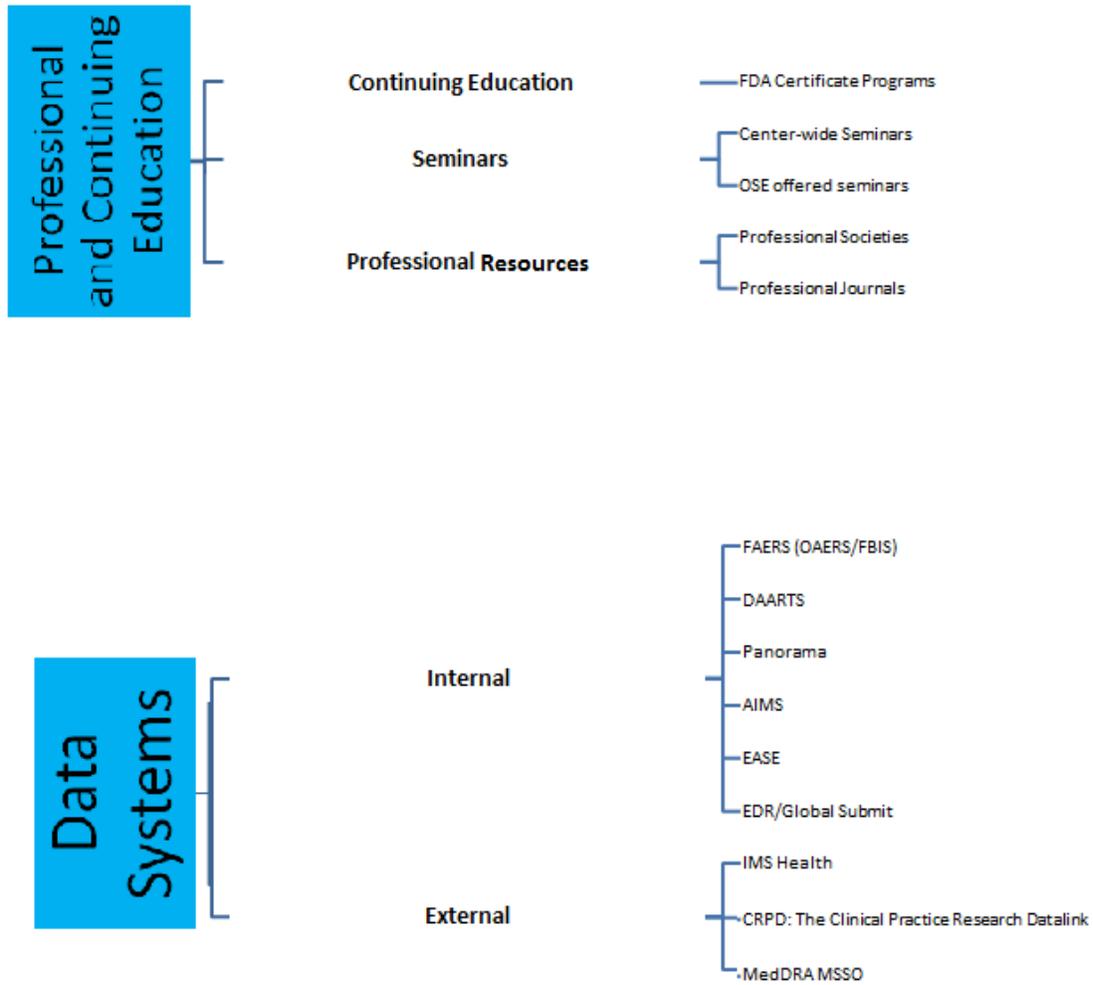
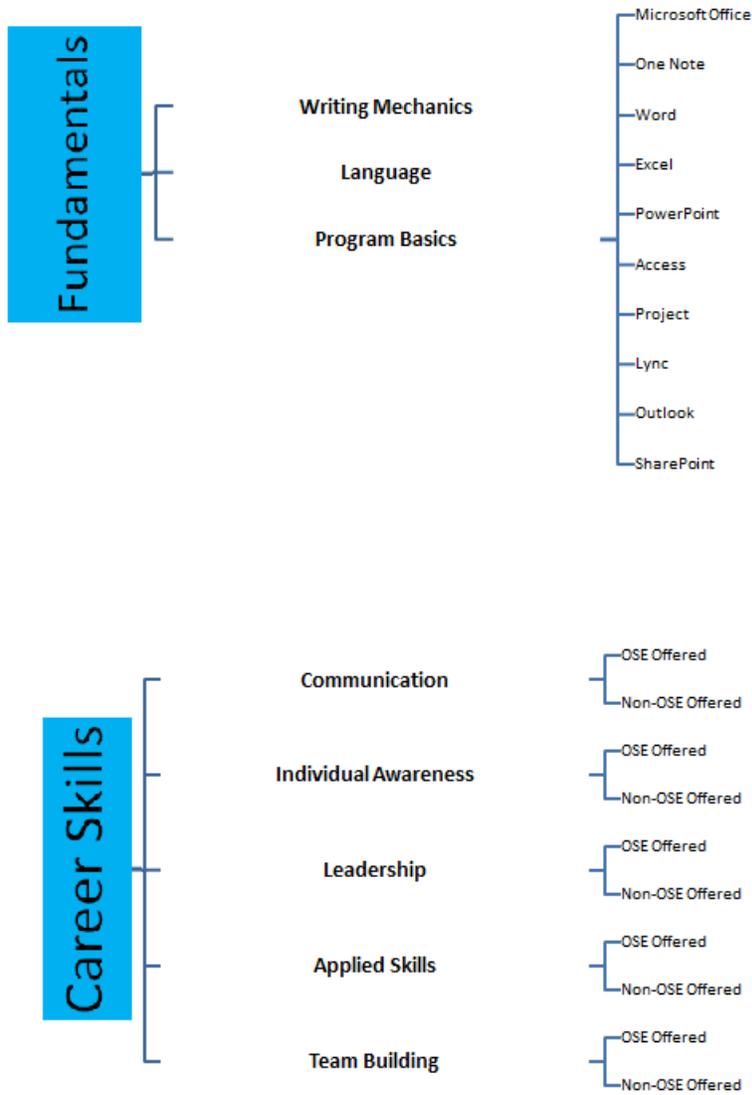


Figure 5.3 Shows the *Professional and Continuing Education* and *Data Systems* categories in more detail.

**Figure 5.4** *Fundamentals and Career Skills Categories*



**Figure 5.4** Shows the *Fundamentals* and *Career Skills* Categories in more detail.

## Table 5.1 Full Taxonomy Including Courses

- Required
  - FDA Agency Required (Annually)
    - Records Management
    - Computer Security
    - Ethics
  - Supervisory
    - Human Resource Staffing
      - Highly Encouraged
        - HHS Supervisor 101: Module 1- Hiring
        - Veteran Employment Training for Federal Hiring Managers
        - Merit System Principles and Prohibited Personnel Practices
      - Elective/Other
        - Equal Employment Opportunity and Discriminatory Practices in Hiring
        - Interviewing and Hiring Practices
        - Interview Architect
        - HR Practices for Managers and Supervisors
        - Hiring and Recruitment for Supervisors
    - Performance Management
      - Highly Encouraged
        - Supervisor 101 Course 2: Performance Management
        - CDER Performance Management
        - Performance Appraisal Essentials: Planning for Appraisals

- Addressing and Resolving Poor Performance
- Elective/Other
  - Performance Management for Managers and Supervisors
- Employee and Labor Relations
  - Highly Encouraged
    - Supervisor 101: course 5- Labor and Employee Relations
    - Employee Relations Overview
    - Labor Relations Overview
  - Elective/Other
    - Documenting Discipline
    - Rightful Employment Termination
    - UnCivil Servant: Holding Employees Accountable for Performance and Conduct
- Leave Administration
  - Highly Encouraged
    - Supervisor 101 Course 3: Leave Administration
    - Leave Administration for Supervisors
  - Elective/Other
    - FMLA Leave and More: An Overview of Legally Protected Leave
- Work Life Quality
  - Highly Encouraged
    - Supervisor 101 Course 4: Quality of Work Life

- Elective/Other
  - Setting up a Remote Office
  - Workplace Safety
  - Telework 101 for Managers
  - Accessibility and Section 508 Awareness
  - Personal Development Curriculum/Dealing with Organizational Change
  - Telecommuting Basics: Communication Strategies for the Remote Employee
  - Telecommuting Basics: Maximizing Productivity as a Remote Employee
  - Balancing your Responsibilities Simulation
  - Optimizing Your Work/Life Balance: Analyzing Your Life Balance
  - Optimizing Your Work/Life Balance: Maintaining Your Life Balance
  - Optimizing Your Work/Life Balance: Taking Control of Your Stress
  
- Human Resource Management
  - Elective/Other
    - Sexual harassment Prevention for Federal Employees
    - Harassment Awareness and Prevention
    - Fair Labor Standards Act: FLSA
    - The No FEAR Act

- Acquisition Training for Administrative Personnel- 1<sup>st</sup> Quarter
    - Acquisition Training for Administrative Personnel- 2<sup>nd</sup> Quarter
    - Acquisition Training for Administrative Personnel- 3<sup>rd</sup> Quarter
    - Acquisition Training for Administrative Personnel- 4<sup>th</sup> Quarter
- Federal Budgeting Process
    - Overview of the CDER Budget Process
    - Federal budget Process
- FDA FY14 Computer Security Awareness Training
- Travel Card Program A/OPC Training
    - OIP international Travel Process
- Introduction to Accountable Property



- Appropriations Law
- Recertification
  - COR Refresher Training
  - Acquisition-related Elective
- LEVEL 2
  - Initial Training
    - COR Training
    - Appropriations Law
    - Acquisition-related Electives
    - CPARS Overview Training
    - Quality and Narrative Writing
  - Recertification
    - COR Refresher Training
    - Acquisition-related elective
- LEVEL 3
  - Initial Training
    - COR Training
    - Appropriations Law
    - Intro to Project/Program Management
    - Acquisition-Related Elective
    - Project Management Elective
    - CPARS Overview Training
    - Quality and Narrative Writing

- Recertification
  - COR Refresher Training
  - Acquisition-related Elective
  - Ethics and Fraud Awareness
- Staff Specific
  - Administrative
  - Project Management
  - Regulatory Affairs
  - Regulatory Science
  - Outreach and Communications
  - Organizational Development
  - Divisions of Pharmacovigilance
  - Divisions of Epidemiology
  - Drug Use
  - Division of Medication Error Prevention and Analysis
  - Division of Risk Management
  - Contract Management
- Role Specific
  - Reviewer
  - Safety Evaluator
  - Supervisor
    - Human Resource Staffing
      - Highly Encouraged

- HHS Supervisor 101: Module 1- Hiring
  - Veteran Employment Training for Federal Hiring Managers
  - Merit System Principles and Prohibited Personnel Practices
- Elective/Other
  - Equal Employment Opportunity and Discriminatory Practices in Hiring
  - Interviewing and Hiring Practices
  - Interview Architect
  - HR Practices for Managers and Supervisors
  - Hiring and Recruitment for Supervisors
- Performance Management
  - Highly Encourages
    - Supervisor 101 Course 2: Performance Management
    - CDER Performance Management
    - Performance Appraisal Essentials: Planning for Appraisals
    - Addressing and Resolving Poor Performance
  - Elective/Other
    - Performance Management for Managers and Supervisors
- Employee and Labor Relations
  - Highly Encouraged

- Supervisor 101: course 5- Labor and Employee Relations
    - Employee Relations Overview
    - Labor Relations Overview
  - Elective/Other
    - Documenting Discipline
    - Rightful Employment Termination
    - UnCivil Servant: Holding Employees Accountable for Performance and Conduct
- Leave Administration
  - Highly Encouraged
    - Supervisor 101 Course 3: Leave Administration
    - Leave Administration for Supervisors
  - Elective/Other
    - FMLA Leave and More: An Overview of Legally Protected Leave
- Work Life Quality
  - Highly Encouraged
    - Supervisor 101 Course 4: Quality of Work Life
  - Elective/Other
    - Setting up a Remote Office
    - Workplace Safety
    - Telework 101 for Managers
    - Accessibility and Section 508 Awareness

- Personal Development Curriculum/Dealing with Organizational Change
  - Telecommuting Basics: Communication Strategies for the Remote Employee
  - Telecommuting Basics: Maximizing Productivity as a Remote Employee
  - Balancing your Responsibilities Simulation
  - Optimizing Your Work/Life Balance: Analyzing Your Life Balance
  - Optimizing Your Work/Life Balance: Maintaining Your Life Balance
  - Optimizing Your Work/Life Balance: Taking Control of Your Stress
- Human Resource Management
  - Elective/Other
    - Sexual harassment Prevention for Federal Employees
    - Harassment Awareness and Prevention
    - Fair Labor Standards Act: FLSA
    - The No FEAR Act
- Acquisition Management/Contracting
  - Elective/Other
    - Acquisition Training for Administrative Personnel-1<sup>st</sup> Quarter
    - Acquisition Training for Administrative Personnel-2<sup>nd</sup> Quarter
    - Acquisition Training for Administrative Personnel-3<sup>rd</sup> Quarter

- Acquisition Training for Administrative Personnel-4<sup>th</sup> Quarter
- Financial Management
  - Elective/Other
    - Federal Budgeting Process
    - Overview of the4 CDER Budget Process
    - Federal budget Process
- Information Technology Management
  - Elective/Other
    - FDA FY14 Computer Security Awareness Training
- Travel Management
  - Elective/Other
    - Travel Card Program A/OPC Training
    - OIP international Travel Process
- Personal Property Management
  - Elective/Other
    - Introduction to Accountable Property
- Mandatory
  - Mandatory
    - Mandatory FDA Records Management
    - Mandatory Supervisory Ethics Training
- Project Management
  - Elective/Other

- Overview of Project Management
- Federal Culture
  - Elective/Other
    - Equal Voice
- Coaching
  - Elective/Other
    - Preceptor for a Change (PAC)
    - Program for Authentic Leadership (PAL)- Cohort 3
    - Business Coaching: Building the Coaching Relationship
    - Business Coaching: Conducting Coaching Sessions
    - Business Coaching: Getting Ready to Coach
    - Business Coaching: Using Different Coaching Styles

- Project Manager
  - Trainer
  - Policy/Research
- Law & Policy
  - Administrative Law
  - All You Wanted to Know about FDA Employee Rights and Responsibilities
  - All You Wanted to Know about FDA Employee Rights and Responsibilities
  - Basic Drug Law (15 Hour- 5 Sessions)
  - Basic Drug Law (2 Day)
  - Business Law and Ethics
  - Employee and Labor Relations: Employment Regulations and Organizational Programs
  - HHS Appropriations Law
  - NDA Regulations and Policies
  - Workforce Planning and Employment: Employment Legislation
- Professional and Continuing Education
  - Continuing Education
    - FDA Certificate Programs
  - Seminars
    - Center-wide Seminars
    - OSE offered seminars
  - Professional Resources

- Professional Societies
    - AMIA: American Medical Informatics Association
    - APHA: American Public Health Association
    - USDA: Graduate School
    - DIA: Drug Information Association
    - FDLI: Food and Drug Law Institute
    - DOD: FAITIS: Federal Acquisitions Institute Training Application System
    - FAI: Federal Acquisitions Institute
    - ICH: International Conference on Harmonization
    - ISPE: International Society for Pharmacoepidemiology
    - RAPS: Regulatory Affairs Professional Society
  - Professional Journals
    - JAMA
    - American Journal of Pharmacy and Health Research
    - MedScape
- Data Systems
  - Internal
    - FAERS (OAERS/FBIS): FDA Adverse Event Reporting System
    - DARRTS: Document Archiving Reporting Regulatory Tracking System
    - Panorama
    - AIMS: Agency Information Management System
    - EASE: Enterprise Administrative Support Environment

- EDR/Global Submit: Electronic Document Room
  - External
    - List of databases
- Fundamentals
  - Writing Mechanics
    - Writing Regulations & Guidance Using Plain Language
    - Topics in Plain Language & Health Literacy
    - Language Tune-Up
    - Writing for Success using Plain Language
    - Foundations of Plain Language
    - English as a Second Language
    - Elements of Plain Language
    - Writing Web Content in Plain Language
    - Writing Under Pressure: The Writing Process
    - Writing Under Pressure: Preparing for Success
    - The Plain Writing Act
    - Writing Regulations & Guidance Using Plain Language
    - Writing for Technical Professionals: Effective Writing Techniques
    - Writing Refresher
    - E-mail Writing
    - Writing for Publication
    - Business Writing: Editing and Proofreading
    - Technical Writing for Reviewers

- Business Writing: Know Your Readers and Your Purpose
- Writing Web Content in Plain Language
- Writing for Technical Professionals: Preparation and Planning
- Creating Clear Documents: A Toolkit for Clear Drafting
- Business Grammar: The Mechanics of Writing
- Effective Writing Skills Workshop
- Foundations of Plain Language
- Mistake-Free Letters and Memos
- Elements of Plain Language
- Business Grammar: Parts of Speech
- Language
  - Effective Communication Skills for Non-Native Speakers of English
  - English as a Second Language
  - Enunciation
  - Speaking for Success: American English Pronunciation & Public Speaking Skills
- Program Basics
  - Microsoft Office
    - Microsoft Internet Explorer 9: Customization and Security
    - Microsoft Windows Server 2012- Installing and Configuring: Group Policies
    - New Features for End Users in Microsoft Office 2007
    - New Features for PowerPoint, Publisher, and Access in Office 2010

- Office 2010 New Core Features
- Protecting and Sharing Excel 2007 Workbooks
- Word 2010, Excel 2010, and New Office 2010 Interface
- Lync
  - Microsoft Office 2010: Getting Started with Lync
  - Microsoft Office 2010: Lync Meetings, Calls, Sharing and Collaboration
- One Note
  - Microsoft Office 2010: Managing Information with OneNote
  - Microsoft Office 2010: Sharing Information with OneNote
  - Outlook 2010 and Collaboration in Office 2010
- Word
  - Adjusting Document Views and Customizing the Appearance of Word 2013
  - Customizing Document Layout in Word 2013
  - Managing, Inspecting, and Recovering Word 2010 Documents
  - Navigating and Reviewing Documents in Word 2013
  - Reviewing Documents in Word 2010
  - Saving, Sharing, and Printing in Word 2010
  - Sharing and Collaborating in Word 2013
  - Structuring a Document in Word 2013
  - Structuring Word 2010 Documents
  - Using Tables, Charts, and Graphics in Word 2007
  - Word 2010 Intermediate

- Word 2010 Introduction
- Excel
  - Advanced Formats and Layouts in Excel 2013
  - Advanced Formulas and Functions in Excel 2013
  - Creating and Customizing Visual Elements in Excel 2013
  - Creating Workbooks, Worksheets, and Data in Excel 2013
  - Customizing Options and Views in Excel 2013
  - Data Search, Data Validation, and Macros in Excel 2013
  - Excel 2010 Advanced
  - Excel 2010 Intermediate
  - Excel 2010 Introduction
  - Formatting Cells and Worksheets in Excel 2013
  - Formatting Data in Excel 2013
  - Getting Started with Excel 2010
  - Manipulating data in Excel 2013
  - Performing Calculations Using functions in Excel 2013
  - Presenting Data in Tables and Charts in Excel 2013
  - Presenting Data using Conditional Formatting and Sparklines in Excel 2013
  - Reviewing and Protecting Content in Excel 2013
  - Saving and Printing Data in Excel 2013
  - Sharing and Linking Data, and Adding Office Apps to Excel 2013
  - Using Financial Functions and What-If Analysis in Excel 2013

- PowerPoint
  - Access
    - Access 2010 Advanced
    - Access 2010 Intermediate
    - Access 2010 Introduction
  - Project
  - Outlook
    - Outlook 2010 and Collaboration in Office 2010
  - SharePoint
    - Workflows, Collaboration, and Analysis in SharePoint 2013
    - Community Sites, Search, and Office Integration in SharePoint 2013
    - Extending SharePoint 2010 Search and Documents
    - Microsoft SharePoint 2010: New Features for Power Users
    - Navigating, Lists, Libraries, Alerts, and Document Sets in SharePoint 2013
    - SharePoint Online
    - Using and Configuring Search in SharePoint 2013
    - SharePoint 2010 SP1: Core Configuration
    - SharePoint 2010 SP1: Planning for Search
- Career Skills
  - Communication
    - OSE Offered
      - Communication

- Crucial Conversations
- Teleworking the Savvy Way
- Non OSE offered
  - 4G Communication Systems
  - Body Language
  - Communicating Across Cultures
  - Communicating Science Workshop
  - Communicating with Clarity
  - Communication Skills
  - Communication Skills
  - Communication Skills
  - Communication Skills and Project Management
  - Communication Skills and Project Management
  - Communications and Feedback
  - Communications and Security in Windows Server 2008
  - Crisis and Risk Communication
  - Culture and Its Effects on Communication
  - Effective Communication
  - Effective Team Communication
  - Essential Skills for Professional Telephone Calls
  - How to Write a Darn Good E-mail
  - Interpersonal Communication: Communicating Assertively
  - Interpersonal Communication: Communicating with Confidence

- Interpersonal Communication: Communicating with Confidence
  - Interpersonal Communication: Listening Essentials
  - Interpersonal Communication: Targeting Your Message
  - Speak so Others will Listen
  - Strategies for Communicating with Tact and Diplomacy
  - Telecommuting Basics: A Communication Strategies for the Remote Employee
  - Telecommuting Basics: A Communication Strategies for the Remote Employee
  - The Internet, Social Media, and Electronic Communication
  - The Internet, Social Media, and Electronic Communication
  - Understanding the Risk of Using Internet Media and Electronic Communications
  - Constructive Conflict Management in the Workplace
  - Creative Conflict Management and Resolution
  - Effective Communication and Managing Workplace Conflict
  - Global Conflicts of Interest
  - Successful Conflict Resolution
  - Workplace Conflict: Recognizing and Responding to Conflict
  - Workplace Conflict: Strategies for Resolving Conflict
  - Conducting a Successful Negotiation Simulation
  - Negotiation Essentials: Communicating
  - Negotiation Essentials: Persuading
- Individual Awareness

- OSE Offered
  - Develop Personal Vision
  - Individual Development Plan
  - Emotional Intelligence (EQ)
  - MBTI
  - MBTI Workshop
  - StrengthsFinder
- Non-OSE Offered
  - Individual Behavior
  - Personal Accountability
  - Problem Solving: Determining and Building Your Strengths
- Leadership
  - OSE Offered
    - Coaching demystified
    - Coaching skills for TLs
    - Leadership development series
    - Political savvy
  - Non-OSE Offered
    - Building Trust and Confidence as a Leader
    - Choosing Leadership
    - Compensation and Benefits: Managing Policies, Programs and Activities
    - Conflict and Cooperation: Managing Team Communication

- Delegation Essentials: An Introduction to Delegating
- Diversity: Leadership Virtual Module
- Essential Mentoring Techniques: Building and Maintaining Mentoring Relationships
- Essentials of Interviewing and Hiring: Preparing to Interview
- Generating Creative and Innovative Ideas: Maximizing Team Creativity
- Giving Feedback for Team Leaders and Supervisors
- Government Leadership Advantage
- Interpersonal Skills for Managers and Supervisors
- Introduction to Program Management
- Key Strategies for Managing Cross-Functional Teams
- Leadership
- Leadership Advantage: Accountability 2.0
- Leadership Advantage: Career Development 2.0
- Leadership Advantage: Decisiveness 2.0
- Leadership Advantage: Ethics, Integrity and Trust 2.0
- Leadership Advantage: Globalization 2.0
- Leadership Advantage: Influence and Persuasion 2.0
- Leadership Advantage: Leading Effective Meetings 2.0
- Leadership Advantage: Negotiating 2.0
- Leadership Advantage: Coaching 2.0
- Leadership Development Program Course

- Leadership Essentials: Building Your Influence as a Leader
- Leadership Essentials: Communicating Vision
- Leadership Essentials: Creating Your Own Leadership Development Plan
- Leadership Essentials: Leading Change
- Leadership Essentials: Leading Innovation
- Leadership Essentials: Motivating Employees
- Leadership Knowledge Center
- Leadership Self Deception
- Leadership Six: Stress Management
- Leadership: Valuing Diversity and Culture
- Leading an Agile Team
- Leading and Managing Organizational Change
- Leading Teams: Building trust and Commitment
- Leading Teams: Dealing with Conflict
- Leading Teams: Developing the Team and its Culture
- Leading Teams: Establishing Goals, Roles, and Guidelines
- Leading Teams: Fostering Effective Communication and Collaboration
- Leading Teams: Launching a Successful Team
- Leading Teams: Managing Virtual Teams
- Leading Teams: Motivating and Optimizing Performance
- Management Essentials: Delegating

- Managerial Skills and Abilities
  - Managing Essentials: Managing a Diverse Team
  - Managing Internal Dynamics in a Cross-functional Team
  - Managing Review Teams in DAARTS
  - Managing Technical Professionals
  - Managing Workforce Generations: Working with a Multigenerational Team
  - Managing Workplace Conflict
  - Plan and Manage Project Communications
  - Plywood Leadership: Lessons on Leadership from a Warrior, Statesman, and Scholar
  - Promoting Respect in the Global Workplace- Manager Edition
  - Strategic Communication for Manager: Enhancing Two-Way Communication for High Performance
  - Strategies for Successful Employee Onboarding: Assessing Program Success
  - The Voice of Leadership: Effective Leadership Communication Strategies
  - The Voice of Leadership: Inspirational Leadership
  - The Voice of Leadership: Self-assessment and Motivation
  - The Voice of Leadership: The Power of Leadership Messaging
  - UnCivil Servant: Holding Employees Accountable for Performance and Conduct
  - Using Facilitation Skills as a Manager
- Applied Skills

- OSE Offered
  - Change management
  - Meeting management
  - Presentation skills
  - Taking meeting minutes
  - Time management
  
- Non-OSE Offered
  - Administrative Professionals: Interacting with Others
  - Basic Presentation Skills: Creating a Presentation
  - Basic Presentation Skills: Delivering a Presentation
  - Basic Presentation Skills: Planning a Presentation
  - Being an Effective Team Members
  - Being an Effective Team Members
  - Challenges of Facilitating
  - Critical Thinking Essentials: Applying Critical Thinking Skills
  - Decision Making: Making Tough Decisions
  - Developing Strategic Peer Relationships in Your Organization
  - Essential Mentoring Techniques: Designing and Initiating Mentoring Programs
  - Essential mentoring Techniques: Evaluating and Ending Mentoring
  - Forming Peer Relationships and Alliances at Work
  - Fundamentals of Organizational behavior for the Individual
  - HHS Disability Cultural Awareness Training

- HHS Mentoring Program Orientation
- implementing and Assessing a Succession Planning Program
- Individual Behavior: Critical Thinking and Learning
- Listening Essentials: Improving Your Listening Skills
- Personal Productivity Improvement: Managing Your Workplace
- Professional networking Essentials: Developing Confidence
- Using Business Etiquette to Build Professional Relationships
- Using Strategic Thinking Skills
- Interpersonal Skill Development for Employees
- Interpersonal Skills for Managers and Supervisors
- Confident Communicator/ Confidence, Self Esteem, and self-awareness
- Intermediate Presentation Skills
- Interview Skills
- Interviewing Tips for Your Next Position
- Facilitation Skills
- Negotiation Skills
- Presentation Skills
- Presentation Skills: Speaking to Inform
- Presentation Skills: Speaking to Inform, Persuade & Managing Special Challenges
- Situational Leadership
- Successful Meetings and Minutes

- Clear and Concise Email and Business Writing
- Team Building
  - OSE Offered
    - Teamwork
    - Trust
    - Working in a shared office
    - Conflict
    - Dealing with difficult situations
  - Non-OSE Offered
    - Control Project Communications
    - Cross-functional Team Fundamentals
    - Effective Team Communication
    - Elements of a Cohesive Team
    - Establishing Team Goals and Responsibilities
    - Fundamentals of Organizations- Groups
    - Generating Creative and Innovative Ideas: Maximizing Team Creativity
    - Group Dynamics Two: Applications
    - Stepping Up to Collaborative Leadership
    - Team Dynamics
    - Teambuilding: The Five Dysfunctions of a Team Workshop
    - Using Feedback to Improve Team Performance

**Table 5.1** Shows the entire taxonomy in outline format with the courses that have been included. This outline can serve as a guide to the webmaster in deciding where courses should be listed.

**Table 5.2 Taxonomic Dictionary**

<b>Taxonomy Term</b>	<b>Definition</b>
<b>System Title</b>	The title of the system and highest level similarity that all entries will share.
<b>Major Category</b>	High level category that can include a large number of generally similar entries.
<b>Group</b>	Grouping within a major category that further narrows available entries. Groupings are usually based on the general topic of training.
<b>Classification</b>	The most specific level of classification in the taxonomy. Further classification would be extraneous.

<b>Major Category</b>	<b>Group within Major Category</b>
<b>Required</b> -Category of courses that are in some way required. Courses may be "required" at the FDA, staff or specific role level.	
	<b>FDA Agency Required (annually)</b> - 3 courses required by FDA for all employees and contractors.
	<b>COR</b> - courses in this category can meet core requirements. There is a complete list, but it also broken down into the three levels of core.
	<b>Supervisory</b> - Courses in this group meet the supervisor training requirements; they were taken directly from DLOD/CDER Supervisors Pathway Tool. Within the group course are broken down into the classifications of the Pathways Tool and courses marked as highly recommended can be seen in each course description.
	<b>Staff Specific</b> - required courses defined by each staff
	<b>Role Specific</b> - Courses in this group are required courses for each major role within the office, as eventually defined by office leadership.
	<b>Law &amp; Policy</b> -Courses here will deal with drug law, regulatory procedure, and FDA Policy.

<p><b>Professional and Continuing Education-</b> Resources eventually listed in this category will allow staff members to continue formal education as well as contact resources useful in professional development.</p>	
	<p><b>Continuing Education-</b> This group will allow users access to sources of CE credits.</p>
	<p><b>Seminars-</b> Courses in this group will include in-office and center wide seminars that can offer CE credit or knowledge to stay on the cutting edge of clinical, regulatory, and scientific findings.</p>
	<p><b>Professional Resources-</b> This group provides links to outside professional societies and journals for networking and professional development purposes.</p>
<p><b>Data Systems-</b>FDA uses many data systems and training for both internal and external systems can be found here.</p>	
	<p><b>Internal-</b> This group includes training for FDA's internal data systems.</p>
	<p><b>External-</b> Training for the external data systems FDA uses can be found here.</p>
<p><b>Fundamentals-</b> This category contains courses that staff members can use to gain or refresh basic skills which are needed within OSE.</p>	
	<p><b>Writing Mechanics-</b> This grouping includes all writing courses from basic grammar refreshers to plain and technical writing skills.</p>
	<p><b>Language-</b> Courses listed here aim to help staff members whose first language is not English.</p>
	<p><b>Program Basics-</b> This grouping includes introductory, intermediate, and advanced courses in computer programs commonly used here at FDA including: Word, Excel, PowerPoint, SharePoint, Outlook, Access, Project, and Lync.</p>

<b>Career Skills</b> -Courses listed in this category increase an employee's interpersonal, intrapersonal, and leadership skills.	
	<b>Communication</b> - Courses included in this group guide trainees in communicating, resolving conflict, and negotiating with colleagues.
	<b>Individual Awareness</b> - The group includes course to help the individual learn about themselves by identifying personality traits, personal strengths, and development of career plans.
	<b>Leadership</b> - Courses listed in this group sharpen participant's leadership skills.
	<b>Applied Skills</b> - This grouping includes courses that strengthen staff member's practical skills such as: presentation giving, meeting facilitation, minute taking, and confidence building.
	<b>Team Building</b> - Courses included in this group create team awareness and build good team working skills.

**Table 5.2** Shows each taxonomic category and group. Each one is clearly defined to ensure consistency in the future.

## Section 1, User Manual



# OSE Training KMS

## User Manual

By: Jennifer Coffey, Sean Murphy, Tammy Zamaitis

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**Visit the SharePoint OSE Training KMS at:** [http://sharepoint.fda.gov/orgs/CDER-  
OSE/oseregulatorystaff/OSE%20Knowledge%20Management/default.aspx](http://sharepoint.fda.gov/orgs/CDER-<br/>OSE/oseregulatorystaff/OSE%20Knowledge%20Management/default.aspx)

## **About the OSE Training Knowledge Management System (KMS)**

This training KMS was designed for the OSE to address the need for centralization of both mandatory and elective training for new and seasoned staff members. The goal of the KMS is to provide an intuitive and easy to navigate site in order to locate and track training materials. This training manual is modeled after the *Office Pro FDA SharePoint Manual*. This guide will provide a concise, detailed walkthrough of navigating the OSE Training KMS SharePoint site as well as provide detailed descriptions of the specific tools and corresponding functionalities.

This Manual begins by explaining SharePoint as a Microsoft application and the unique functionalities and tools it provides. SharePoint is the agency standard for collaboration and offers a suite of out-of-the box features and tools that automate the process of organizing and finding necessary information and knowledge. This SharePoint site can be used to locate, schedule, and track training materials from both external and internal sites. You can access SharePoint through an Internet web browser or through your Favorite's folder by saving the SharePoint URL.

## Training KMS Table of Contents

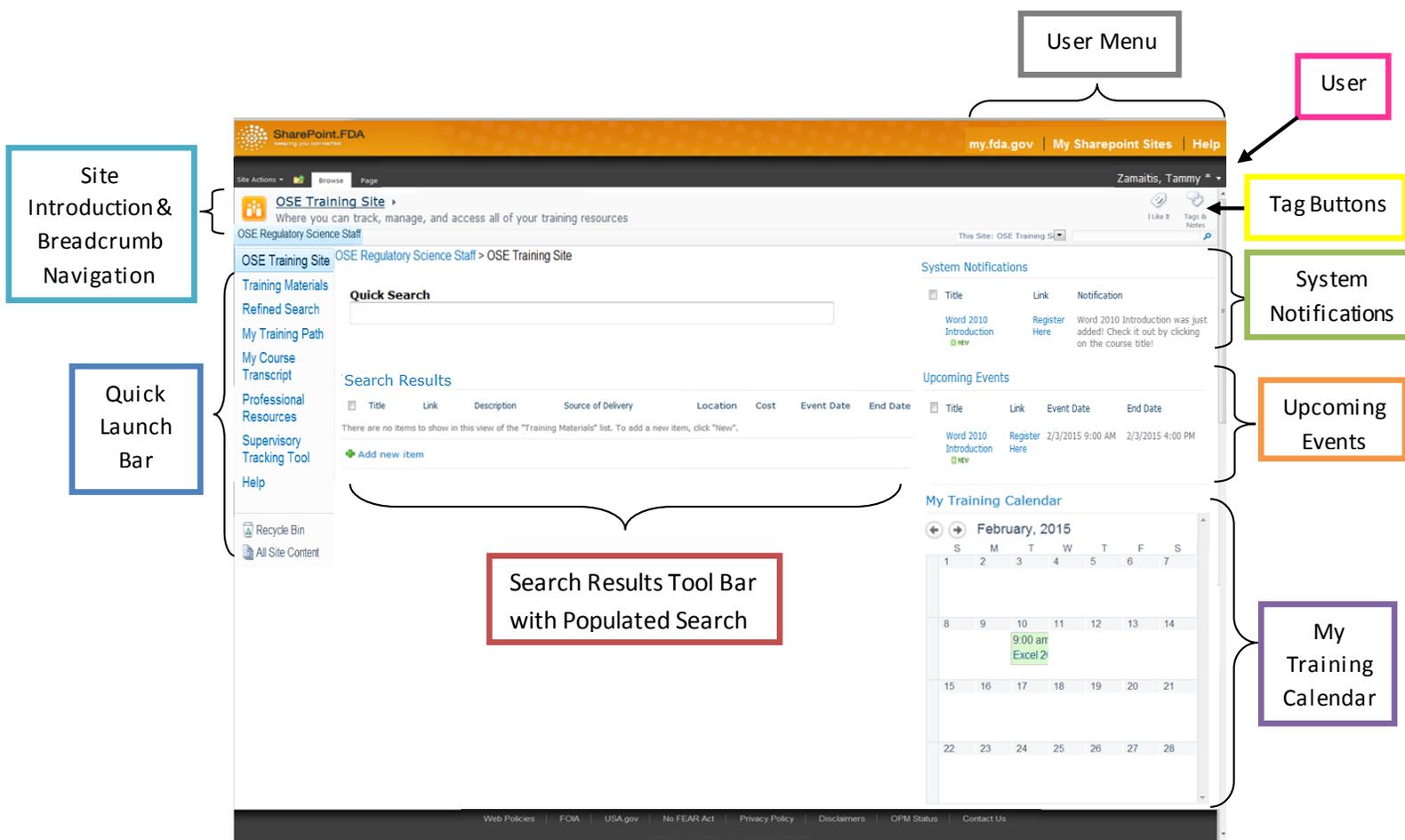
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## Chapter 1: Getting Started

This chapter explains some of the key features provided on the SharePoint site. This chapter introduces you to the OSE Training Knowledge Management System Homepage and then discusses the different permission levels of users.

### Homepage Elements

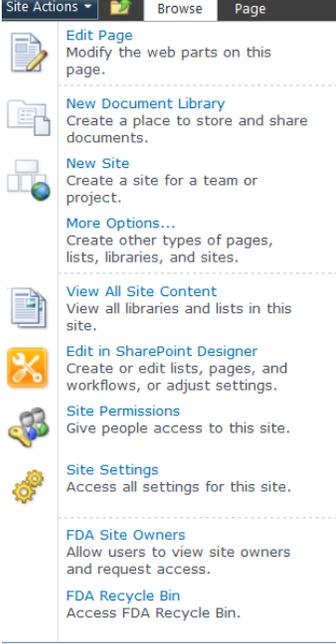
Navigation within the SharePoint site is user friendly and simple as SharePoint uses simple web-browser features that you may be familiar with. **Figure 1**, is a screenshot of the homepage of the OSE Training KMS with a detailed table illustrating each components feature.

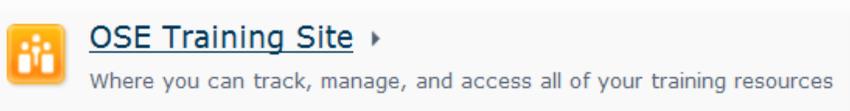
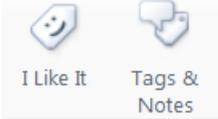
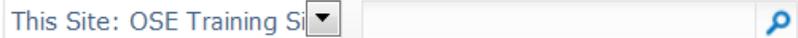


**Figure 1: OSE Training KMS Home Page**

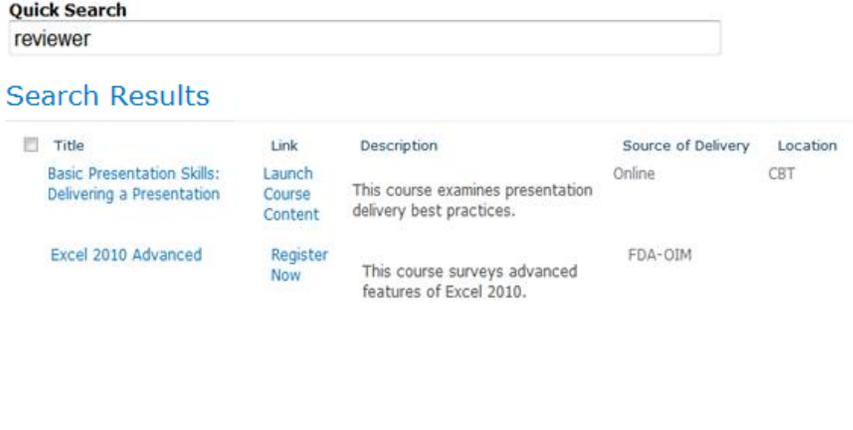
The key features of the site are shown in the homepage screen shot. These key features are ways in which you can navigate through the KMS training homepage. Each individual tool and button is further described in the Interface Elements Catalog (**Table 1**) shown below.

**Table 1:** OSE Training KMS Homepage Elements Catalog

Homepage Elements and Buttons	Description
<p>FDA SharePoint Banner and User Menu</p>	 <p>The SharePoint Banner and User Menu: The Banner shows you that you are on the FDA SharePoint as well as gives users access to the FDA homepage and other FDA SharePoint sites.</p>
<p>Site Actions Menu</p>	 <p>This tool bar changes based on your level of permission. If you have the correct permissions you can edit the contents of the homepage by selecting the “Page” tab</p>
<p>Navigate Up</p>	 <p>This button allows you to navigate directly to the top level SharePoint site in the hierarchy which would bring you to the FDA main SharePoint site homepage.</p>

<p>User</p>	 <p>This shows the user who is currently accessing SharePoint. Based on your permission level you will be able to access and use certain tools and functionalities within the site.</p>
<p>Site Introduction</p>	 <p>This provides a brief description of the goal of the OSE Training site. Also included is the Breadcrumb navigation which lets you view the current pages within the site's hierarchy so at any time you can return to the previous page.</p>
<p>Tag Buttons</p>	 <p>Clicking the “I like it button” allows you to save the page you are viewing. You can customize tags and these tags are private for each user. If you click the “Tags&amp;Notes” button you can see the recently saved tags you have created. Comments can be written for each tag so that you can remember why you saved the certain page.</p>
<p>FDA Search Box</p>	 <p>This search tool bar allows you to do a broad search through all available FDA SharePoint sites.</p>

<p>Quick Launch Bar (User Permissions)</p>	 <p>The <i>Quick Launch Bar</i> contains several buttons that can be used to access different pages within the SharePoint site.</p> <ul style="list-style-type: none"> <li>• <i>Training Materials</i>: catalog of all available training courses.</li> <li>• <i>Search</i>: drop down filters are provided in order to narrow training course search results.</li> <li>• <i>My Training Path</i>: courses of particular interest that you plan to take in the future.</li> <li>• <i>My Course Transcript</i>: courses you have registered for and taken. It also provides a place to upload a certificate of completion.</li> <li>• <i>Professional Resources</i>: active links to external societies and databases that provide CE.</li> <li>• <i>Help</i>: links to the user, webmaster, and developer manuals if there are questions or a need to refresh knowledge on navigating or accessing the tools.</li> <li>• <i>All Site Content</i>: this allows you to visit each list and library that is available on the site. The amount of lists and libraries that are available to view, access, edit, and delete are based on the level of user permissions.</li> </ul>
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<p>Quick Launch Bar (Supervisor Permissions)</p>	 <p>The <i>Quick Launch Bar</i> contains several buttons that can be used to access different pages within the SharePoint site. Those with supervisory permission levels can access the <i>Supervisory Tracking Tool</i>.</p>
<p>Quick Search</p>	 <p>The “Quick Search” tool bar allows users to quickly search for any training materials located within the SharePoint site.</p>
<p>Search Results</p>	 <p>Once a course is entered into the “Quick Search” tool bar the search results will populate in the Training Results area.</p>

## System Notifications

### System Notifications

<input type="checkbox"/>	Title	Link	Notification
<input type="checkbox"/>	<a href="#">Word 2010 Introduction</a> <small>NEW</small>	<a href="#">Register Here</a>	Word 2010 Introduction was just added! Check it out by clicking on the course title!
<input type="checkbox"/>	<a href="#">Word 2010 Intermediate</a> <small>NEW</small>	<a href="#">Register Here</a>	Word 2010 Intermediate was just added! Check it out by clicking on the course title!

1 - 2 ▶

This is where you can see any recent training courses that have been put into the site. Only the first two training courses that have been added to the site are shown in the display. However, you can view more training courses that have been added by clicking the arrow at the bottom.

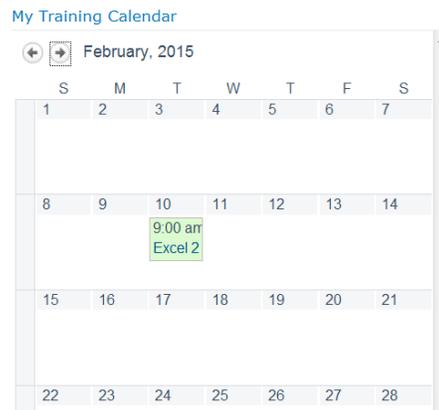
## Upcoming Events

### Upcoming Events

<input type="checkbox"/>	Title	Link	Event Date	End Date
<input type="checkbox"/>	<a href="#">Word 2010 Introduction</a> <small>NEW</small>	<a href="#">Register Here</a>	2/3/2015 9:00 AM	2/3/2015 4:00 PM
<input type="checkbox"/>	<a href="#">Excel 2010 Introduction</a>	<a href="#">Register Now</a>	2/10/2015 9:00 AM	2/10/2015 4:00 PM

Upcoming events allow users to view the first four training materials that are near completion date within the next 60 days. Clicking the arrow will show more training course options.

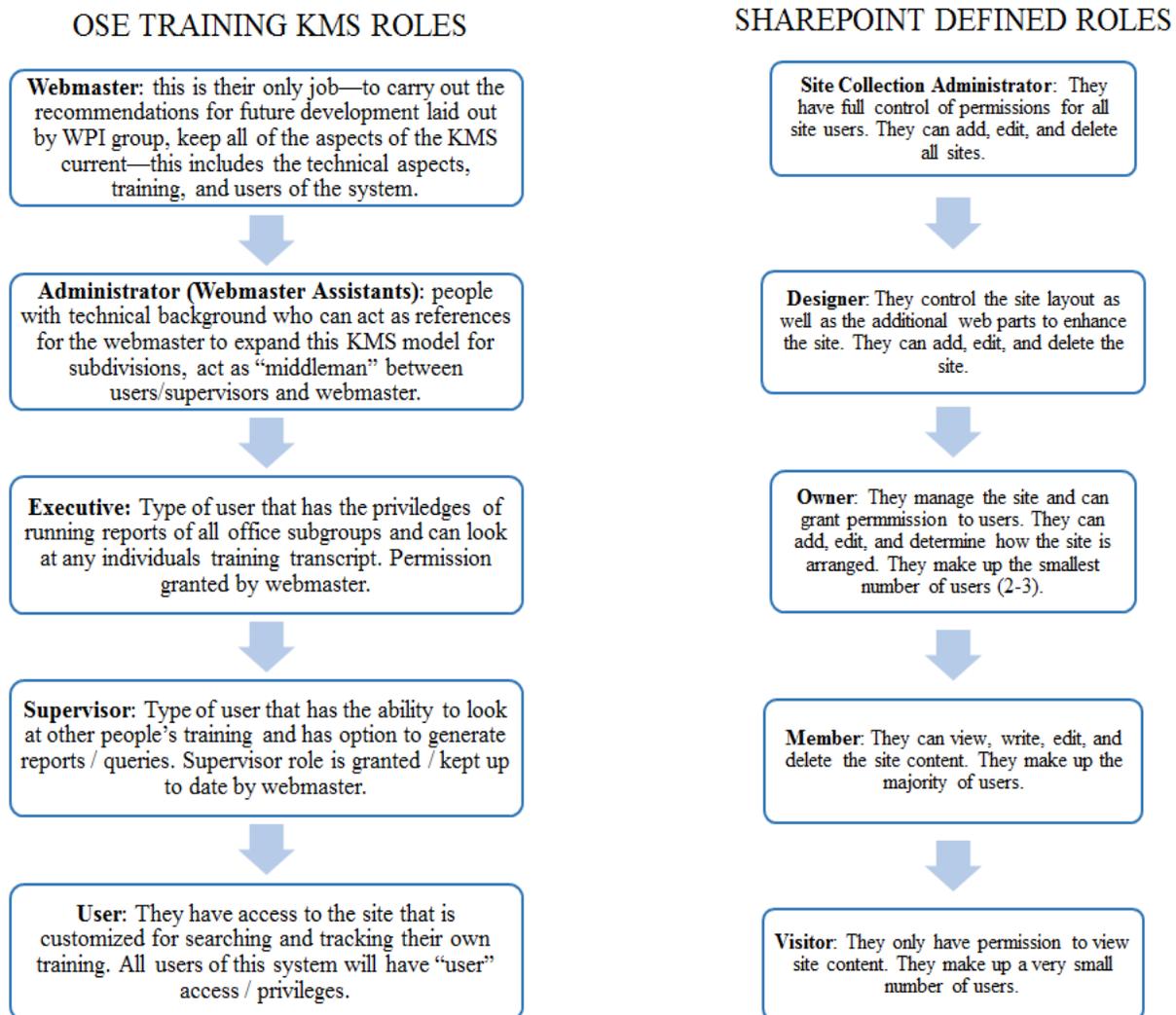
## My Training Calendar



The My Training Calendar allows users to see training courses that they have registered for and added to *My Course Transcript*. Courses registered using the *My Course Transcript* button will automatically appear in the training calendar. At present, the SharePoint training calendar is not linked directly with Outlook Calendar.

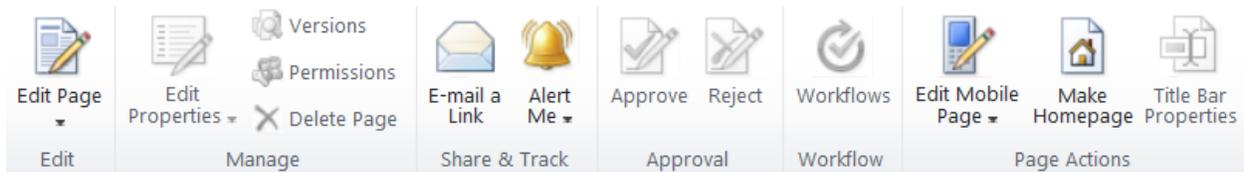
## Levels of Permissions

In SharePoint there are various groups that are created in order to manage site permissions to provide security. Groups are individuals who share the same permissions. By managing the site permissions, each user will be assigned to their specific staff or team within the OSE. Those with supervisory positions will be able to see their entire staff's training transcripts. However, for regular users they will only be allowed to view and access their personal training transcripts and not that of another employee. Users with executive permissions will be able to conduct office wide reports to see which individuals have completed training. SharePoint has identified five main permission groups for users, but we have customized these permissions for the needs of the OSE users. The user-defined roles that we have defined for the OSE office are shown below in **Figure 2**.



**Figure 2: Levels of Permissions**

**Figure 2** describes in detail the Permission Levels for each user. Based on the level of permissions, users can view/ access different parts of the training site. If you do not have the appropriate level of permission certain features and functionalities of this training KMS will not be available to you. Features and tools that you do not have access to will be greyed out in the SharePoint site. An example of greyed out features is shown below in **Figure 3**.



**Figure 3:** Example of Greyed out features based on permissions level.

From **Figure 3** you can see that only the Webmaster and Administrator have the Permission Level to access the technical development of this site and functionalities such as “Manage,” “Approval,” “Workflow,” and “Page Actions”. These buttons are inaccessible to all levels of users with the exception of the Webmaster and Administrator.

## Chapter 2: Features Explained

This chapter explains each button located on the *Quick Launch Bar* on the left side of the OSE Training KMS homepage.

### Training Materials View

The *Training Materials* button on the *Quick Launch Bar* brings a user to an unfiltered list of courses that have been entered into the OSE Training KMS. This list view can be seen below in **Figure 4**. Only 30 entries can be seen at a time in the *Training Materials* view.

Title	Link	Description	Source of Delivery	Event Date	End Date	Category	Group	Classification	Role	Cost	Location
Basic Presentation Skills: Creating a Presentation	Launch Course Content	This course outlines basic presentation creation.	Online			Career Skills	Applied Skills		Reviewer, Safety Evaluator, Supervisor, Trainer, Project Manager, Policy / Research	\$0.00	CBT
Basic Presentation Skills: Delivering a Presentation	Launch Course Content	This course examines presentation delivery best practices.	Online			Career Skills	Applied Skills		Reviewer, Safety Evaluator, Supervisor, Project Manager, Trainer, Policy / Research	\$0.00	CBT
Basic Presentation Skills: Planning a Presentation	Launch Course Content	This course helps in planning a presentation.	Online			Career Skills	Applied Skills		Reviewer, Safety Evaluator, Project Manager, Supervisor, Trainer, Policy / Research	\$0.00	CBT
Excel 2010 Advanced	Register Now	This course surveys advanced features of Excel 2010.	FDA-OIM	5/12/2015 9:00 AM	5/12/2015 4:00 PM	Fundamentals	Program Basics	Excel	Reviewer	\$100.00	

This list includes fields containing the: course title, link, description, source of delivery, dates, times, category, group, classification, role, cost, and location. A larger view of this header bar can be seen below in **Figure 5**.

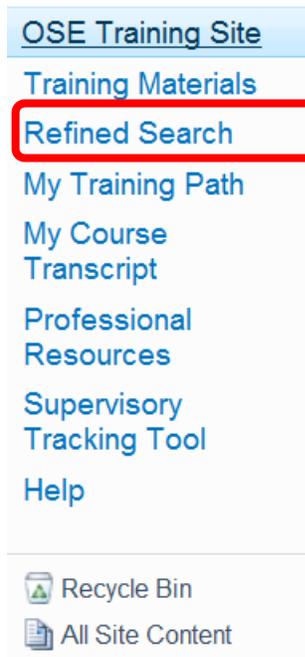
Title      Link      Description      Source of Delivery      Event Date      End Date      Category      Group      Classification      Role      Cost      Location

Users can browse this page and begin work flows for course organization or they can directly launch course content from this list. Workflows are further explained in Chapter 4.

## Refined Search

The *Refined Search* button on the *Quick Launch Bar* allows for a more refined search of course material. The search functions of this SharePoint site are described in detail in Chapter 3.

To access this refined search feature select *Refined Search* on the *Quick Launch Bar* as shown below in **Figure 6**.



The next menu that is shown allows users to apply filters to return more specific search results. This page can be seen on the next page in **Figure 7**.

SharePoint.FDA  
keeping you connected

my.fda.gov | My Sharepoint Sites | He

Site Actions | Browse | Page | Coffey, Jennifer

OSE Training Site > SearchTrainingMaterials

Where you can track, manage, and access all of your training resources

OSE Regulatory Science Staff | This Site: OSE Training Si

[Navigate Back](#)  
[Return to OSE Training Site](#)

**Search**

**Refine Search**  
Use the dropdowns to further refine your search results

**Refine Search By: Role**

**Refine Search By: Category**

**Refine Search By: Group**

**Refine Search By: Classification**

**Refine Search By: Source of Delivery**

**Refine Search By: Location**

**Refine Search By: Cost**

**Training Materials**

<input type="checkbox"/>		Title	Link	Description	Source of Delivery	Event Date	End Date
<input type="checkbox"/>		Basic Presentation Skills: Creating a Presentation	<a href="#">Launch Course Content</a>	This course outlines basic presentation creation.	Online		
<input type="checkbox"/>		Basic Presentation Skills: Delivering a Presentation	<a href="#">Launch Course Content</a>	This course examines presentation delivery best practices.	Online		
<input type="checkbox"/>		Basic Presentation Skills: Planning a Presentation	<a href="#">Launch Course Content</a>	This course helps in planning a presentation.	Online		
<input type="checkbox"/>		Excel 2010 Advanced	<a href="#">Register Now</a>	This course surveys advanced features of Excel 2010.	FDA-OIM	5/12/2015 9:00 AM	5/12/2015 4:00 P
<input type="checkbox"/>		Excel 2010 Intermediate	<a href="#">Register Now</a>	Build intermediate skills in Excel 2010.	FDA-OIM	3/24/2015 9:00 AM	3/24/2015 4:00 P

**Figure 7: Refined Search View**

As you can see above, course results can be filtered by role, category, group, classification, source of delivery, location, and cost.

## My Training Path

The *My Training Path* button on the *Quick Launch Bar* brings the user to a list of courses they have set aside for the future. The *My Training Path* view is seen by selecting the appropriate button, illustrated below in **Figure 8**.

The screenshot displays the SharePoint.FDA interface for the 'OSE Training Site' under the 'My Training Path' view. The page header includes the SharePoint.FDA logo and navigation links. The main content area shows a list of training courses with the following columns: Title, Link, Description, Source of Delivery, EventDate, EndDate, Major Category, Group, Role, and Classification. The 'My Training Path' button in the left navigation pane is highlighted with a red box.

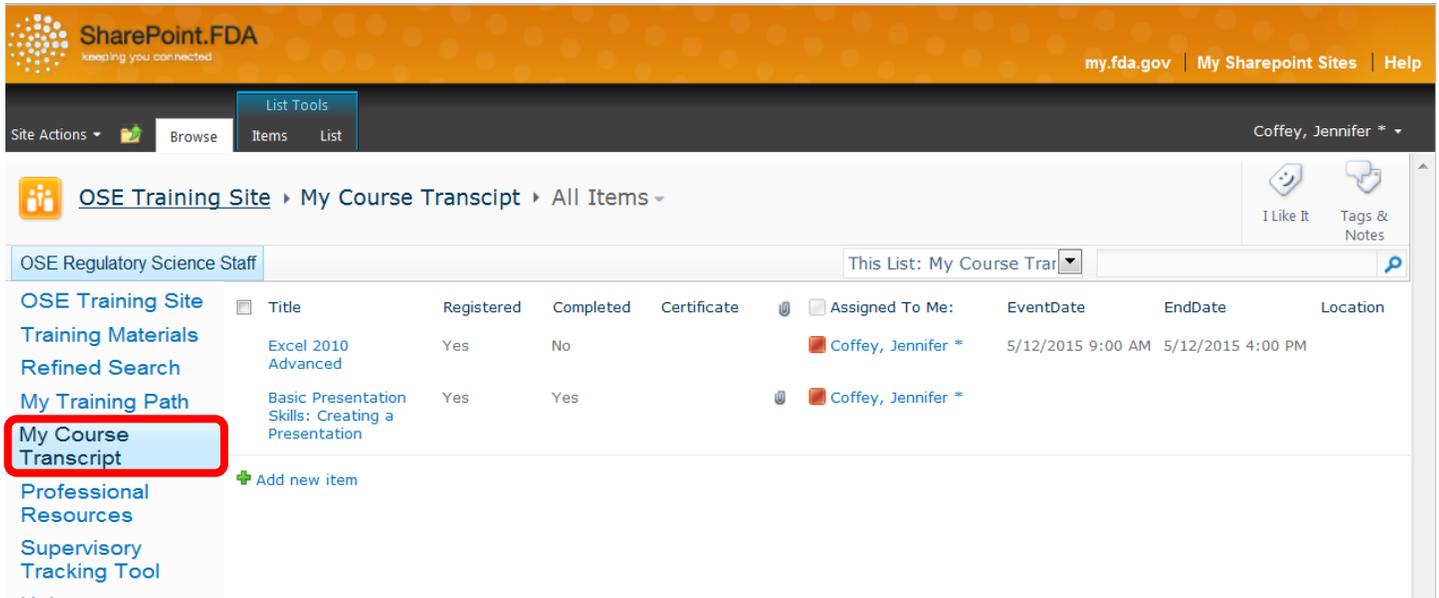
Title	Link	Description	Source of Delivery	EventDate	EndDate	Major Category	Group	Role	Classification
Basic Presentation Skills: Creating a Presentation	Launch Course Content	This course outlines basic presentation creation.	Online			Career Skills	Applied Skills	Reviewer, Safety Evaluator, Supervisor, Trainer, Project Manager, Policy / Research	
Diversity: Leadership Virtual Module	Launch Course Content	Skills for leading a diverse team.	Online			Career Skills	Leadership	Reviewer, Supervisor, Trainer, Project Manager, Policy / Research, Analyst, Team Leader	Non-OSE- Offered

**Figure 8: My Training Path**

Courses displayed in this category include all the information that has been entered about a course including the direct link for when a user wants to access a course.

## My Course Transcript

The *My Course Transcript* button on the *Quick Launch Bar* allows users to access courses they have registered for and completed. This view also allows users to upload a certificate of completion. *My Course Transcript* is accessed directly from the *Quick Launch Bar* as shown below in **Figure 9**.

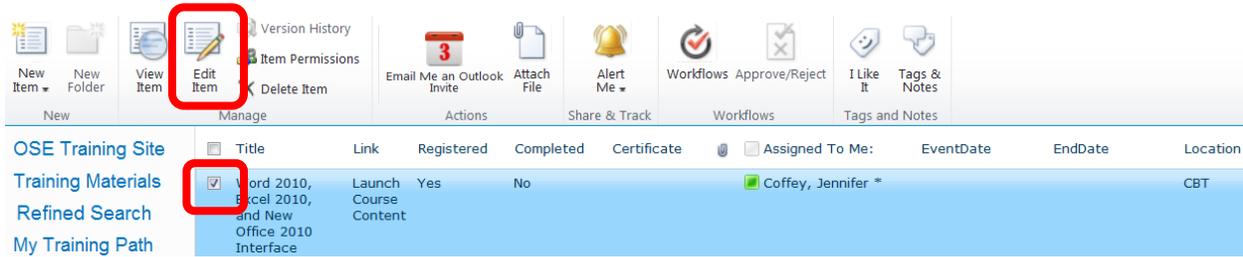


**Figure 9: My Course Transcript**

Courses in this view show the user whether they have registered, completed, and uploaded a certificate for each individual course. Users manually change their completion status and upload documentation (such as a certificate) to show they have completed it. The paperclip icon denotes that the user has attached a certificate. This is how your supervisor can track which training you have completed. The features are highlighted below in **Figure 10**.



Once you have completed a course, and have added it to *My Course Transcript* you can go back and upload a certificate and change the completed value from “No” to “Yes.” You can also note the date on which you took the course, even if it’s an online course. The steps are shown below in **Figures 11 and 12.**



First, select a course and then choose “Edit Item” on the tool bar above.

In the form that appears next you can (1) say that you have completed the course, (2) upload a certificate and (3) note what date the course was completed.

The screenshot shows a form with several fields. Three blue arrows point to specific fields, labeled with the numbers 1, 2, and 3:

- Arrow 1 points to the 'Registered' field, which has a checked checkbox.
- Arrow 2 points to the 'Certificate' field, which contains a button labeled 'Click here to attach a file'.
- Arrow 3 points to the 'EventDate' field, which is an empty text box with a calendar icon to its right.

Other fields visible in the form include 'Completed' (unchecked checkbox), 'Assigned To Me:' (text box containing 'Coffey, Jennifer \*'), 'EndDate' (empty text box with a calendar icon), and 'Location' (text box containing 'CBT').

Now your supervisor will be able to see that you have not only registered for a course, it has also been completed and you have proof of completion.

## Professional Resources

The fifth button located on the *Quick Launch Bar* is the *Professional Resources* button which offers a list of professional external resources. The listed professional societies provide training materials for continuing education credit that is needed to maintain licensure. A screen shot of the *Professional Resources* is shown in **Figure 13**.

The screenshot displays the SharePoint interface for the 'Professional Resources' page. The top navigation bar includes 'SharePoint.FDA', 'my.fda.gov', 'My Sharepoint Sites', and 'Help'. The left navigation bar has 'Professional Resources' highlighted with a red box. The main content area shows a table of resources:

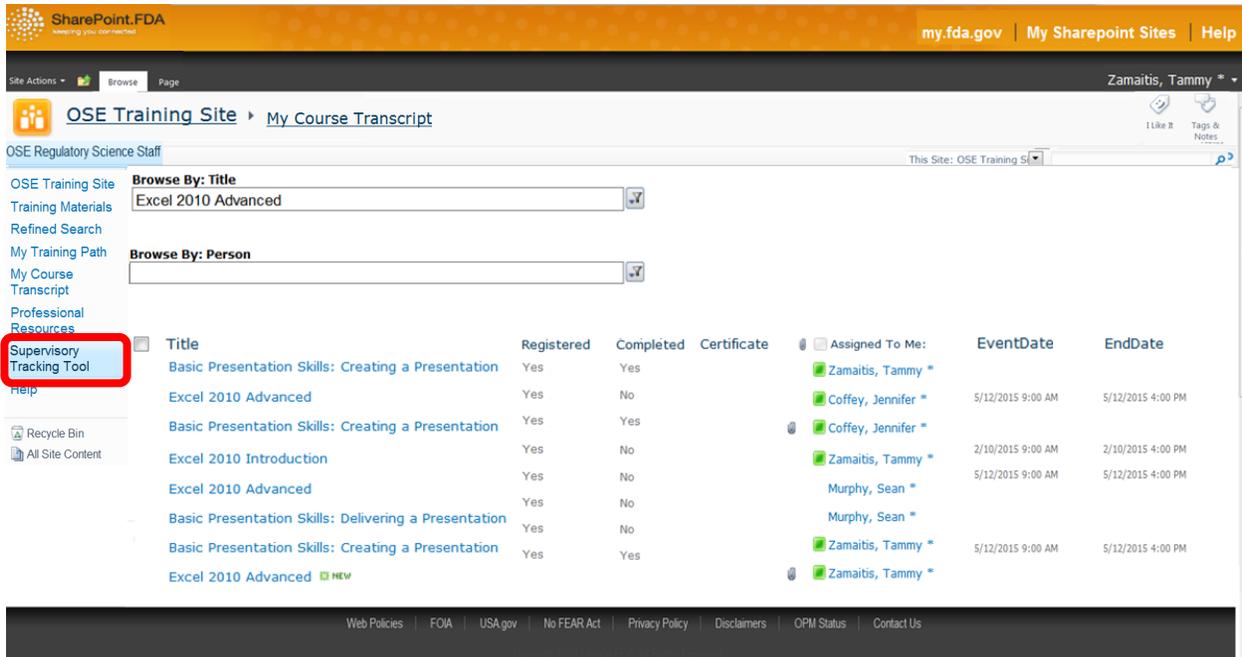
Professional Resource	Link	Classification
AMIA: American Medical Informatics Association	<a href="http://www.amia.org/">http://www.amia.org/</a>	Professional Society or Organization
APHA: American Public Health Association	<a href="http://apha.org">http://apha.org</a>	Professional Society or Organization
DIA: Drug Information Association	<a href="http://www.diahome.org">http://www.diahome.org</a>	Professional Society or Organization
FDLI: Food and Drug Law Institute	<a href="http://www.fdi.org">http://www.fdi.org</a>	Professional Society or Organization
FAI: Federal Acquisitions Institute	<a href="http://www.fai.gov">http://www.fai.gov</a>	Professional Society or Organization
ICH: International Conference on Harmonization	<a href="http://www.ich.org">http://www.ich.org</a>	Professional Society or Organization
ISPE: International Society for Pharmacoepidemiology	<a href="http://www.pharmacoepi.org">http://www.pharmacoepi.org</a>	Professional Society or Organization
RAPS: Regulatory Affairs Professional Society	<a href="http://www.raps.org">http://www.raps.org</a>	Professional Society or Organization
JAMA	<a href="http://jama.jamanetwork.com">http://jama.jamanetwork.com</a>	Professional Journal

**Figure 13: Professional Resources Page**

The Professional resource is shown along with its active link and its classification. The classification tells you whether the professional resource is a society, organization, journal etc. Clicking on the title of the professional resource, link, or classification will automatically bring you to that external site you are trying to access.

# Supervisory Tracking Tool

The *Supervisory Tracking Tool* (Figure 14) is only available to users with supervisory or executive permissions.

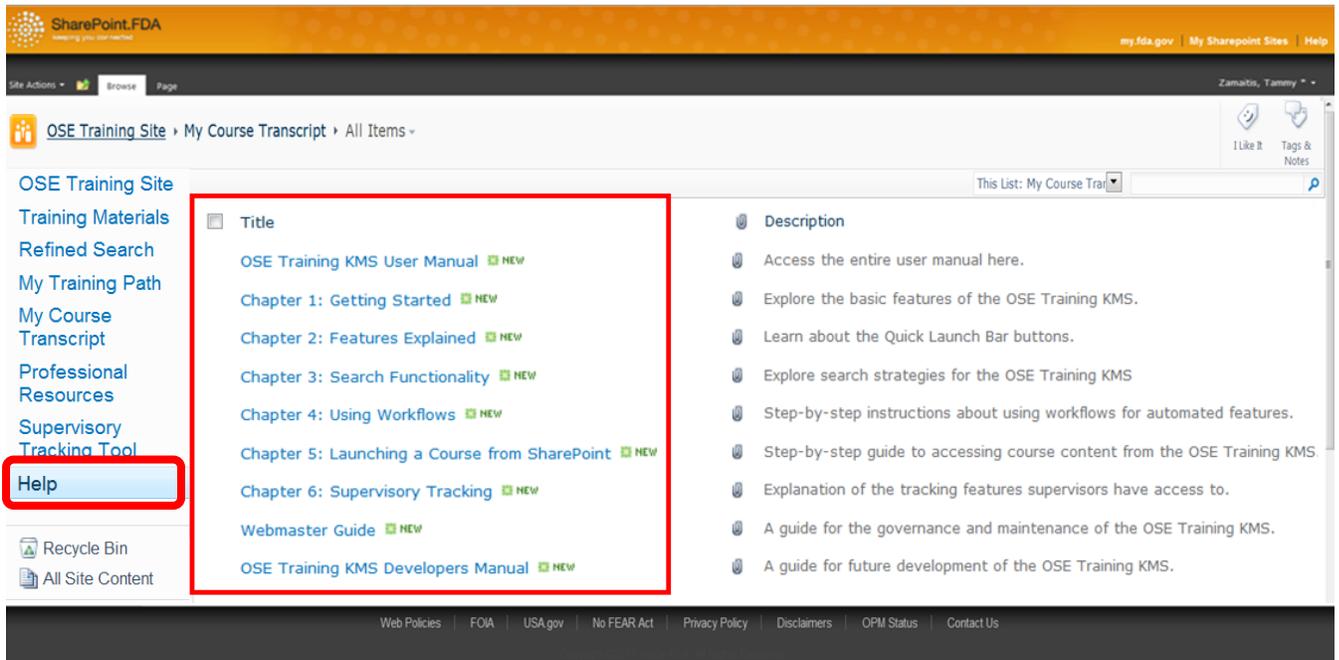


**Figure 14: Supervisory Tracking Tool Page**

The *Supervisory Tracking Tool* page shows drop down search tool bars along with the courses individuals in the supervisor's staff have taken. Supervisory permissions allow the user to access this button on the *Quick Launch Bar*. Chapter 6 provides an in-depth description of this tool and all the functionalities that it entails.

## Help

The final button on the *Quick Launch Bar* is the *Help* button. This button allows users to refresh their knowledge on how to navigate through the SharePoint Training KMS site. The *Help* page is shown in **Figure 15**.



**Figure 15: Help Page**

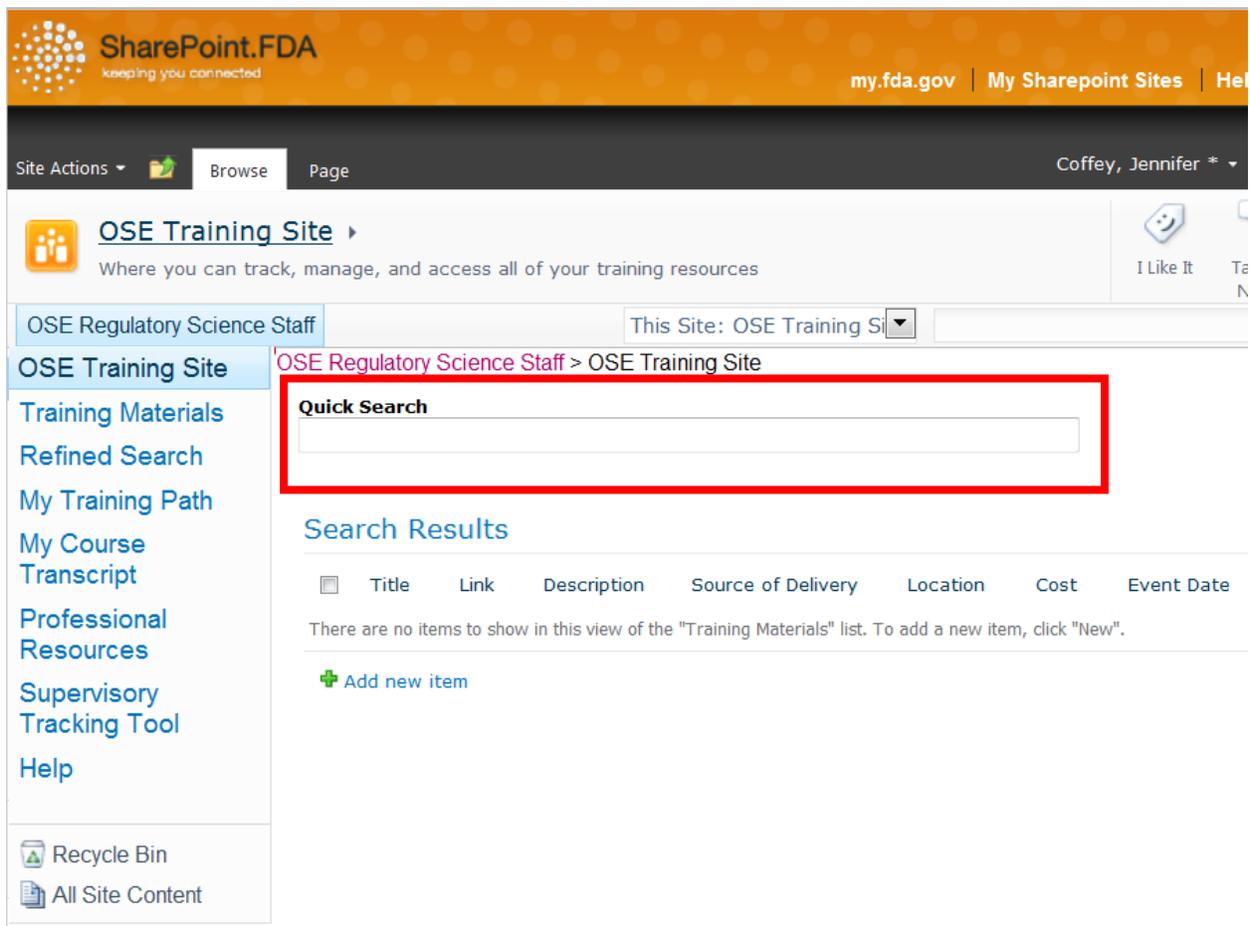
The *Help* button provides links to the user, developer, and webmaster manuals that the WPI team has developed. Each Manual is further broken down by chapter to provide quick and easy access to the specific help users are searching for. Each manual provides a concise, detailed walkthrough on how to navigate through the site and describes in length the specific functionalities of each tool on the site. Additionally, this is the page where you would access the general SharePoint User Manual.

## Chapter 3: Search Functionality

There are two ways to search for courses in the OSE Training KMS. Both will be explained in this chapter. SharePoint allows for keyword searches of content. Those searches can be narrowed down by applying filters in the more advanced search features. For the purposes of SharePoint searching it is important to spell the keyword(s) correctly, otherwise no results will be found.

### Quick Search

The *Quick Search* feature is accessible from the homepage of the OSE Training KMS. It is highlighted below in **Figure 16**.



The screenshot shows the SharePoint.FDA homepage for the OSE Training Site. The top navigation bar includes the SharePoint.FDA logo, the text "keeping you connected", and links for "my.fda.gov", "My Sharepoint Sites", and "Help". Below this is a secondary navigation bar with "Site Actions", "Browse", and "Page" tabs, and a user profile for "Coffey, Jennifer". The main content area features the "OSE Training Site" header with a description: "Where you can track, manage, and access all of your training resources". A breadcrumb trail shows "OSE Regulatory Science Staff > OSE Training Site". A red rectangle highlights the "Quick Search" input field. Below the search field is a "Search Results" section with a table header: "Title", "Link", "Description", "Source of Delivery", "Location", "Cost", and "Event Date". The results area is currently empty, displaying the message: "There are no items to show in this view of the 'Training Materials' list. To add a new item, click 'New'." and a green plus icon with the text "Add new item". A left-hand navigation menu lists various site features like "Training Materials", "Refined Search", "My Training Path", "My Course Transcript", "Professional Resources", "Supervisory Tracking Tool", and "Help". At the bottom of the menu are "Recycle Bin" and "All Site Content" options.

Entering a search term in the *Quick Search* box will return results directly below the search box, while still on the homepage. This is shown below in **Figure 17**.

The screenshot shows the SharePoint.FDA OSE Training Site interface. The search bar contains the term 'excel', and a table of search results is displayed below it. The results table has columns for Title, Link, Description, Source of Delivery, Location, Cost, Event Date, and End Date. Five results are shown, all related to Excel 2010 training courses.

Title	Link	Description	Source of Delivery	Location	Cost	Event Date	End Date
Excel 2010 Advanced	Register Now	This course surveys advanced features of Excel 2010.	FDA-OIM		\$100.00	5/12/2015 9:00 AM	5/12/2015
Excel 2010 Intermediate	Register Now	Build intermediate skills in Excel 2010.	FDA-OIM		\$100.00	3/24/2015 9:00 AM	3/24/2015
Excel 2010 Introduction	Register Now	Introductory course to features in Excel 2010.	FDA-OIM		\$100.00	2/10/2015 9:00 AM	2/10/2015
Getting Started with Excel 2010	Launch Course Content	Get started with the basics of Excel 2010	Online	CBT	\$0.00		
Manipulating data in	Launch Course	Learn	Online	CBT	\$0.00		

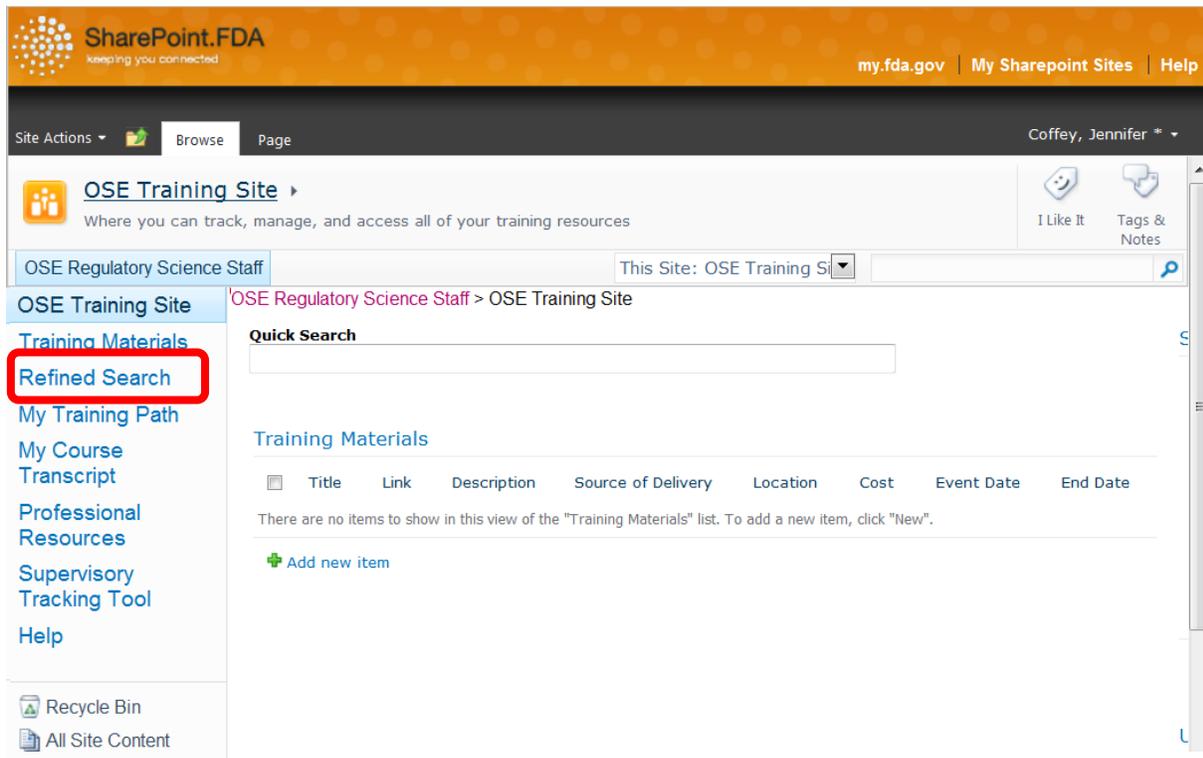
Directly from each search result you can register or launch course content, as well as add the course to your *Course Transcript* or *Training Path* or send an *Outlook Invite*. Each of the italicized workflows are explained in the “Using Workflows” chapter of this manual.

The next step in training is to register for seminars or launch course content for computer based training.

Follow the steps in Chapter 5 to directly access your courses.

## Refined Search

A more refined search can be done using the *Refined Search* button from the *Quick Launch Bar*, shown below in **Figure 18**.



Selecting the *Refined Search* button will bring you to the page featured below in **Figure 19**.

SharePoint.FDA  
keeping you connected

my.fda.gov | My Sharepoint Sites | He

Site Actions | Browse | Page | Coffey, Jennifer

OSE Training Site | SearchTrainingMaterials

Where you can track, manage, and access all of your training resources

OSE Regulatory Science Staff | This Site: OSE Training Site

[Navigate Back](#)  
[Return to OSE Training Site](#)

**Search**

**Refine Search**  
Use the dropdowns to further refine your search results

**Refine Search By: Role**

**Refine Search By: Category**

**Refine Search By: Group**

**Refine Search By: Classification**

**Refine Search By: Source of Delivery**

**Refine Search By: Location**

**Refine Search By: Cost**

**Training Materials**

Title	Link	Description	Source of Delivery	Event
Basic Presentation Skills: Creating a Presentation	Launch Course Content	This course outlines basic presentation creation.	Online	
Basic Presentation Skills: Delivering a Presentation	Launch Course Content	This course examines presentation delivery best practices.	Online	
Basic Presentation Skills: Planning a Presentation	Launch Course Content	This course helps in planning a	Online	
Excel 2010 Advanced	Register Now	This course surveys advanced features of Excel 2010.	FDA-OIM	5/12/
Excel 2010 Intermediate	Register Now	Build intermediate skills in Excel 2010.	FDA-OIM	3/24/

**Figure 19** Shows the expanded view of the *Refined Search Page*. Searches can be narrowed through each of the filters emphasized above with arrows.

## Chapter 4: Add Courses to My Course Transcript, My Training Path and Send an Outlook Invite

Workflows are the way that SharePoint accomplishes tasks behind-the-scenes. For the OSE Training KMS, workflows allow a user to add courses to *My Training Path* and *My Course Transcript* as well as generate Outlook invites. Instead of manually entering a course into either of these lists, a few clicks to complete the work flow can do it automatically.

### Add a Course to *My Training Path*

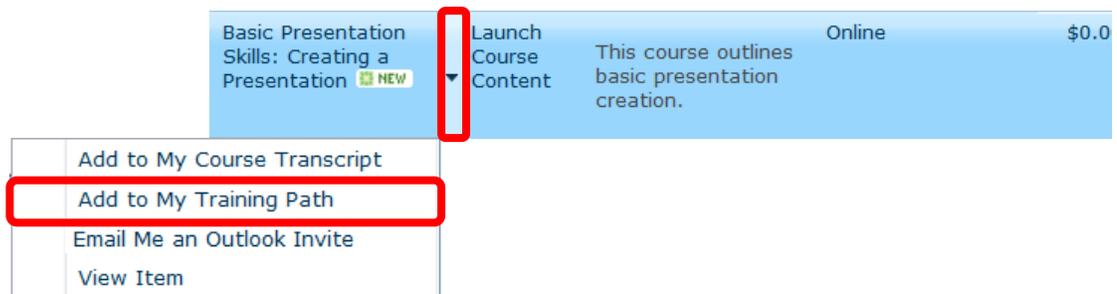
**STEP 1:** Find and select a training course of interest that you would like to take at a later time. This can be accomplished with various search methods, explained in later chapters.

Basic Presentation Skills: Creating a Presentation	Launch Course Content	This course outlines basic presentation creation.	Online	\$0.00
--	-----------------------	---	--------	--------

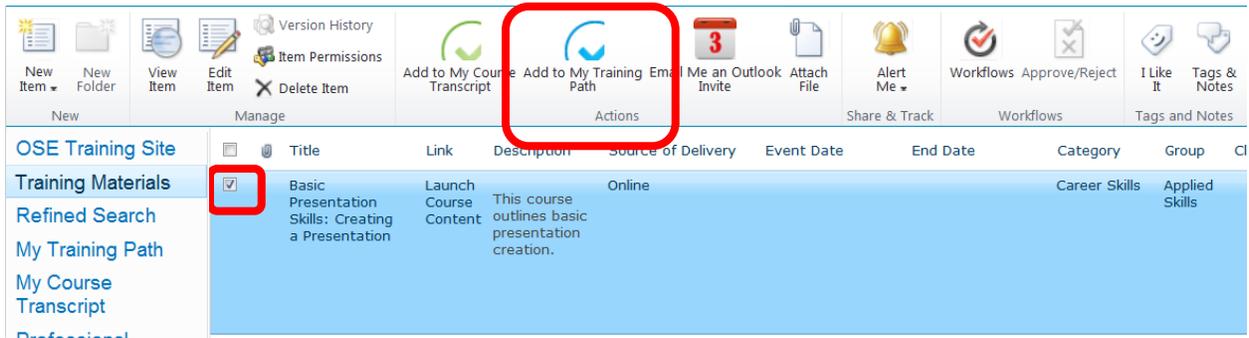
From a list of courses, this is the one to add to *My Training Path*. Click anywhere on the course entry to highlight it in blue.

**STEP 2:** Use menus to begin workflow that will add the course to *My Training Path*.

There are two ways to begin this workflow:

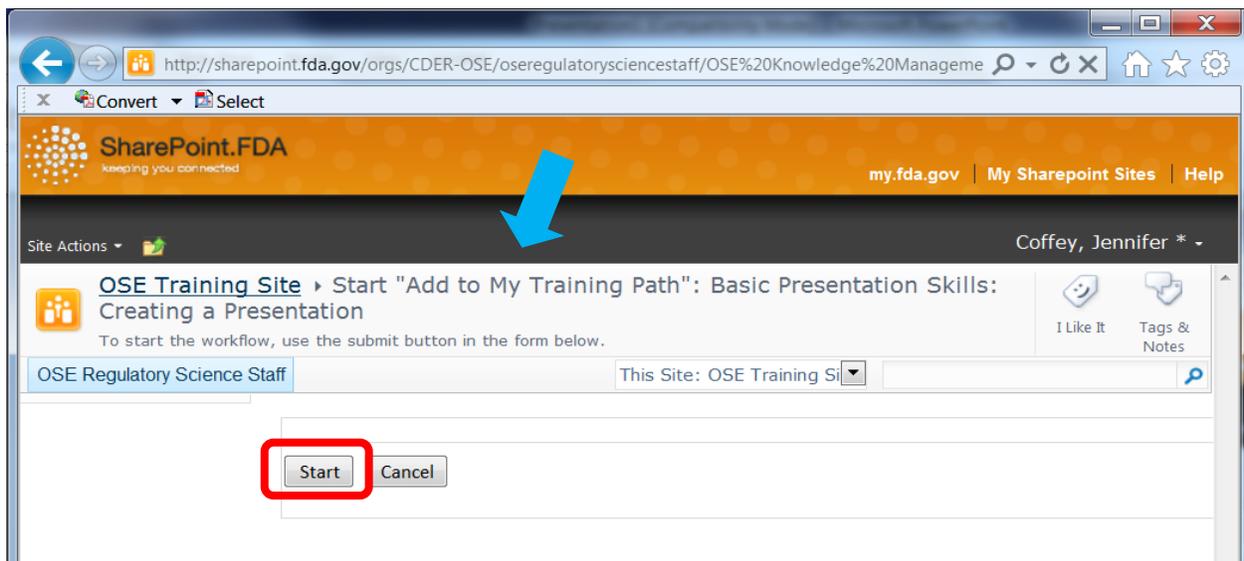


**Figure 2:** Shows the first way to begin a workflow. Select the drop-down arrow and then click “Add to My Training Path”



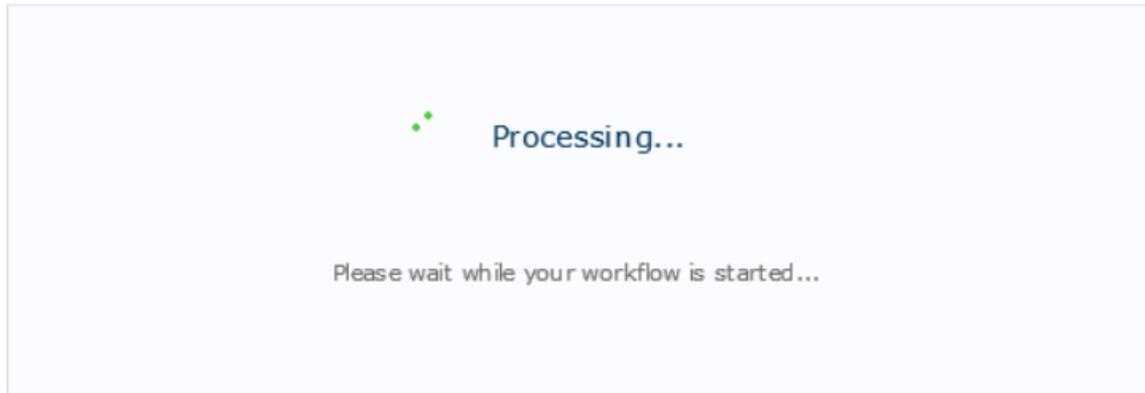
**Figure 20:** Shows another method of adding a course to *My Training Path*. Once the course is selected and a check appears in the box to the left of the title, the ribbon bar appears. Simply select the “Add to My Training Path” button to begin the workflow.

**STEP 3:** Select “Start.” Either method of beginning the workflow will bring you to the same page, Shown below in **Figure 21**.



By selecting the “Start” button the workflow will actually begin. It is important to note that the title (near the arrow) of the page verifies what workflow you are about to begin.

**STEP 4:** Allow workflow to process.



This dialogue box will appear once you select “Start” in the previous step. The workflow will take a few seconds to process. Congratulations, now you have successfully added to a course to *My Training Path* and you will be able to come back and access this course whenever you would like.

## Add a Course to *My Course Transcript*

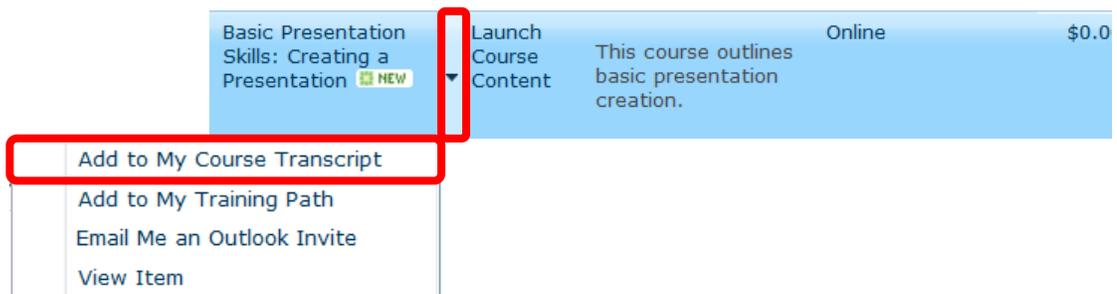
**STEP 1:** Find and select a training course of interest that you would like to register for or complete. Courses can be found in several ways, outlined in later chapters of this manual.

Basic Presentation Skills: Creating a Presentation <span>NEW</span>	Launch Course Content	This course outlines basic presentation creation.	Online	\$0.00
---	-----------------------	---	--------	--------

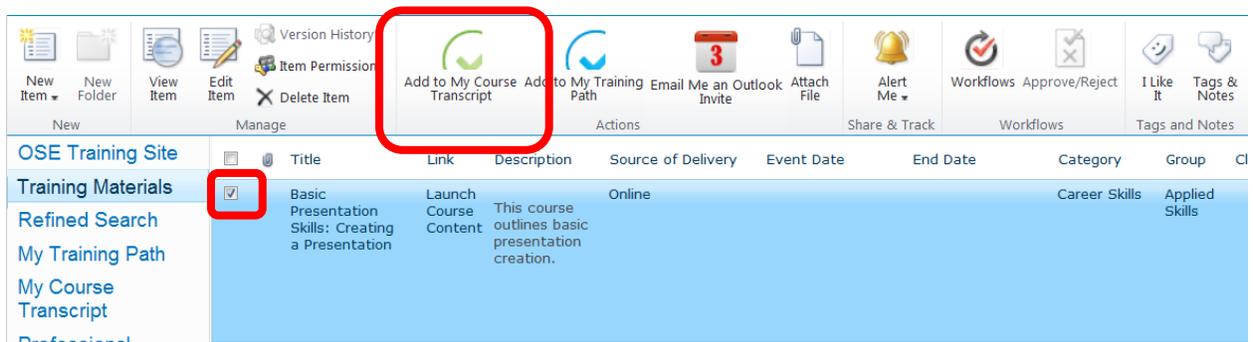
From a list of courses, this is the one to add the *My Course Transcript*. Click anywhere on the course entry to highlight it in blue.

**STEP 2:** Use menus to begin workflow that will add the course to *My Course Transcript*.

There are two ways to begin this workflow:

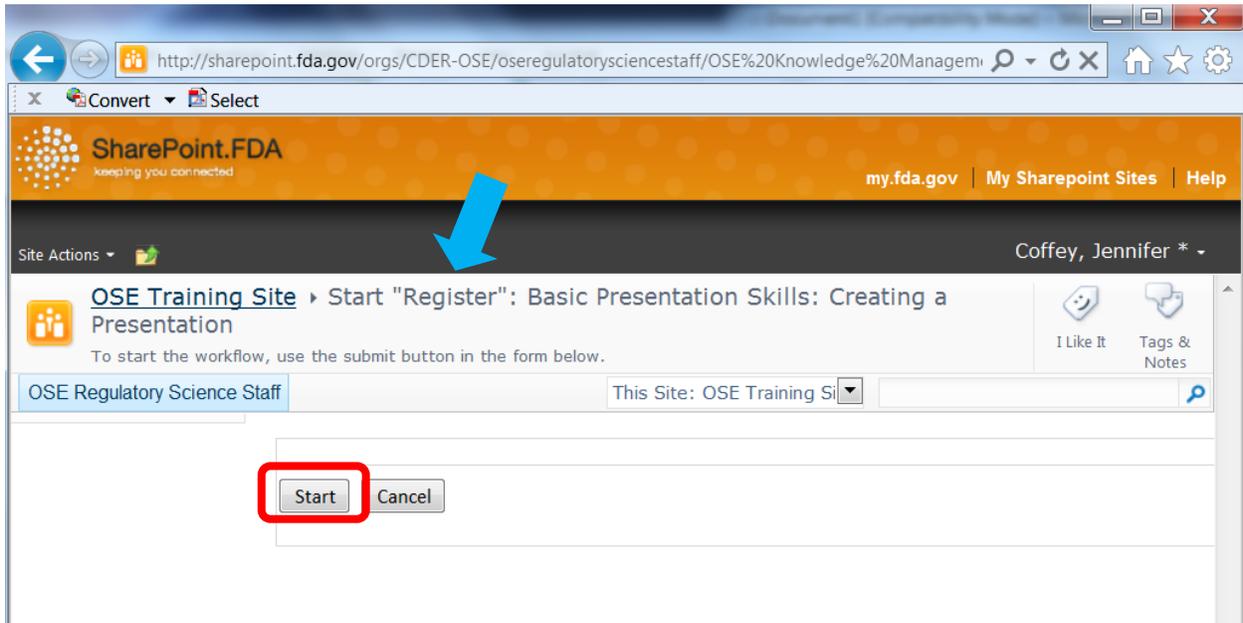


**Figure 22:** Shows the first way to begin a workflow. Select the drop-down arrow and then click “Add to My Course Transcript”.



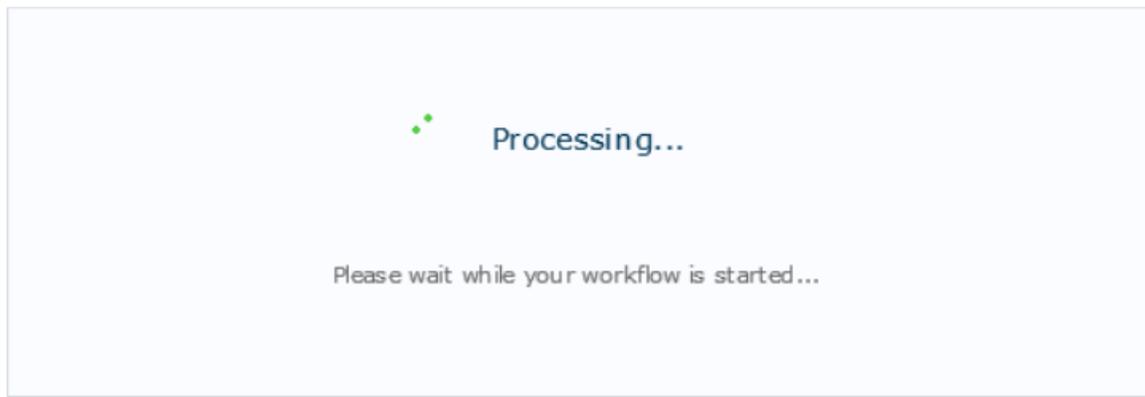
**Figure 23:** Shows another method of adding a course to *My Course Transcript*. Once the course is selected and a check appears in the box to the left of the title and the ribbon bar appears. Simply select the “Add to My Course Transcript” button to begin the workflow.

**STEP 3:** Select “Start.” Either method of beginning the workflow will bring you to the same page, Shown below in **Figure 24**.



By selecting the “Start” button the workflow will actually begin. It is important to note that the title (near the arrow) of the page verifies what workflow you are about to begin.

**STEP 4:** Allow workflow to process.



This dialogue box will appear once you select “Start” in the previous step. The workflow will take a few seconds to process.

Congratulations, now you have successfully added a course to *My Course Transcript*. You and your supervisor can now see that this course has been registered for. Once it is complete, a certificate may be uploaded in the *My Course Transcript* entry.

## Use a Workflow to *Email an Outlook Invite*

For seminars and other in person courses, you can use this SharePoint site to send yourself E-mails that prompt the creation of an Outlook invite.

**STEP 1:** Find and Select a course that is not an online course. It is important to note that in order for the Outlook function to work, a course must have a start and end date.

<input checked="" type="checkbox"/>	Excel 2010 Introduction	Register Now	Introductory course to features in Excel 2010.	FDA-OIM	\$100.00	2/10/2015 9:00 AM	2/10/2015 4:00 PM
-------------------------------------	-------------------------	--------------	--	---------	----------	-------------------	-------------------

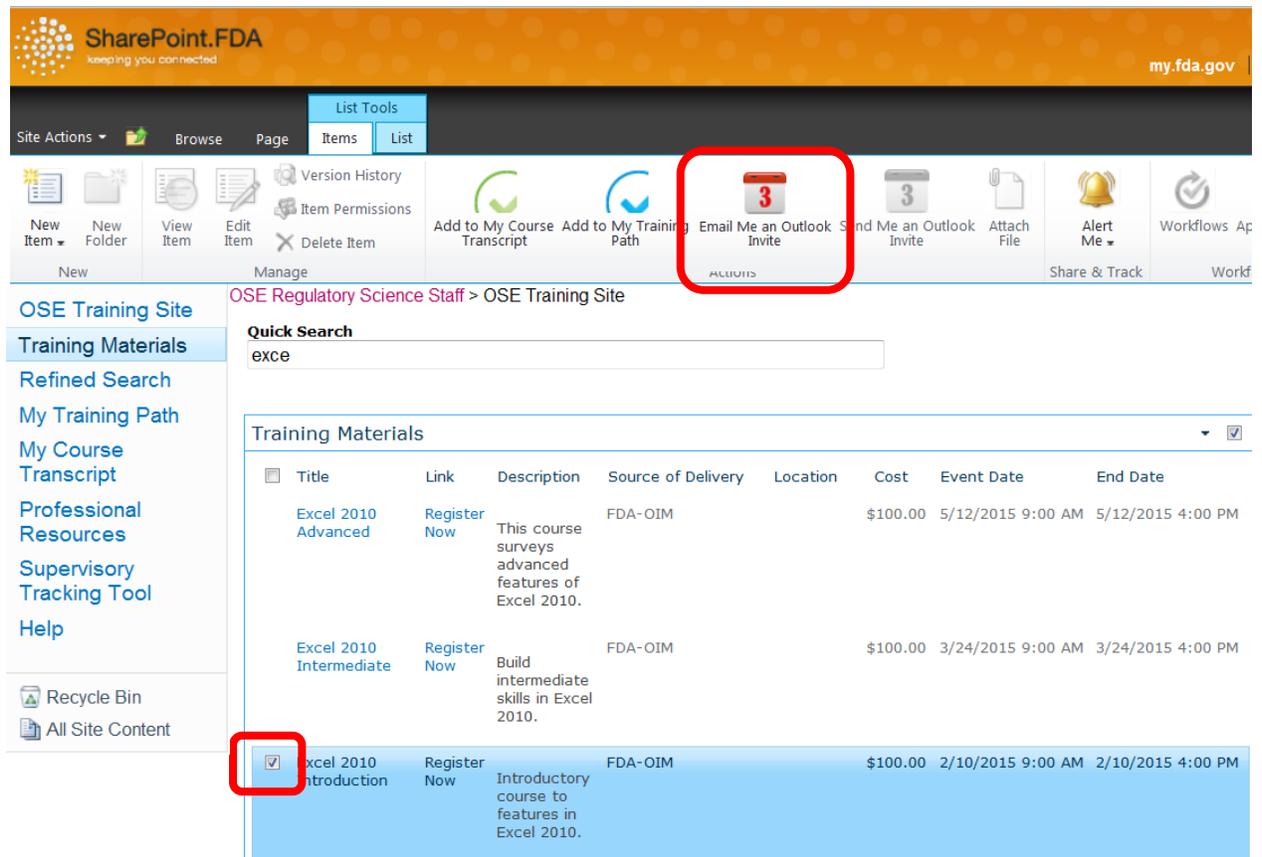
**STEP 2:** Use menus to begin workflow. There are two ways to begin the *Outlook Invite* workflow.

<input checked="" type="checkbox"/>	Excel 2010 Introduction	Register Now	Introductory course to features in Excel 2010.	FDA-OIM	\$100.00	2/10/2015 9:00 AM	2/10/2015 4:00 PM
-------------------------------------	-------------------------	--------------	--	---------	----------	-------------------	-------------------

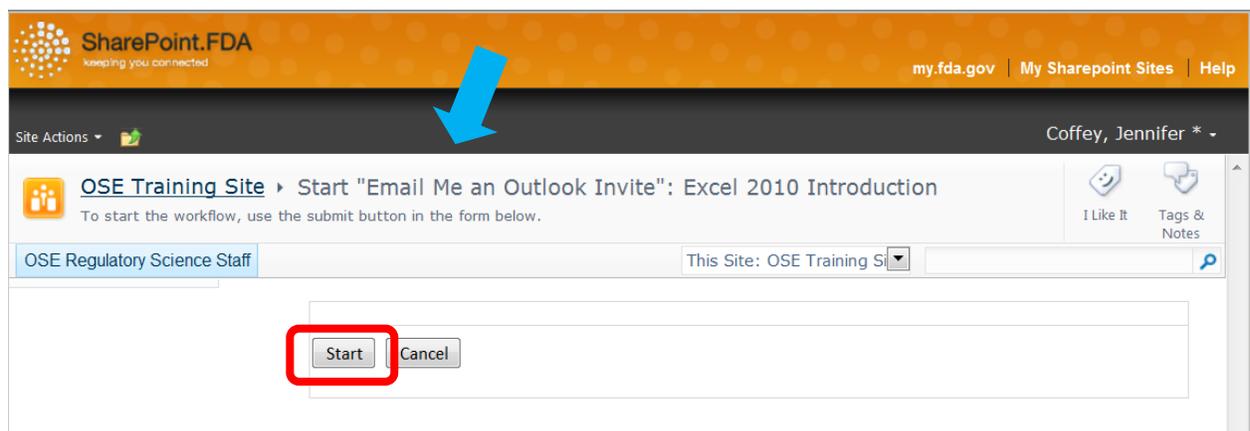
Add to My Course Transcript
Add to My Training Path
Email Me an Outlook Invite
View Item

**Figure 25** Shows the first method by selecting the arrow to show the drop down menu. Select the “Email Me an Outlook Invite” option.



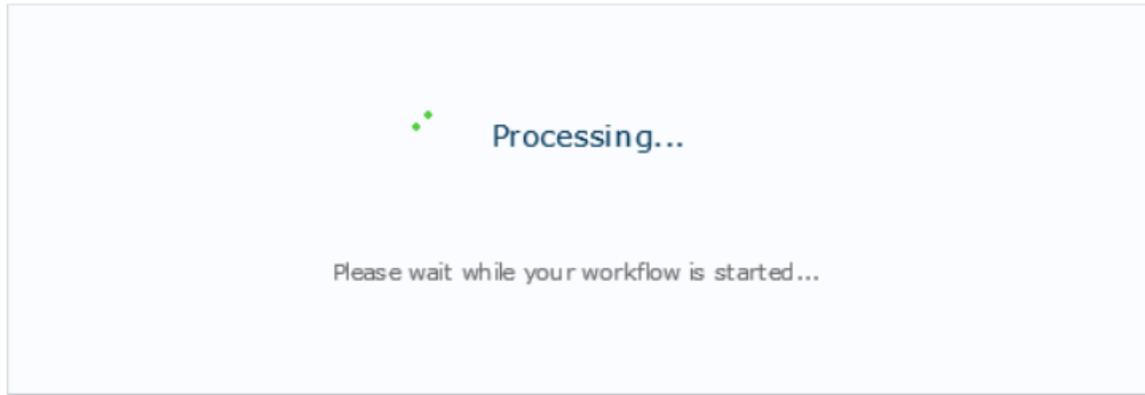
**Figure 26** Shows the second way to generate an Outlook Invite using the ribbon bar. Select the “Email Me an Outlook Invite” button shown in red to begin the workflow.

**STEP 3** Select “Start.” Either method of beginning the workflow will bring you to the same page, Shown below in **Figure 27**.



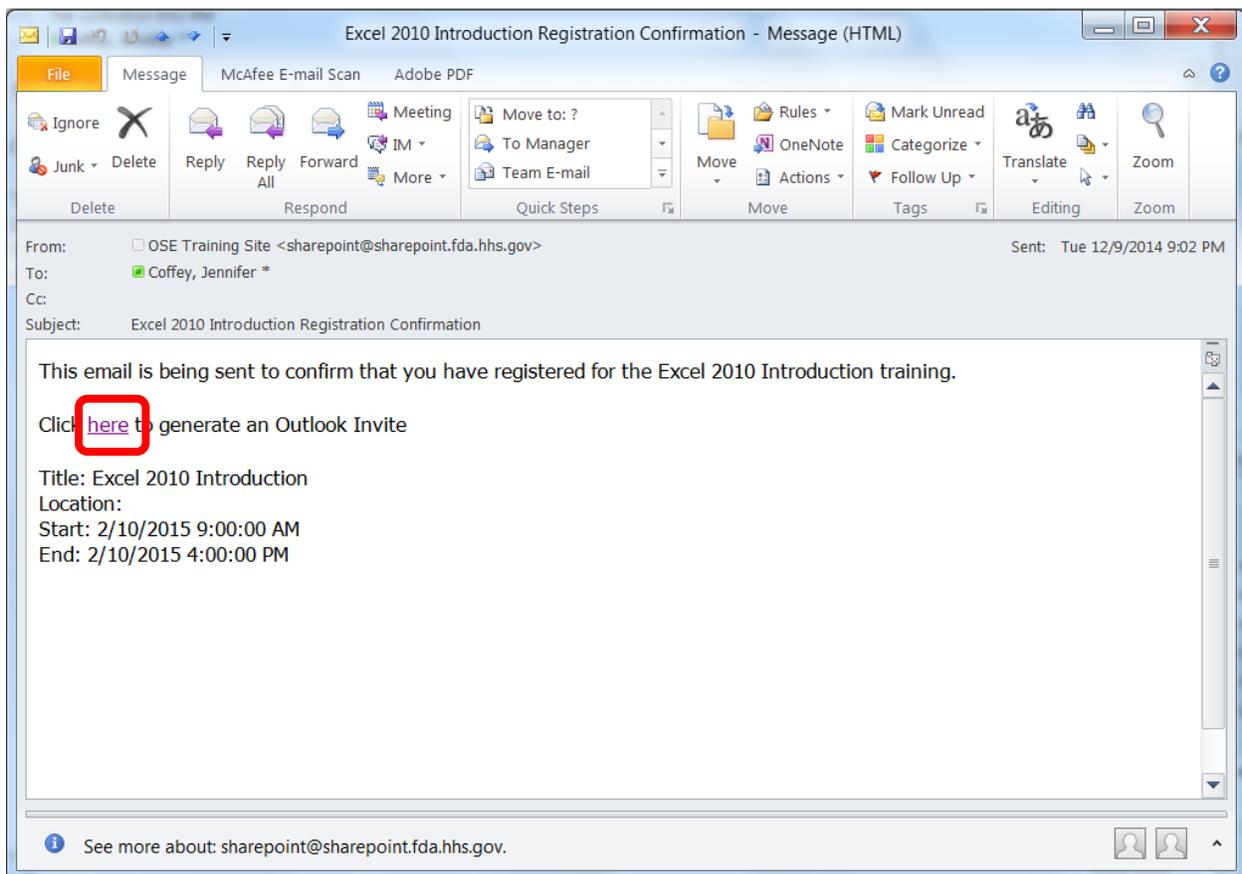
By selecting the “Start” button the workflow will actually begin. It is important to note that the title (near the arrow) of the page verifies what workflow you are about to begin.

**STEP 4:** Allow workflow to process.



This dialogue box will appear once you select “Start” in the previous step. The workflow will take a few seconds to process and send you an automated e-mail.

**STEP 5: Check Inbox.** In your Outlook inbox an e-mail will be received from “OSE Training Site.” This automated e-mail is shown below in **Figure 28**.



By selecting the link shown in the red box, an Outlook event will be created and added to your Outlook Calendar.

Congratulations, now you have successfully created an Outlook Event for a future training course. Be sure to set the reminder time with enough notice to make sure you can attend the course and don't forget to add it to *My Course Transcript* as well!

## Chapter 5: Launching a Course from SharePoint

This SharePoint site contains many direct links to training from a multitude of sources. Links can bring you directly to the HHS Learning Portal (LMS), insidefda.gov, or other training sources.

### Accessing Course Content

**STEP 1:** Find and Select a course using the search strategies discussed in Chapter 3. Either type of search will yield results with the same linking ability. When a course is selected it will be highlighted in blue as shown below in **Figure 29**.

Excel 2010 Introduction <small>NEW</small>	Register Now	Introductory course to features in Excel 2010.	FDA-OIM	\$100.00	2/10/2015 9:00 AM	2/10/2015 4:00 PM
---	--------------	--	---------	----------	-------------------	-------------------

**STEP 2:** Select “Register Now” on the highlighted course of interest shown below in **Figure 30**.

Excel 2010 Introduction <small>NEW</small>	Register Now	Introductory course to features in Excel 2010.	FDA-OIM	\$100.00	2/10/2015 9:00 AM	2/10/2015 4:00 PM
---	--------------	--	---------	----------	-------------------	-------------------

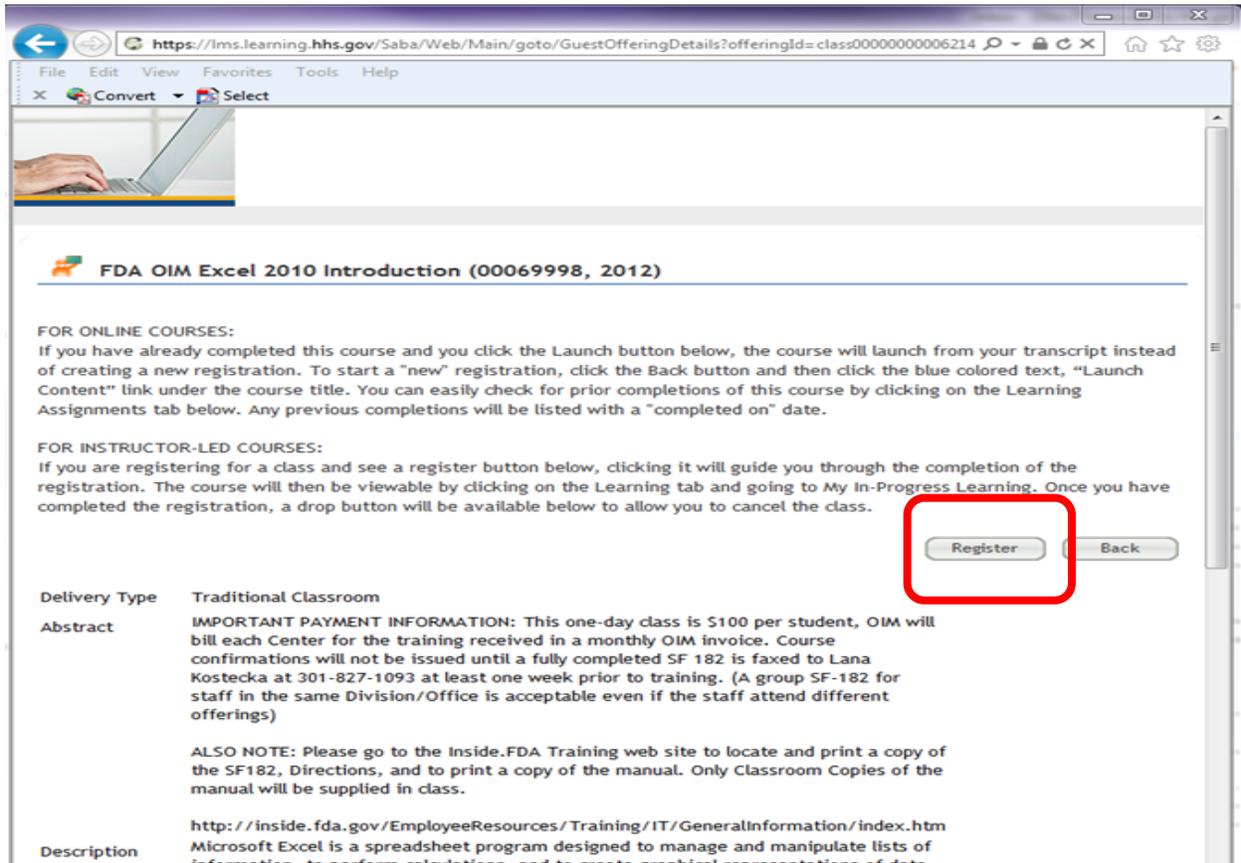
**STEP 3:** Log in to the Applicable System using your PIV card. The screen below in **Figure 31** should be familiar.

The screenshot shows the HHS.gov AMS (Access Management System) login page. The page title is "IAM@HHS" and "AMS | Access Management System". Under "Login Methods to AMS", there are three options:

- HSPD-12 Access Cards:** Includes an image of a PIV card and a "Login" button, which is highlighted with a red box. Text says "Insert your HSPD-12 Access Card in your reader and click the Login button you try to login."
- Network Credentials:** Includes fields for "Network Username" and "Network Password", and a "Login" button. Text says "Applies to: ACF, ACL, AHRQ, CDC/ATSDR, CMS, HRSA, IHS, NIH, OIG, OS, PSC, SAMHSA".
- AMS Credentials:** Includes fields for "AMS Username" and "AMS Password", and a "Login" button. Text says "First-time AMS User? Forget AMS Username? Forget AMS Password?".

At the bottom, there are links for "Need Help?", "Self-Help Web Portal", and "HHS Privacy Policy".

**STEP 4:** Launch the Course or Register for the Seminar directly in the LMS or HHS Learning Portal. Once you log in a page similar to this one will appear where you launch an online course or register for an in person seminar.



If the above process was completed for an online course, a "Launch Course" button would replace the "Register" button emphasized above with the red rectangle. A similar procedure should be followed for all courses regardless of the location of the material.

## Chapter 6: Supervisory Tracking Tool

Users with supervisory permissions can track training courses that individuals in their staff have taken. Users with executive power have similar permissions to supervisors except they can access the training transcripts of every user. Supervisors can click the *Supervisory Tracking Tool* on the *Quick Launch Menu* which will bring them to the Supervisory Tracking Tool Page. This page is shown in **Figure 32**.

The screenshot displays the SharePoint interface for the Supervisory Tracking Tool. The top navigation bar includes the SharePoint.FDA logo, the text 'my.fda.gov | My Sharepoint Sites | Help', and the user name 'Zamaitis, Tammy'. The breadcrumb trail shows 'OSE Training Site > My Course Transcript'. The main content area features two search filters: 'Browse By: Title' with a dropdown menu set to 'Excel 2010 Advanced', and 'Browse By: Person' with a dropdown menu. Below these filters is a table of training courses. The 'Supervisory Tracking Tool' link in the left-hand navigation menu is highlighted with a red box. The table columns are: Title, Registered, Completed, Certificate, Assigned To Me, EventDate, and EndDate. The table contains several rows of data, including courses like 'Basic Presentation Skills: Creating a Presentation' and 'Excel 2010 Advanced'.

Title	Registered	Completed	Certificate	Assigned To Me:	EventDate	EndDate
Basic Presentation Skills: Creating a Presentation	Yes	Yes		Zamaitis, Tammy *		
Excel 2010 Advanced	Yes	No		Coffey, Jennifer *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Basic Presentation Skills: Creating a Presentation	Yes	Yes		Coffey, Jennifer *		
Excel 2010 Introduction	Yes	No		Zamaitis, Tammy *	2/10/2015 9:00 AM	2/10/2015 4:00 PM
Excel 2010 Advanced	Yes	No		Murphy, Sean *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Basic Presentation Skills: Delivering a Presentation	Yes	No		Murphy, Sean *		
Basic Presentation Skills: Creating a Presentation	Yes	No		Zamaitis, Tammy *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Excel 2010 Advanced <span>NEW</span>	Yes	Yes		Zamaitis, Tammy *		

**Figure 32: Supervisory Tracking Tool Page**

Supervisors can either browse by the training course title or by person. Both search bars can be utilized in order to narrow down the search to an exact training course or individual. A screen shot of both search bars being used is shown below. (**Figure 33**)

SharePoint.FDA my.fda.gov | My Sharepoint Sites | Help

Site Actions Zamaitis, Tammy \* ▾

[New Item ▾](#) [New Folder](#) [View Item](#) [Edit Item](#) [Delete Item](#) [Version History](#) [Item Permissions](#) [Attach File](#) [Alert Me ▾](#) [Workflows](#) [Approve/Reject](#) [I Like It](#) [Tags & Notes](#)

New Manage Actions Share & Track Workflows Tags and Notes

[OSE Training Site](#) **Browse By: Title**

[Training Materials](#) **Browse By: Person**

[Refined Search](#)

[My Training Path](#)

[My Course](#)

[Transcript](#)

[Professional Resources](#)

Supervisory Tracking Tool

[Help](#)

[Recycle Bin](#)

[All Site Content](#)

Title	Registered	Completed	Certificate	Assigned To:	EventDate	EndDate
<a href="#">Excel 2010 Advanced</a>	Yes	Yes		Coffey, Jennifer *	5/12/2015 9:00 AM	5/12/2015 4:00 PM

[Add new item](#)

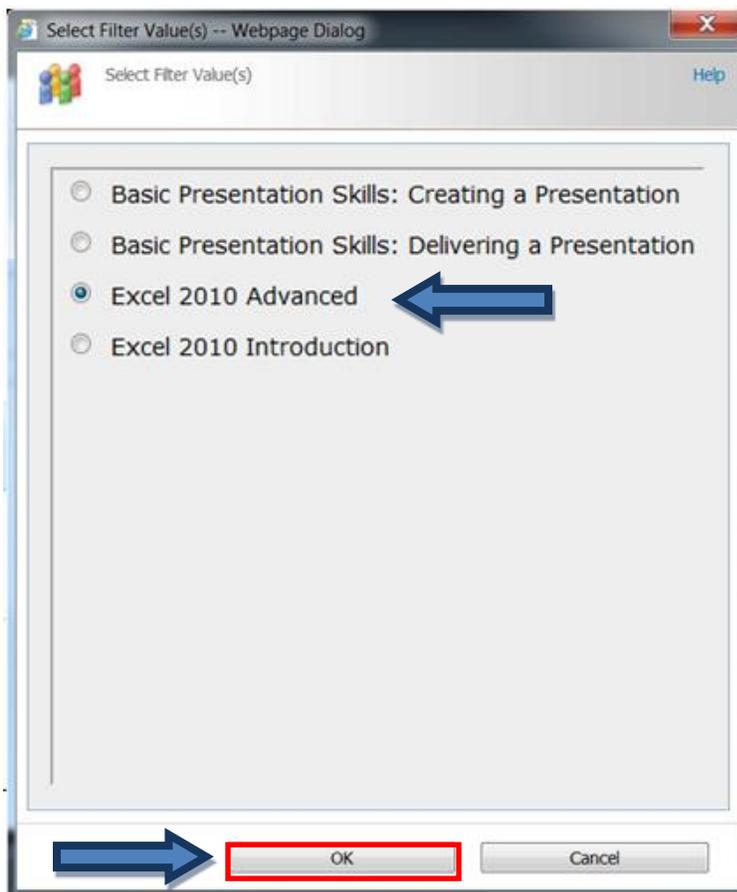
[Web Policies](#) | [FOIA](#) | [USA.gov](#) | [No FEAR Act](#) | [Privacy Policy](#) | [Disclaimers](#) | [OPM Status](#) | [Contact Us](#)

## Browsing By: Title

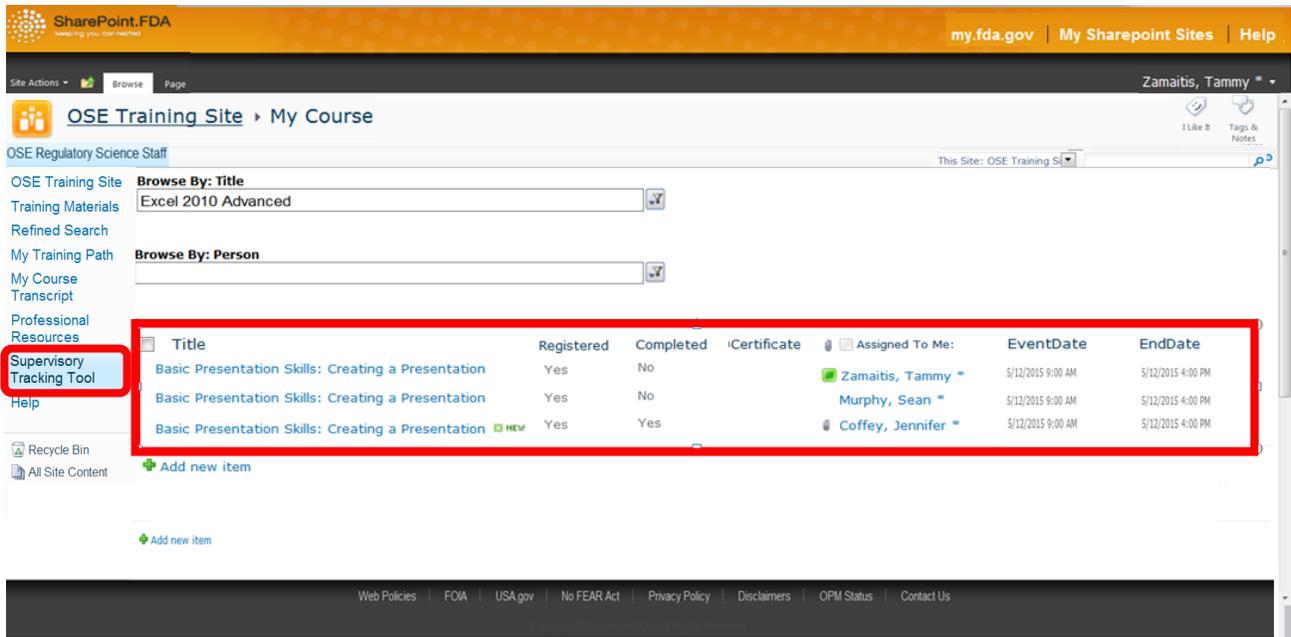
You can also browse using just one of the search browse tools. To search to see if individuals on your staff have completed a certain training course click the drop down menu located at the end of the “Browse By: Title” search bar (**Figure 34**)



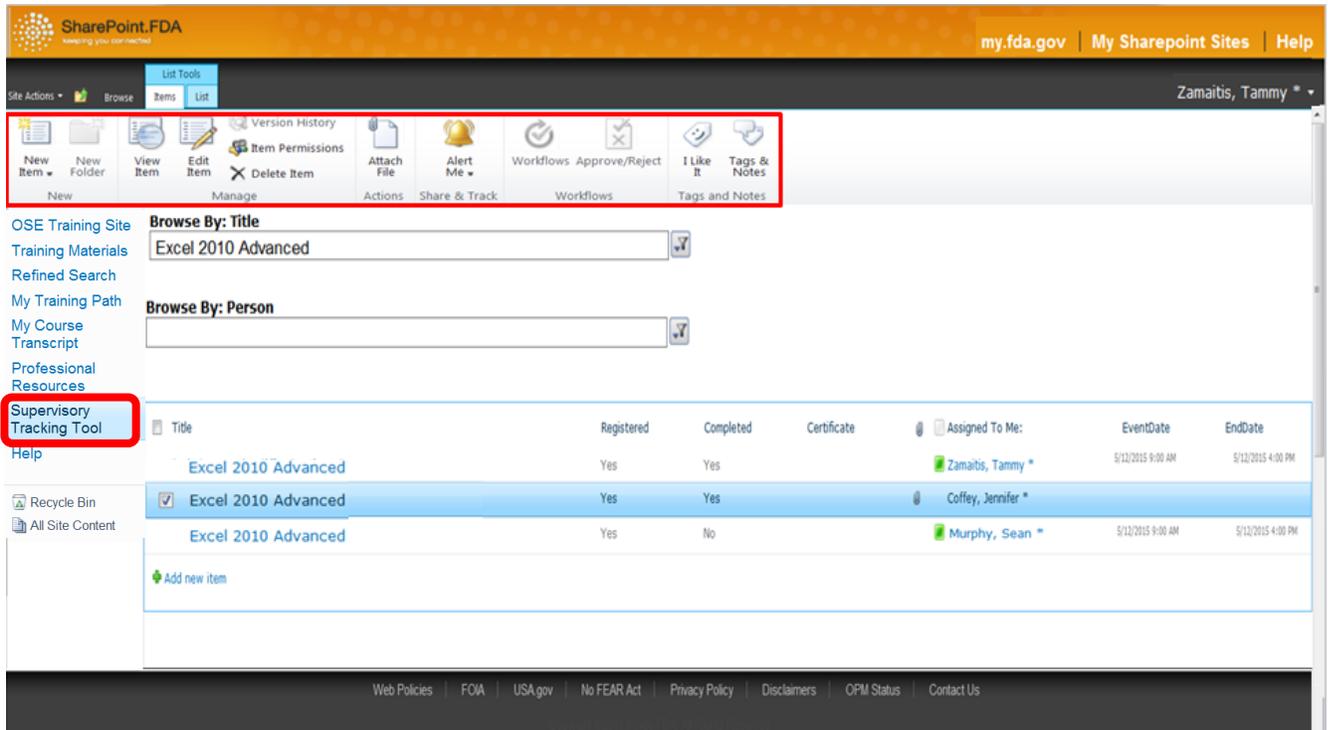
Clicking the drop down menu will bring up another screen which shows a list of training courses within the SharePoint site (**Figure 35**).



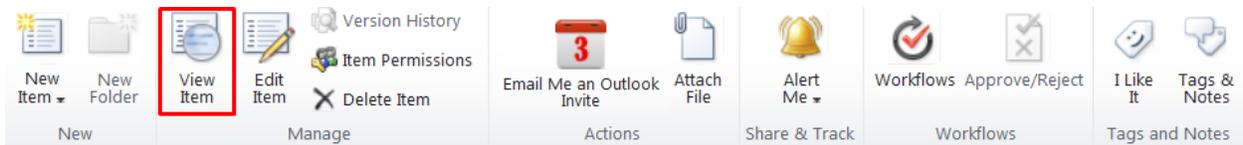
Click the training course you would like track, an example is Excel 2010 Advanced, and then click “Ok”. The search results will populate under the Browse search bars. (**Figure 36**)



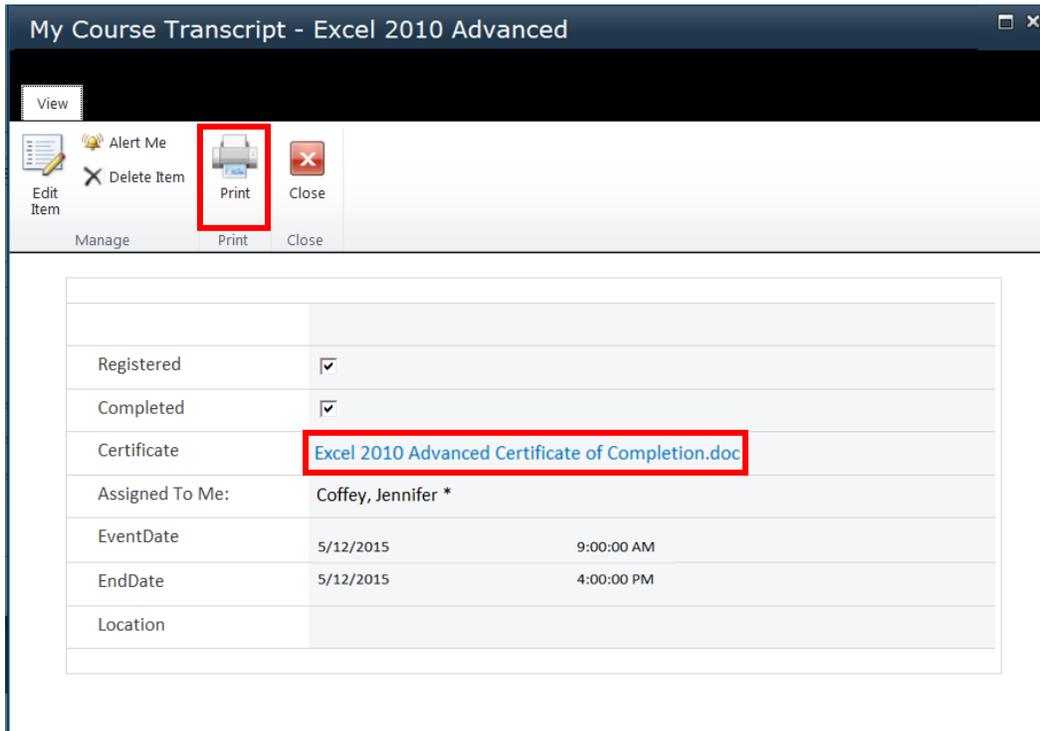
Some of the key columns show you the Title of the course, whether the individual registered for the course, if they uploaded a certificate of completion proving that they took the course, and when the courses began and ended. Clicking next to the course title will display a drop down screen menu at the top of the page (**Figure 37**)



Click the “View Item” on the drop down menu bar seen in **Figure 38**.



This will cause the ribbon bar to appear and from here you print a report of the particular training course. **(Figure 39)**



You can also click the certificate of completion the individual added in order to view that they did upload their correct course certificate. Another way to access a training course generated report is to click on the course of interest's title. This will bring you directly to the transcript page **(Figure 40)** where you can print the page and view the certificate.

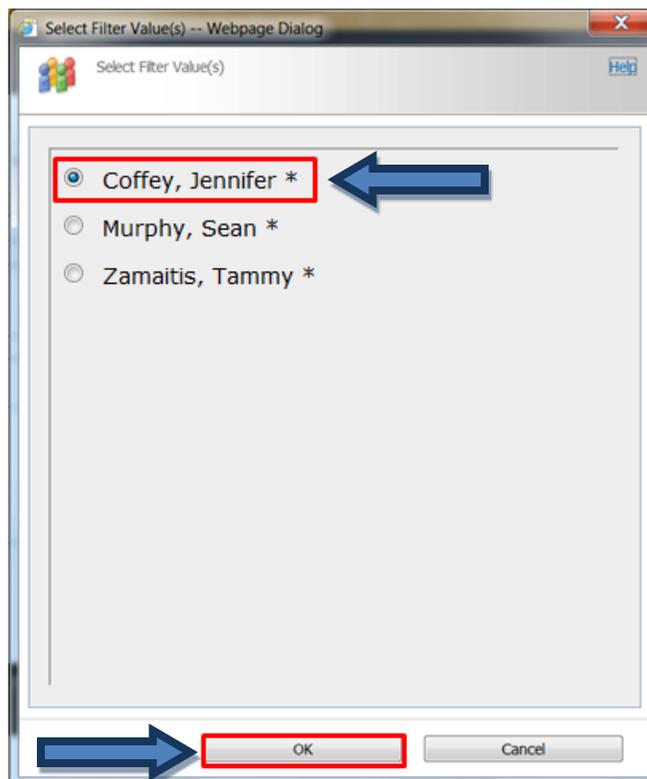
## Browse By: Person

To search to see all the training courses an individual on your staff has completed click the drop down menu located at the end of the “Browse By: Person” search bar (**Figure 41**)

### Browse By: Person



Clicking the drop down menu will bring up another screen which shows a list of individuals on your staff to choose from. (**Figure 42**)



Click the individual whose training transcript you would like to track and then click “Ok” The filtered search results for that specific individual will populate in the web part directly below the browse search bars. (**Figure 43**)

SharePoint.FDA  
my.fda.gov | My Sharepoint Sites | Help

Site Actions | Browse | Items | List Tools

Version History | Attach File | Alert Me | Workflows Approve/Reject | I Like It | Tags & Notes

OSE Training Site  
Training Materials  
Refined Search  
My Training Path  
My Course  
Transcript  
Professional Resources  
**Supervisory Tracking Tool**  
Help

Recycle Bin  
All Site Content

**Browse By: Title**

**Browse By: Person**  
Coffey, Jennifer \*

Title	Registered	Completed	Certificate	Assigned To Me:	EventDate	EndDate
Excel 2010 Advanced	Yes	Yes		Coffey, Jennifer *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Basic Presentation Skills: Creating a Presentation	Yes	Yes		Coffey, Jennifer *	5/12/2015 9:00 AM	5/12/2015 4:00 PM

Web Policies | FOIA | USA.gov | No FEAR Act | Privacy Policy | Disclaimers | OPM Status | Contact Us

You can also generate a tracking report by clicking either next to the title or on the course title as explained in the Browse By: Title section above. Congratulations! You now know how to run tracking reports on both courses and individuals!

This concludes the user manual for the OSE Training KMS. Any further questions can be directed to: [ana.pauls@fda.hhs.gov](mailto:ana.pauls@fda.hhs.gov)

## Section 2, Developer Manual



# OSE Training Knowledge Management Site Developer Guide

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## Chapter 1: Introduction

Microsoft SharePoint is the agency standard application platform for collaboration and data management and storage. This site showcases some of the useful features that SharePoint provides to users when performing tasks such as Searching, Tracking, and Scheduling training materials. The objective of this site is to provide OSE staff a one-stop shop to manage and track the mandatory and recommended training materials. Each part of the site is designed to be as intuitive and user-friendly as possible. This developer guide is designed to provide further assistance when developing or maintaining this site. It includes detailed, step-by-step instructions for various tasks that curators will have to perform.

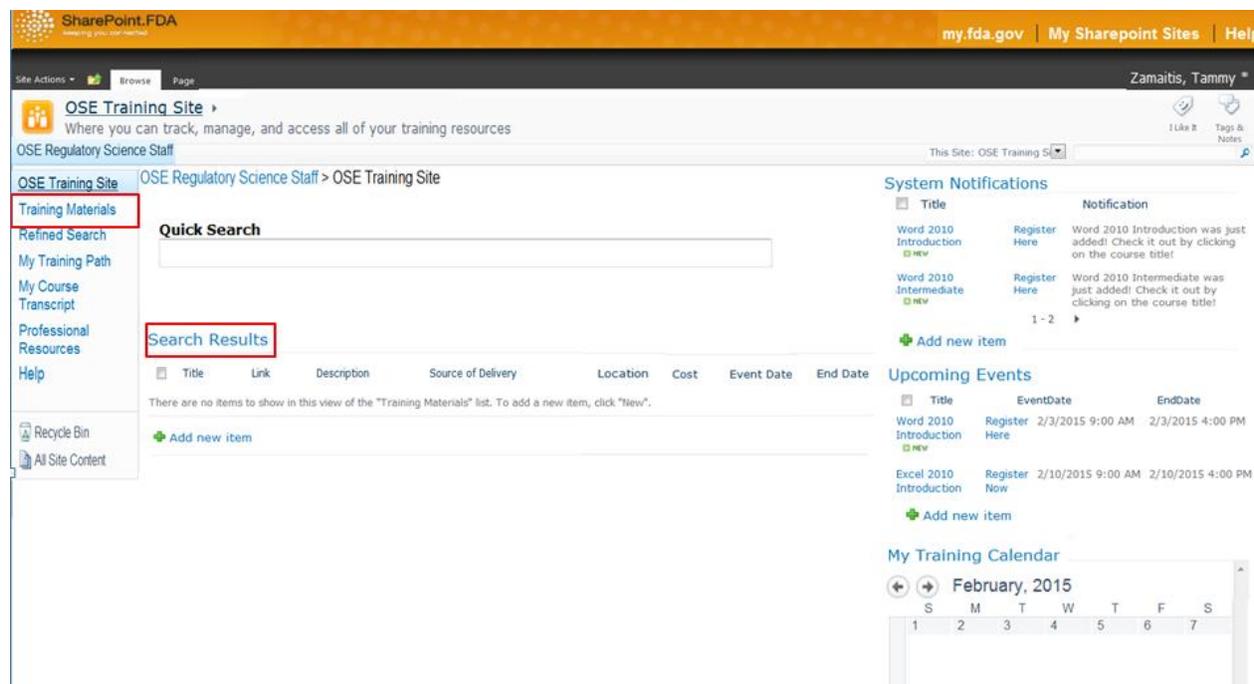
The developer guide first provides a detailed description of all site lists as well as their associated list views. It also examines the extra site web part page that was added. It also documents all list workflows and describes how they work. Then, it explains the use of custom actions with lists. The guide further describes and expands upon the custom forms that were built for specific list items. It also discusses how the permissions have been configured on the site.

Finally, there are recommendations for basic site maintenance ranging from topics such as implementing new features and migrating the site to the OSE SharePoint site

## Chapter 2: Lists

### Training Materials – All Items Features

This list functions as the course catalog for all of the training materials that are stored in this site. To access the Training Materials (All Items) list, click *Training Materials* located on the *Quick Launch Bar* that is seen in **Figure 1**.



**Figure 1: Homepage of the OSE Training KMS**

There are two ways to access the Training Materials (All Items) list the first is by clicking the *Training Materials* button located on the *Quick Launch Bar*. This is shown in the purple box. The second way to access the Training Materials (All Items) list is by clicking the Search Results link located directly below the Quick Search bar. This is denoted by the red box.

The “All Items” button is part of the Bread Crumb Navigation and clicking the arrow next to “All Items” will allow you to filter search results based on categories. In specific, the “All Items” button shows the default view for this list and contains the greatest number of visible columns to provide as much information about the training materials as possible as seen in **Figure 2**.

Title	Link	Description	Source of Delivery	Event Date	End Date	Category	Group	Classification	Role	Cost	Location
Basic Presentation Skills: Creating a Presentation	Launch Course Content	This course outlines basic presentation creation.	Online			Career Skills	Applied Skills		Reviewer, Safety Evaluator, Supervisor, Trainer, Project Manager, Policy / Research	\$0.00	CBT
Basic Presentation Skills: Delivering a Presentation	Launch Course Content	This course examines presentation delivery best practices.	Online			Career Skills	Applied Skills		Reviewer, Safety Evaluator, Supervisor, Project Manager, Trainer, Policy /	\$0.00	CBT

**Figure 2: Training Materials – All Items View**

The above figure is the All Items view of the Training Materials list.

The visible columns include: Title, Link, Description, Source of Delivery, Event Date, End Date, Category, Group, Classification, Role, Cost, and Location (in that order from left to right).

Shown below are the hidden columns (**Figure 3**) that work behind the scene.

Column (click to edit)	Type	Used in
Category	Choice	Item
Classification	Choice	Item
Cost	Currency	Item
Description	Multiple lines of text	Item
End Date	Date and Time	Item
EndDate	Calculated (calculation based on other columns)	
Event Date	Date and Time	Item
EventDate	Calculated (calculation based on other columns)	
Group	Choice	Item
Link	Hyperlink or Picture	Item
Location	Single line of text	Item
Notification	Calculated (calculation based on other columns)	Item
Number of Sign-Ups	Number	Item
Role	Choice	Item
SomeCalculation	Calculated (calculation based on other columns)	Item
Source of Delivery	Choice	Item
Title	Single line of text	Item
Created By	Person or Group	
Modified By	Person or Group	

**Figure 3: Training Materials Hidden List Columns**

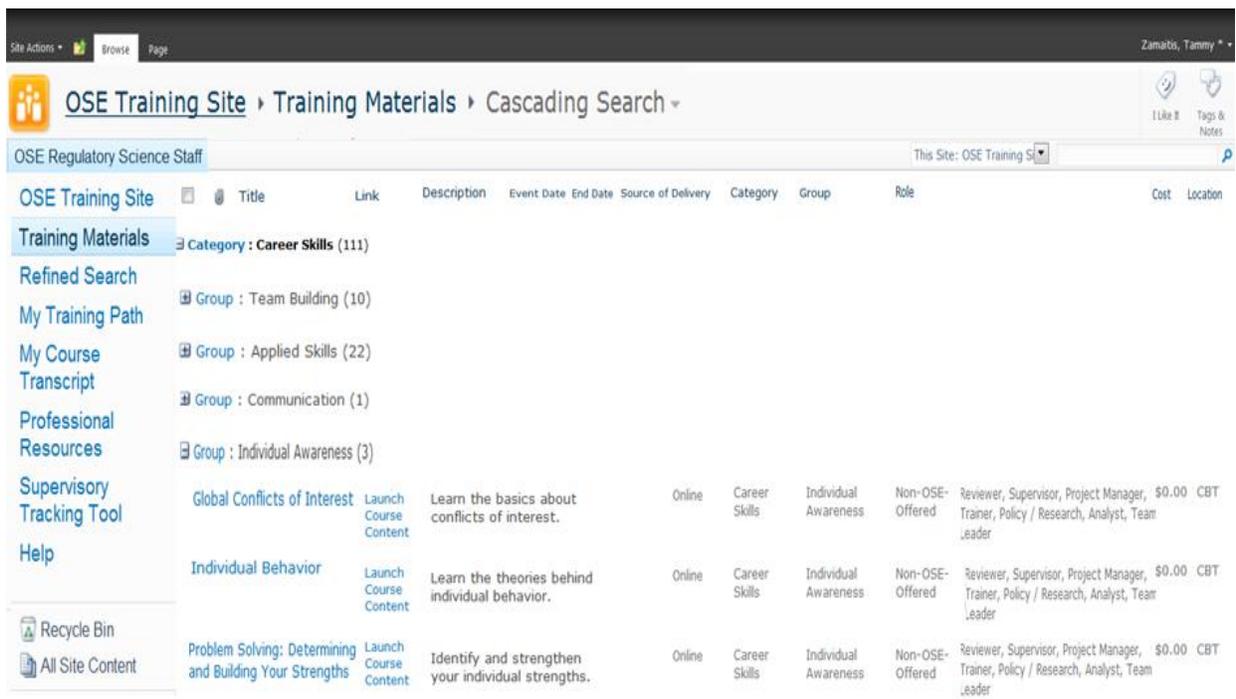
The hidden columns include a few additional columns that are not seen in the viewing list:

EndDate, EventDate, Number of Sign-ups, and SomeCalculation. The above figure shows the names and types of all the columns for the list. Notice that all of the columns are used in “Item”

except for EndDate and EventDate. This is important for the “Email Me an Outlook Invite” workflow which will be described later in Chapter 4: Workflows (Email Me an Outlook Invite).

## Training Materials – Cascading Search

This view contains all of the same list items and columns as the All Items view. The columns are even in the same order. The key difference is that it takes advantage of SharePoint’s “Group By” and “Sort” functionality. The list is first grouped by the values of the column Category and then it is grouped by the values of the Group column. From there, it is sorted by the Classification column. The “Group By” and “Sort” button functionality can be accessed by modifying the view in the List Tools in the Ribbon Tabs.



**Figure 1: Training Materials -- Cascading Search View**

The figure above shows the Cascading Search view for the Training Materials list.

The view can be configured to group and sort list items by opening the “List” tab inside of the “List Tools” tab. From there, the developer can select “Modify View”. The developer can also ensure that the correct view is selected by checking the “Current View:” value. This Process is outlined in **Figure 5** on the following page.



**Figure 2: Ribbon Tab Showing How to Modify a View**

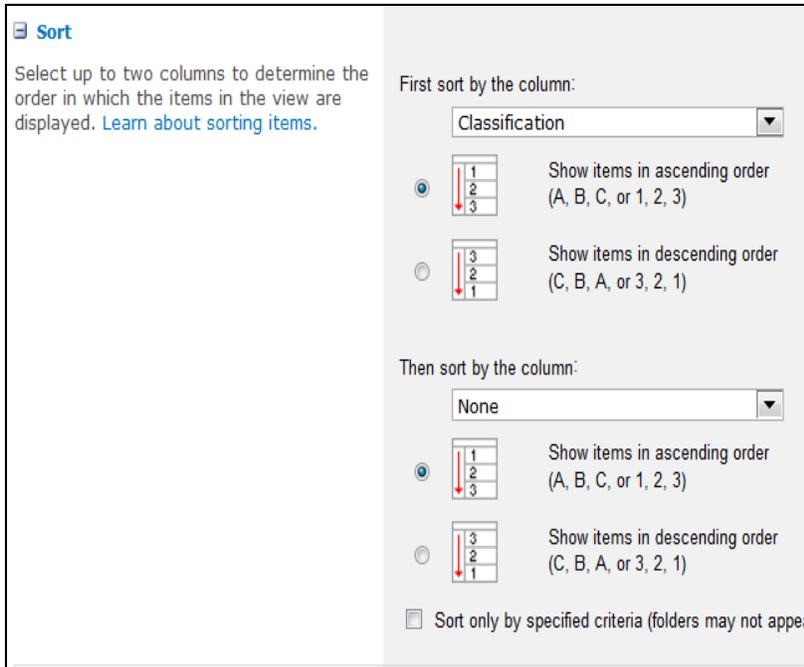
The figure outlines how to modify the current view.

In modify view window, please follow the steps:

1. Navigate to Modify window
2. Click to expand Sort and Group by option
3. In the Cascading Search group view
  - a. Select the Group by Category Column
  - b. Select Group By column

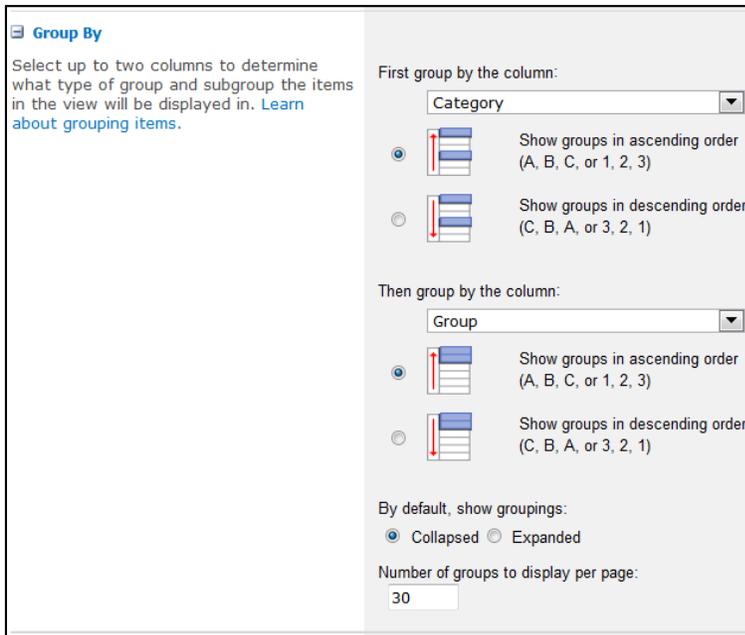
Click on Sort by Classification Column

This process is outlined in **Figure 6** and **Figure 7** on the following page.



**Figure 3: Sorting List Items in Cascading Search**

This figure details the settings for how the Cascading Search list items are sorted.



**Figure 4: Grouping List Items in Cascading Search**

This figure details the settings for how the Cascading Search list items are grouped.

## Training Materials – Home Site

This list view contains all of the list items from the All Items view, but it has fewer columns. This view was created for the site Home Page to contain the search results from the *Quick Search* text filter. The only difference between the Home Site view and the All Items view is that the Home Site view has only the visible columns: Title, Link, Description, Source of Delivery, Location, Cost, Event Date, and End Date (in this order from left to right). There are fewer columns, so that it is easier to view the other Web Parts on the site Home Page. Although the Home Page uses the Home Site view, if you click on “Search Results” on the Home Page Web Part title, the link will go to the All Items view. The Home Site view on the Home Page can be seen in **Figure 8** below.

The screenshot shows the OSE Training Site interface. The main content area is titled 'Search Results' and contains a table with the following data:

Title	Link	Description	Source of Delivery	Location	Cost	Event Date	End Date
Excel 2010 Advanced	Register Now	This course surveys advanced features of Excel 2010.	FDA-OIM		\$100.00	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Excel 2010 Intermediate	Register Now	Build intermediate skills in Excel 2010.	FDA-OIM		\$100.00	3/24/2015 9:00 AM	3/24/2015 4:00 PM
Excel 2010 Introduction	Register Now	Introductory course to features in	FDA-OIM		\$100.00	2/10/2015 9:00 AM	2/10/2015 4:00 PM

Other visible elements include a 'Quick Search' box, 'System Notifications' (e.g., 'Word 2010 Introduction was just added!'), 'Upcoming Events' (e.g., 'Word 2010 Introduction' on 2/3/2015), and a 'My Training Calendar' for February 2015.

**Figure 5: Training Materials -- Home Site (“Search Results”) on the Home Page**

The above figure shows the Home Site view of Training Materials. The red box surrounding “Search Results” indicates its location on the Home Page.

**Figure 9** provides a better look at the list entries in the Home Site view on the following page.

## Search Results

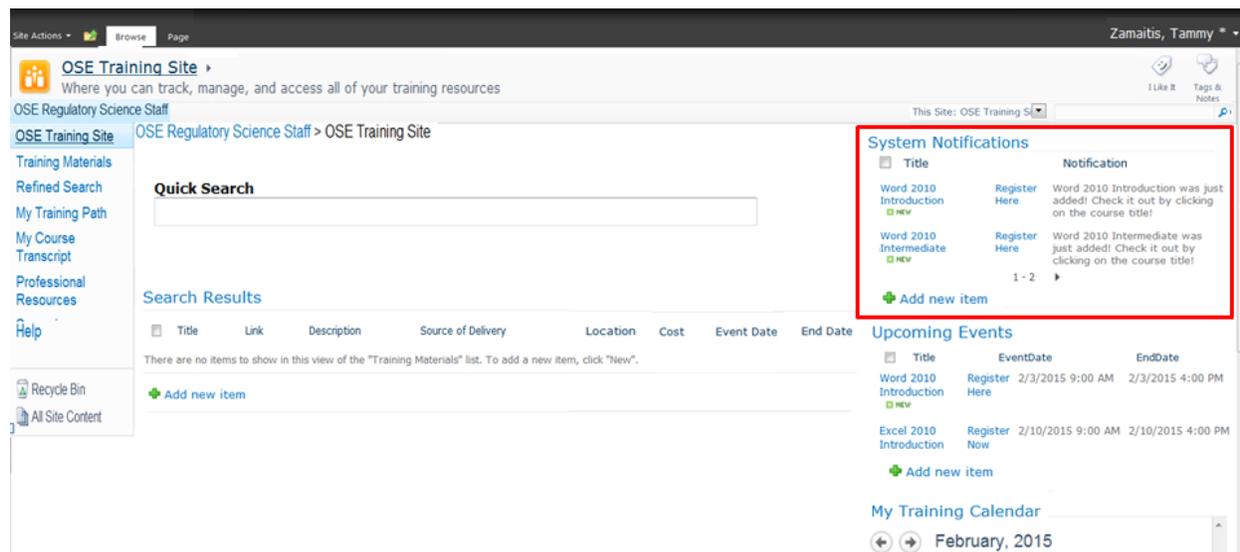
<input type="checkbox"/>	Title	Link	Description	Source of Delivery	Location	Cost	Event Date	End Date
<input type="checkbox"/>	<a href="#">Excel 2010 Advanced</a>	<a href="#">Register Now</a>	This course surveys advanced features of Excel 2010.	FDA-OIM		\$100.00	5/12/2015 9:00 AM	5/12/2015 4:00 PM
<input type="checkbox"/>	<a href="#">Excel 2010 Intermediate</a>	<a href="#">Register Now</a>	Build intermediate skills in Excel 2010.	FDA-OIM		\$100.00	3/24/2015 9:00 AM	3/24/2015 4:00 PM
<input type="checkbox"/>	<a href="#">Excel 2010 Introduction</a>	<a href="#">Register Now</a>	Introductory course to features in	FDA-OIM		\$100.00	2/10/2015 9:00 AM	2/10/2015 4:00 PM

**Figure 6: Training Materials -- Home Site View (“Search Results”)**

The above figure shows the Home Site view of Training Materials. Notice how it has fewer visible columns than the All Items view and is therefore takes up less space.

## Training Materials – System Notifications

This list view only uses two visible columns. These columns are Title and Notification. This list view takes advantage of the calculated columns with the Notifications column. It also uses the “Filter” functionality to filter list entries based on whether they were created in the past seven days. This view is used in the site Home Page to notify employees of newly-added training as seen in **Figure 10**. Lastly, it limits the number of visible list entries to allow a user to view only two entries at a time.



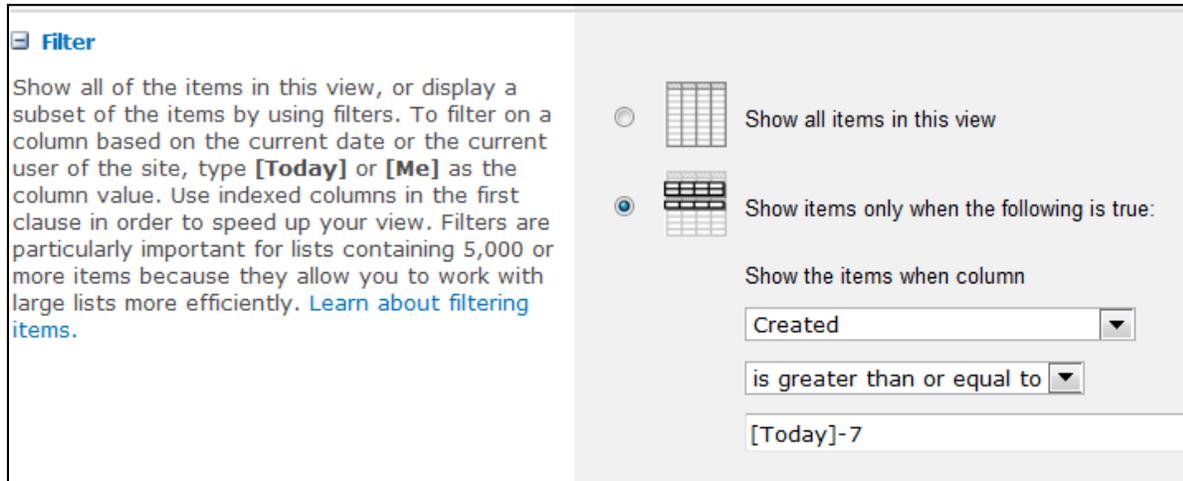
**Figure 10: Training Materials -- System Notifications on the Home Page**

The above figure shows the System Notifications view of the Training Materials list. The red box in the right corner indicates its location. Clicking the Web Part Title “System Notifications” (**Figure 11**) will bring you to the System Notifications view of the Training Materials list.



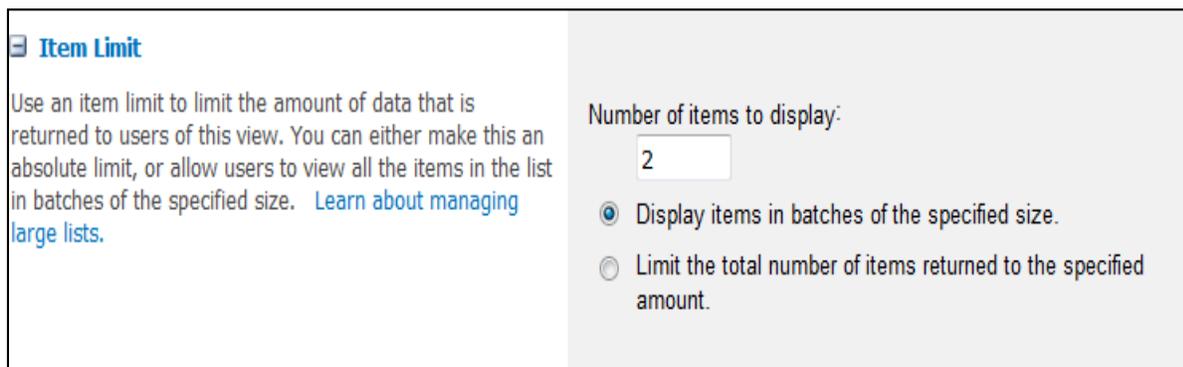
**Figure 11: System Notification Web Part**

All of the following figures demonstrate functionality that can be accessed by modifying the System Notifications view. Modify the view using the procedure outlined in **Figure 5** located in Chapter 2: Lists (Training Materials – Cascading Search).



**Figure 12: Filtering Items**

The above figure demonstrates how a filter of the Created column allows for only recently created Training Materials list items to populate the System Notifications view of Training Materials.



**Figure 13: Setting an Item Limit**

The figure shows how to limit the number of items to display. In this case, two items are displayed at a given time.

<p><b>Name and Type</b></p> <p>Type a name for this column.</p>	<p>Column name:  <input type="text" value="Notification"/></p> <p>The type of information in this column is:          Calculated (calculation based on other columns)</p>
<p><b>Additional Column Settings</b></p> <p>Specify detailed options for the type of information you selected.</p>	<p>Description:  <input type="text"/></p> <p>Formula:  <input added!="" by="" check="" clicking="" course="" it="" just="" on="" out="" the="" title!"="" type="text" value="=Title&amp;" was=""/></p> <p>Insert Column:  <ul style="list-style-type: none"> <li>Category</li> <li>Classification</li> <li>Cost</li> <li>Created</li> <li>End Date</li> <li>EndDate</li> <li>Event Date</li> <li>EventDate</li> <li>Group</li> <li>Location</li> </ul> </p> <p style="text-align: right;"><a href="#">Add to formula</a></p>

**Figure 7: Using Calculated Columns**

The Notification column was created as a calculated column. The formula used creates a string that returns the value of the Title column as a string and appends it to rest of the string “was just added! Check it out by clicking on the course title!” This calculated column is the only other column visible other than the item Title column.

## Training Materials – Upcoming Events

This list view only uses three visible columns. These columns are Title, Event Date, and End Date. It uses the “Filter” functionality to filter list entries based on whether they are ending in the next 60 days. It uses the “Sort” functionality to sort items based on when their due date. This view is used in the site Home Page to notify employees of upcoming training as seen in **Figure 15** below. Lastly, it limits the number of visible list entries to allow a user to view only four entries at a time.

The screenshot shows the OSE Training Site interface. The main content area displays a search results table with columns: Title, Link, Description, Source of Delivery, Location, Cost, Event Date, and End Date. Below the table, it states "There are no items to show in this view of the 'Training Materials' list. To add a new item, click 'New'." and includes an "Add new item" button. On the right side, there are "System Notifications" and an "Upcoming Events" section. The "Upcoming Events" section is highlighted with a red box and contains a table with columns: Title, EventDate, and EndDate. Below it is a "My Training Calendar" section showing "February, 2015".

Title	EventDate	EndDate
Word 2010 Introduction <a href="#">Register Here</a> NEW	2/3/2015 9:00 AM	2/3/2015 4:00 PM
Excel 2010 Introduction <a href="#">Register Now</a>	2/10/2015 9:00 AM	2/10/2015 4:00 PM

**Figure 15: Training Materials -- Upcoming Events on the Home Page**

The above figure displays the Upcoming Events view of Training Materials. The red box on the right side shows its location on the home page. Clicking the Web Part Title “Upcoming Events” will bring a user to the Upcoming Events view.

### Upcoming Events

Title	EventDate	EndDate
Word 2010 Introduction <a href="#">Register Here</a> NEW	2/3/2015 9:00 AM	2/3/2015 4:00 PM
Excel 2010 Introduction <a href="#">Register Now</a>	2/10/2015 9:00 AM	2/10/2015 4:00 PM

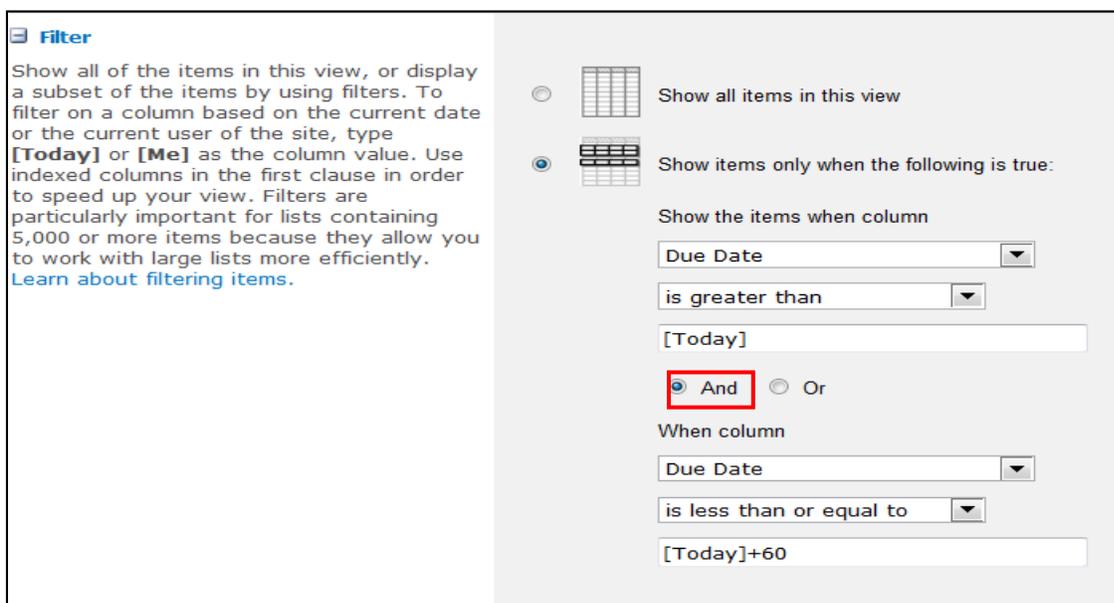
[Add new item](#)

**Figure 8: Training Materials -- Upcoming Events Expanded**

This figure shows a close-up of the Upcoming Events view.

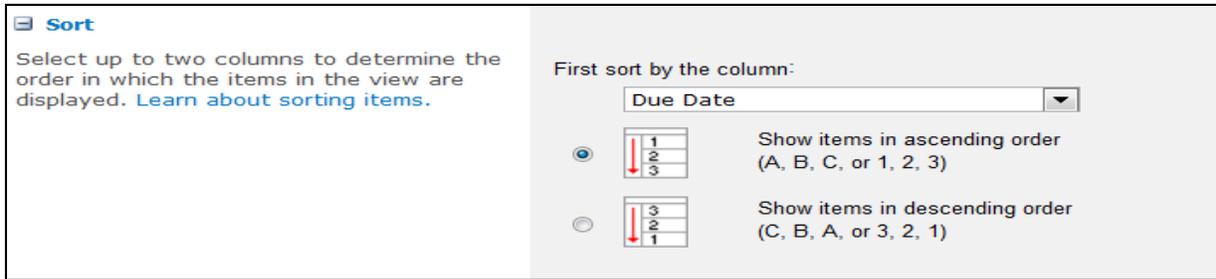
All of the following figures demonstrate functionality that can be accessed by modifying the Upcoming Events view. Modify the view using the procedure outlined in **Figure 5** located in Chapter 2: Lists (Training Materials – Cascading Search).

The filter values compare the value of the Due Date column to the values of [Today] and [Today]+60 (notice that there is no space in [Today]+60, this is necessary) as seen in **Figure 17**. Due Date, is a calculated column that is equal to the EndDate of a training course as seen in **Figure 18**.



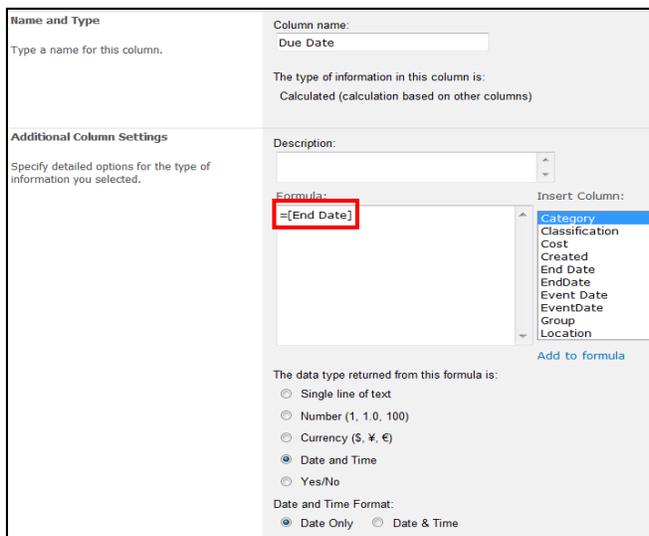
**Figure 17: Filtering Items**

The above figure shows the use of [Today] and filters list items from Training Materials. The two combined comparison ANDed together produce items that have a due date in the next 60 days.



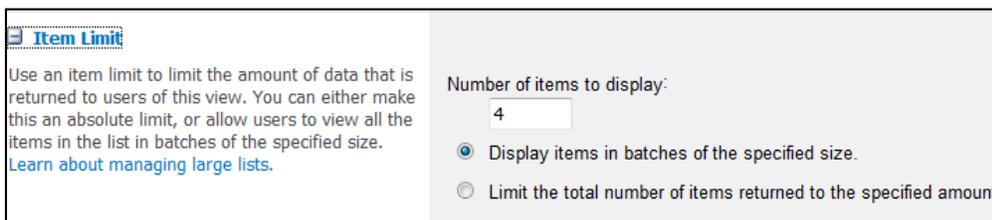
**Figure 18: Sorting Items**

The figure shows how the list items will automatically sorted to show the items with the earliest Due Date first.



**Figure 19: Using Calculated Columns**

The Due Date column is equal to End Date. Its data type is “Date and Time”, “Date Only.”



**Figure 20: Setting an Item Limit**

The “Upcoming Events” view is set to display four items at a time.

## My Training Path – All Items

This list only has a single view: All Items. It contains the columns: Title, Link, Description, Source of Delivery, EventDate, EndDate, Major Category, Group, Role, Classification, Cost, and Location. This list has all of the same visible columns as the Training Materials – All Items list. The list is shown in **Figure 21** There is a hidden column called “Assigned to Me:”, and this list filters the items based on whether the “Assigned to Me:” column is equal to the current user.

OSE Training Site ▶ My Training Path

OSE Regulatory Science Staff This Site: OSE Training S

Edit this page to modify your web part content.

Title	Link	Description	Source of Delivery	EventDate	EndDate	Major Category	Group	Role	Classification	Cost
Excel 2010 Advanced <span>NEW</span>	Register Now	This course surveys advanced features of Excel 2010.	FDA-OIM	5/12/2015 9:00 AM	5/12/2015 4:00 PM	Fundamentals	Program Basics	Reviewer	Excel	\$100.0
Managing, Inspecting, and Recovering Word 2010 Documents <span>NEW</span>	Launch Course Content	Explore advanced document features in Word 2010.	Online			Fundamentals	Program Basics	Reviewer, Supervisor, Project Manager, Trainer, Policy / Research, Analyst, Team Leader	Word	\$0.0

Recycle Bin Add new item

**Figure 21: My Training Path**

The above figure shows the view of a user’s My Training Path list.

**Filter**

Show all of the items in this view, or display a subset of the items by using filters. To filter on a column based on the current date or the current user of the site, type **[Today]** or **[Me]** as the column value. Use indexed columns in the first clause in order to speed up your view. Filters are particularly important for lists containing 5,000 or more items because they allow you to work with large lists more efficiently. [Learn about filtering items.](#)

Show all items in this view

Show items only when the following is true:

Show the items when column

Assigned To Me:

is equal to

**Figure 22: Filtering Items**

**Figure 22** demonstrates the ability to filter a list based on [Me]. The Assigned To Me: column contains a data type that returns a “Person”, so it can be set equal to [Me], or the current user. This ensures that a user is only seeing his/her personal list.

All of the following figures demonstrate functionality that can be accessed by modifying the My Training Path view. Modify the view using the procedure outlined in **Figure 5** located in Chapter 2: Lists (Training Materials – Cascading Search).

## My Course Transcript – All Items

It contains the columns: Title, Link, Description, Source of Delivery, EventDate, EndDate, Major Category, Group, Role, Classification, Cost, and Location. This list has all of the same visible columns as the Chapter 2: Training Materials – All Items list. The list is shown in **Figure 23** There is a hidden column called “Assigned to Me:”, and this list filters the list items based on whether the “Assigned to Me:” column is equal to the current user.

OSE Training Site	Title	Link	Registered	Completed	Certificate	Assigned To Me:	EventDate	EndDate	Location
Training Materials	Excel 2010 Advanced <span>NEW</span>	Register Now	Yes	No		Murphy, Sean *	5/12/2015 9:00 AM	5/12/2015 4:00 PM	
Refined Search	Excel 2010 Intermediate <span>NEW</span>	Register Now	Yes	No		Murphy, Sean *	3/24/2015 9:00 AM	3/24/2015 4:00 PM	

**Figure 23: My Course Transcript -- All Items**

The above figure shows the All Items view of the My Course Transcript list.

**Filter**

Show all of the items in this view, or display a subset of the items by using filters. To filter on a column based on the current date or the current user of the site, type **[Today]** or **[Me]** as the column value. Use indexed columns in the first clause in order to speed up your view. Filters are particularly important for lists containing 5,000 or more items because they allow you to work with large lists more efficiently. [Learn about filtering items.](#)

Show all items in this view

Show items only when the following is true:

Show the items when column

Assigned To Me:

is equal to

**Figure 24: Filtering Items**

**Figure 24** demonstrates the ability to filter a list based on [Me]. The Assigned To Me: column contains a data type that returns a “Person”, so it can be set equal to [Me], or the current user. This ensures that a user is only seeing his/her personal list.

All of the following figures demonstrate functionality that can be accessed by modifying the My Course Transcript – All Items view. Modify the view using the procedure outlined in Figure 5 located in Chapter 2: Lists (Training Materials – Cascading Search).

## My Course Transcript – My Training Calendar

The My Training Calendar view was created by simply using SharePoint's out-of-the-box calendar view on My Course Transcript. The only significant thing to add about the My Training Calendar view is that like the All Items view, it filters the entries based on [Me] like in **Figure 24** in the previous page. The "My Training Calendar" view is also located on the Home Page. Clicking on the title of the Web Part will redirect a user to the "My Training Calendar." This is accomplished by editing the Web Part and changing the title URL. The location in the site Home Page is found in **Figure 25**. The way to edit the title URL is shown in **Figure 26**. Lastly, the actual view is displayed in **Figure 27**.

The screenshot displays the OSE Training Site home page. The page includes a navigation menu on the left with items like Training Materials, Refined Search, My Training Path, My Course Transcript, Professional Resources, and Help. The main content area features a Quick Search box, a Search Results table (currently empty), and a My Training Calendar web part. The calendar is for February 2015 and shows an event on February 10th at 9:00 am titled 'Excel 2'. The calendar web part is highlighted with a red box.

Title	Link	Description	Source of Delivery	Location	Cost	Event Date	End Date
There are no items to show in this view of the "Training Materials" list. To add a new item, click "New".							

Title	EventDate	EndDate
Word 2010 Introduction	2/3/2015 9:00 AM	2/3/2015 4:00 PM
Excel 2010 Introduction	2/10/2015 9:00 AM	2/10/2015 4:00 PM

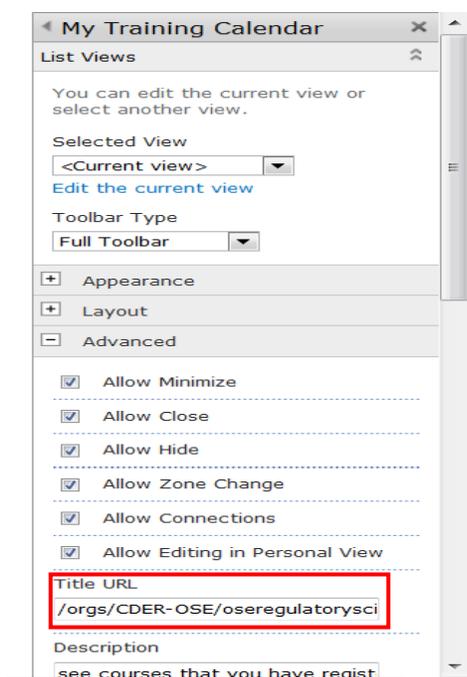
My Training Calendar						
February, 2015						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10 9:00 am Excel 2	11	12	13	14

**Figure 25: My Training Calendar on the Site Home Page**

The figure shows the location of "My Training Calendar" List Web Part on the Home Page which is indicated by the red box in the bottom right corner of the figure.

On the site Home Page, please follow the steps:

1. Click “Site Actions” in the top left corner.
2. Select “Edit Page”
3. Click on the My Training Calendar Web Part
4. Click to edit the web part
  - a. Under the “Advanced” section, enter a new value for the “Title URL”



**Figure 26: Edit Title URL**

The figure on the left shows where to edit the title URL of a Web Part to allow for clicking on a title to lead to a specific view. To do so, edit the Title URL value to follow this formatting:

[Site]/[List]/[List View].aspx .

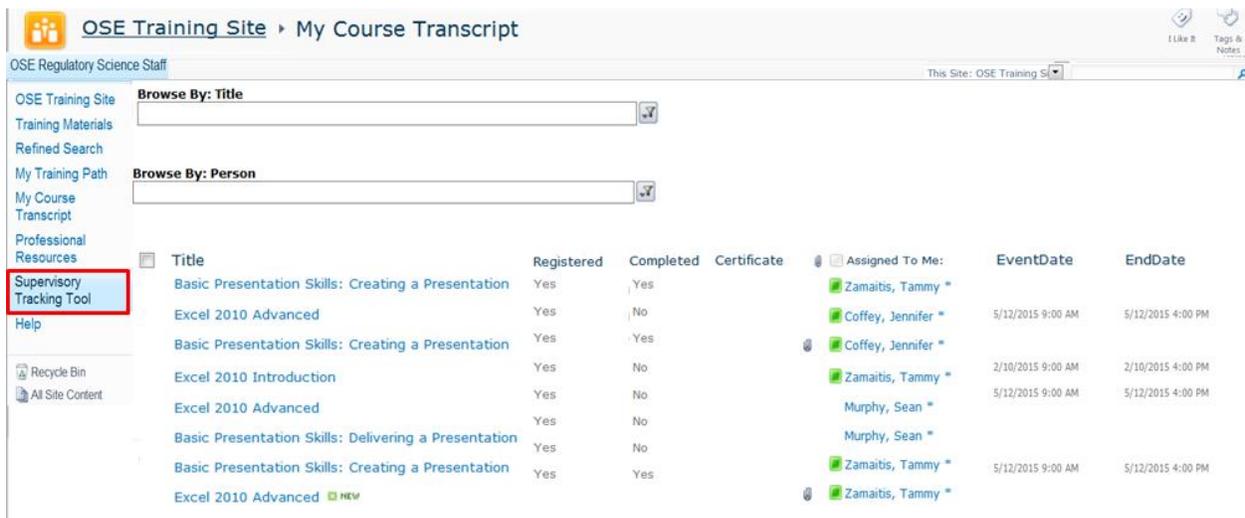
The screenshot displays a web interface for the OSE Training Site. At the top, there are navigation tabs for 'List Tools' and 'Calendar Tools'. The main header shows the breadcrumb path: 'OSE Training Site > My Course Transcript > My Training Calendar'. Below this, there are several menu items: 'OSE Regulatory Science Staff', 'Science Policy and Processes', 'Business Requirements Management', 'RSS Program Area Research Program', 'RSS Program Area Program Planning', and 'RSS Program Area Data Standards'. A dropdown menu is set to 'This List: My Course Tran...'. The main content area is a calendar for December 2014, showing days from Sunday to Saturday. The date '16' is highlighted in blue. On the left side, there is a sidebar with a monthly calendar view for 2014, with 'Dec' selected. Below the sidebar, there are several navigation links: 'OSE Training Site', 'Training Materials', 'Search', 'My Training Path', 'My Course Transcript', 'Professional Directory', 'Supervisory Tracking Tool', and 'Help'. The user's name 'Murphy, Sean' is visible in the top right corner.

**Figure 27: My Course Transcript – My Training Calendar**

The figure above shows the My Training Calendar view of *My Course Transcript*.

## My Course Transcript – Test (Supervisory Tracking Tool List)

The *Supervisory Tracking Tool* is actually the Test view of the My Course Transcript list. It does not filter the My Course Transcript list based on whether Assigned To Me: is equal to the current user. Rather, it allows users with supervisor permission levels to see all list items in the My Course Transcript list. There are also two SharePoint List Filters connected to the list that allow supervisors to filter based on the course title or by the person to whom the list entry is assigned. The Test view is illustrated in **Figure 28** below.



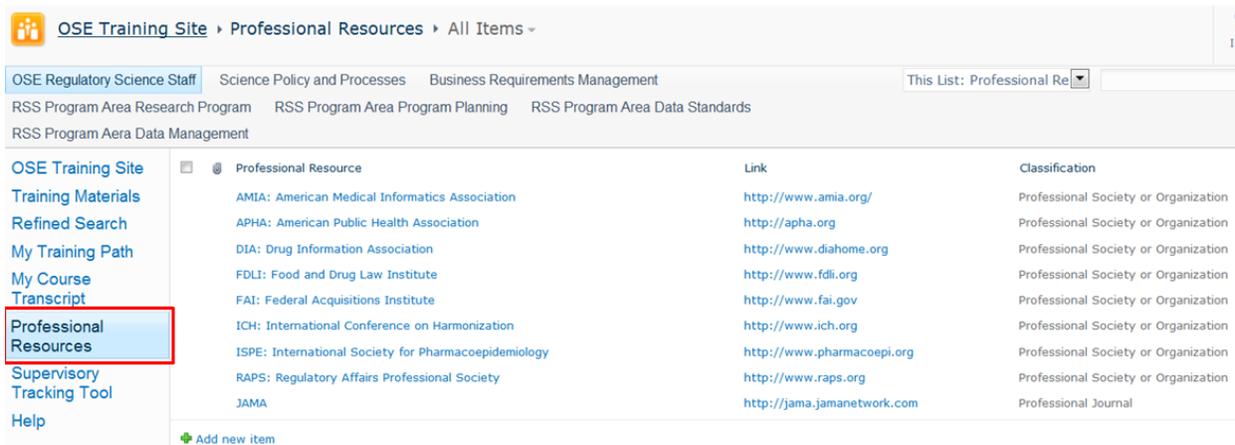
Title	Registered	Completed	Certificate	Assigned To Me:	EventDate	EndDate
Basic Presentation Skills: Creating a Presentation	Yes	Yes		Zamaitis, Tammy *		
Excel 2010 Advanced	Yes	No		Coffey, Jennifer *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Basic Presentation Skills: Creating a Presentation	Yes	Yes		Coffey, Jennifer *		
Excel 2010 Introduction	Yes	No		Zamaitis, Tammy *	2/10/2015 9:00 AM	2/10/2015 4:00 PM
Excel 2010 Advanced	Yes	No		Murphy, Sean *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Basic Presentation Skills: Delivering a Presentation	Yes	No		Murphy, Sean *		
Basic Presentation Skills: Creating a Presentation	Yes	No		Zamaitis, Tammy *	5/12/2015 9:00 AM	5/12/2015 4:00 PM
Excel 2010 Advanced <span>NEW</span>	Yes	Yes		Zamaitis, Tammy *		

**Figure 28: My Course Transcript – Test (Supervisory Tracking Tool)**

The Test view has all of the same visible columns as the All Items view of the My Course Transcript list, but it shows all list entries. Its special permissions will be discussed in detail in Chapter 7: Permissions & Access (Supervisory Tracking Tool).

## Professional Resources

The Professional Resources list has only the single All Items view that contains list entries that contain the title, link to the resource, and the type of resource. This list is a basic out-of-the-box custom list. The list is shown in **Figure 29**.



OSE Training Site > Professional Resources > All Items

OSE Regulatory Science Staff Science Policy and Processes Business Requirements Management This List: Professional Resources

RSS Program Area Research Program RSS Program Area Program Planning RSS Program Area Data Standards

RSS Program Area Data Management

Professional Resource	Link	Classification
AMIA: American Medical Informatics Association	<a href="http://www.amia.org/">http://www.amia.org/</a>	Professional Society or Organization
APHA: American Public Health Association	<a href="http://apha.org">http://apha.org</a>	Professional Society or Organization
DIA: Drug Information Association	<a href="http://www.diahome.org">http://www.diahome.org</a>	Professional Society or Organization
FDLI: Food and Drug Law Institute	<a href="http://www.fdpi.org">http://www.fdpi.org</a>	Professional Society or Organization
FAI: Federal Acquisitions Institute	<a href="http://www.fai.gov">http://www.fai.gov</a>	Professional Society or Organization
ICH: International Conference on Harmonization	<a href="http://www.ich.org">http://www.ich.org</a>	Professional Society or Organization
ISPE: International Society for Pharmacoepidemiology	<a href="http://www.pharmacoepi.org">http://www.pharmacoepi.org</a>	Professional Society or Organization
RAPS: Regulatory Affairs Professional Society	<a href="http://www.raps.org">http://www.raps.org</a>	Professional Society or Organization
JAMA	<a href="http://jama.jamanetwork.com">http://jama.jamanetwork.com</a>	Professional Journal

Add new item

**Figure 29: Professional Resources**

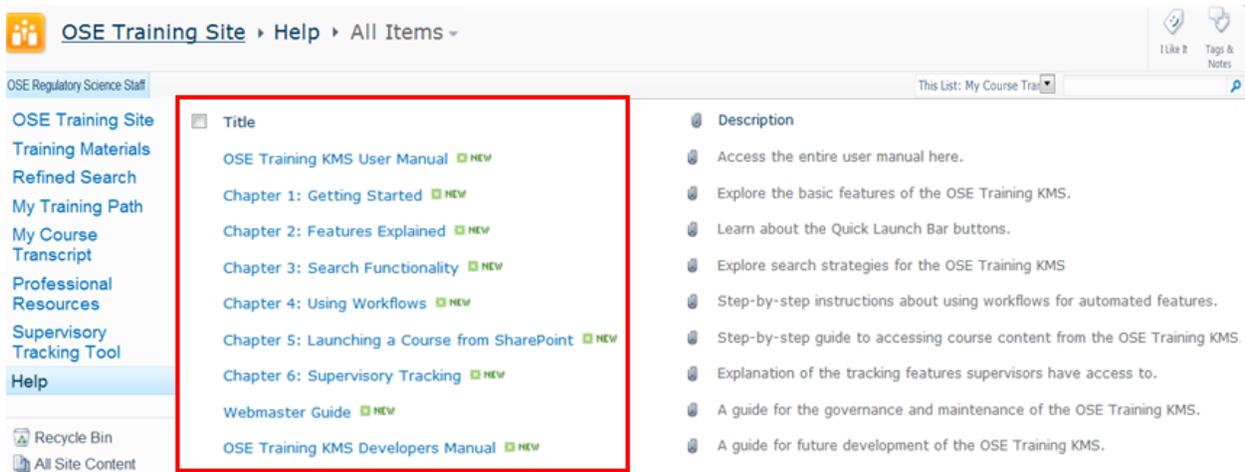
The above figure shows some sample entries in the Professional Resources--All Items view.

# Help

The Help list has only the single All Items view that contains list entries that contain the title, attachment, and description. This list is a basic out-of-the-box custom list.

Note: The out of the box custom list may require extra maintenance around custom permissions as per the supervisors or administrators need.

The list is shown in **Figure 30**.



**Figure 30: Help**

The above figure shows some sample entries in the Help--All Items view.

## Taxonomy List

The taxonomy list has one All Items view. None of the list entries in this list require a title. The importance of this list is derived from the values of the columns: major category (taxonomy), group (taxonomy), and classification (taxonomy). This list is used to provide values to a custom form for entering or editing list items in the Training Materials list. The taxonomy list has custom permissions to allow only the webmaster or administrators to change the taxonomy list items. The list is not part of the *Quick Launch bar*. It can be found by navigating to “All Site Content” in the Lists section. **Figure 31** below shows the list with some expanded and collapsed groupings.

OSE Training Site Taxonomy List All Items

This hidden list provides the taxonomy structure behind the training materials

OSE Regulatory Science Staff This Site: OSE Training Site

	major category (taxonomy)	group (taxonomy)	classification (taxonomy)
OSE Training Site	major category (taxonomy) : Career Skills (10)	group (taxonomy)	
Training Materials	group (taxonomy) : Applied Skills (2)		
Refined Search	(no title)	Career Skills	Applied Skills
My Training Path	(no title)	Career Skills	Applied Skills
My Course Transcript	group (taxonomy) : Communication (2)		
Professional Resources	group (taxonomy) : Individual Awareness (2)		
Supervisory Tracking Tool	group (taxonomy) : Leadership (2)		
Help	group (taxonomy) : Team Building (2)		
Recycle Bin	major category (taxonomy) : Data Systems (7)		
All Site Content	major category (taxonomy) : Fundamentals (11)		

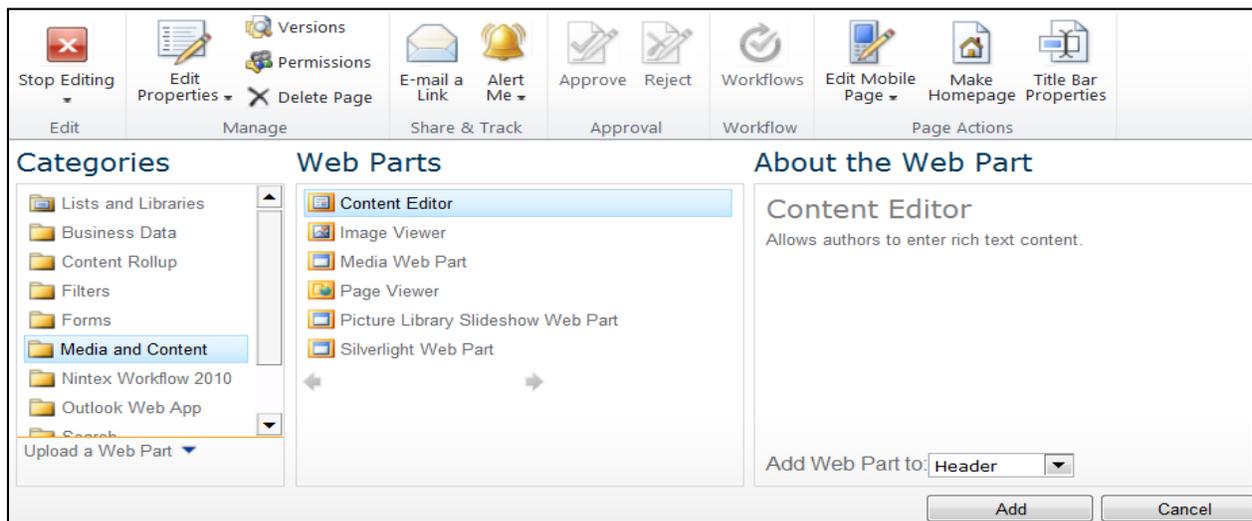
**Figure 31: Taxonomy List – All Items**

Notice how in **Figure 31**, the “Group By” and “Sort” functionalities are leveraged to group entries by first the major category (taxonomy) column then by the group (taxonomy) column. After that, they are sorted by classification (taxonomy). The process for grouping and sorting list entries can be found in Chapter 2, **Figure 6** and **Figure 7**.

## Chapter 3: Site Pages

### Refined Search

The *Refined Search* page provides advanced searching capabilities. This Web Part Page includes three Web Part zones. In the Header zone, notice the Navigate Back: Return to OSE Training Site. This link gives users the ability to return to the Home Page. It was added by creating a Content Editor Web Part, then adding a URL as the content. The Content Editor Web Part can be found in the Media and Content Web Part category as shown in **Figure 32**.



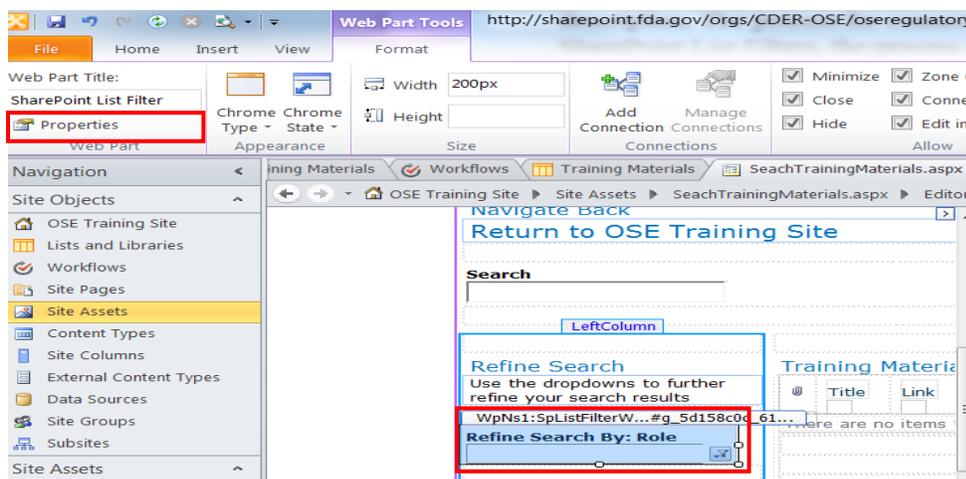
**Figure 32: Adding a Content Editor Web Part**

The next Web Parts that were added were filters for the Training Materials list. For the *Refined Search* page, 1 Text filter and 7 SharePoint list filters were added. Each one of the SharePoint List filters is connected to one of the metadata columns. The text filter is connected to the title and description. The process for connecting the filters was completed in SharePoint Designer. For the SharePoint List Filters, the process is broken the process down into steps:

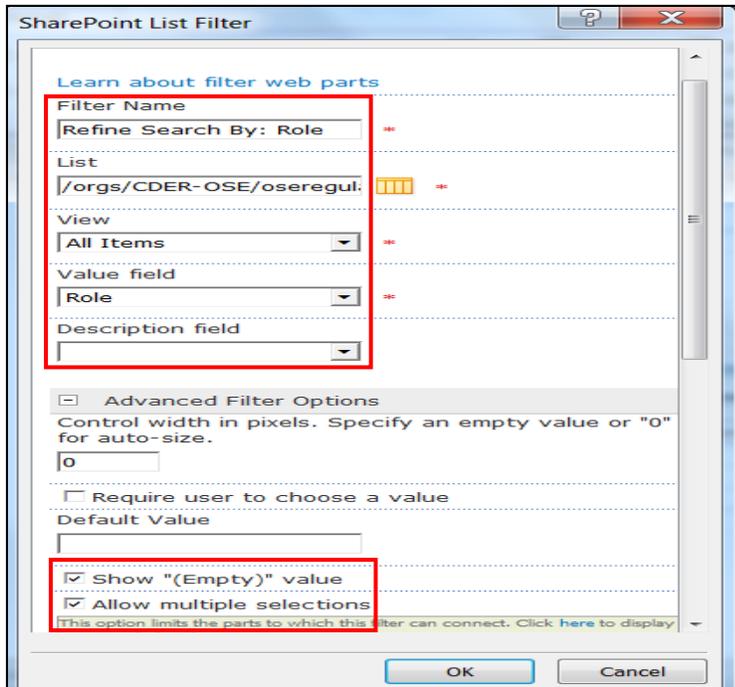
1. Add a SharePoint List Filter in the actual site then select to edit in SharePoint Designer
2. Navigate to Site Assets > SearchTrainingMaterials.aspx, then edit the page

Name	Content Type	Size	Type	Modified Date	Modified By
1417491280_69448.ico	Document	10KB	ico	12/1/2014 4:36 ...	FDA\sean.m...
1417491297_69640.ico	Document	10KB	ico	12/1/2014 4:36 ...	FDA\sean.m...
1417739297_61388.ico	Document	31KB	ico	12/4/2014 1:28 ...	FDA\sean.m...
1417739713_315157.ico	Document	100KB	ico	12/4/2014 1:37 ...	FDA\sean.m...
SeachTrainingMaterials...	Document	5KB	aspx	12/10/2014 6:1...	FDA\sean.m...

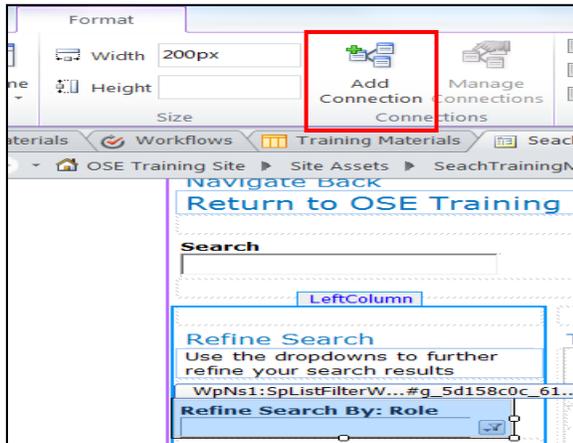
3. Click on the SharePoint List filter just added, then choose the Format tab



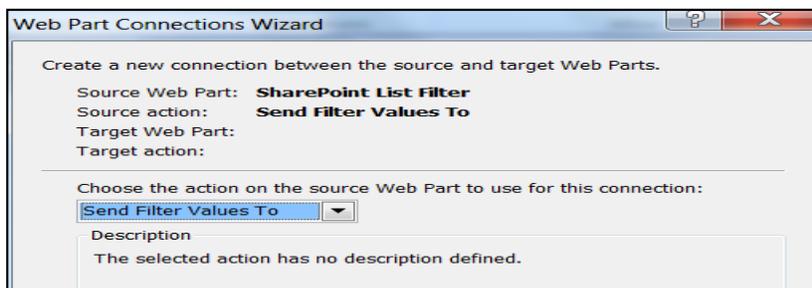
4. Click on Properties (Located Under the Web Part Title)
5. Rename it (in this case it was Refine Search By: Column), then choose the corresponding list (Training Materials), view (All Items), then value field (column). Also ensure that the Show “(Empty)” value and Allow multiple selections under Advanced Filter Options are both checked yes. Click OK



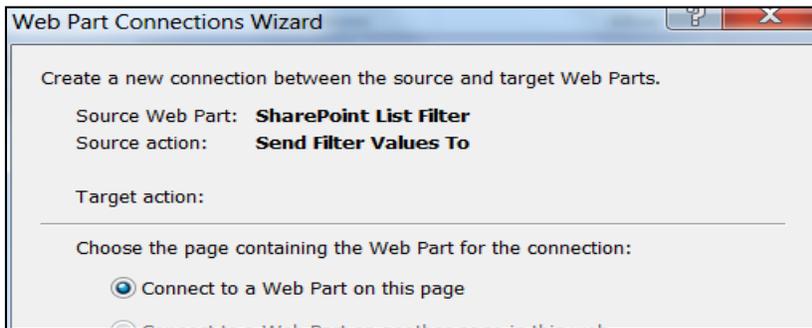
6. Now in the Format tab, click “Add Connection”



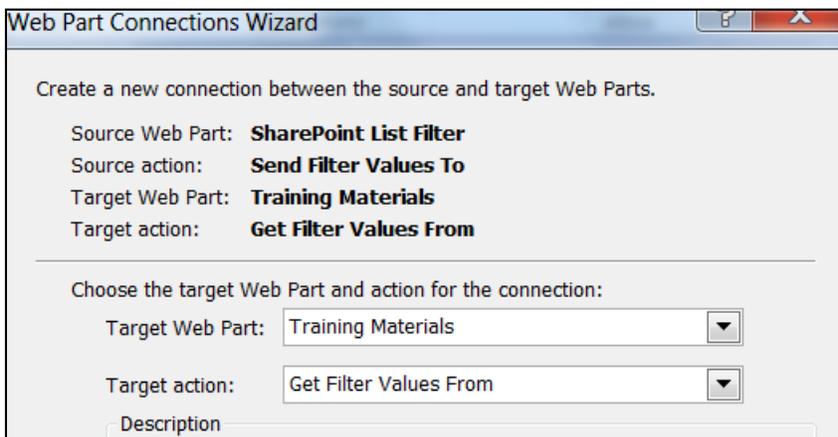
7. Send Filter Values To:



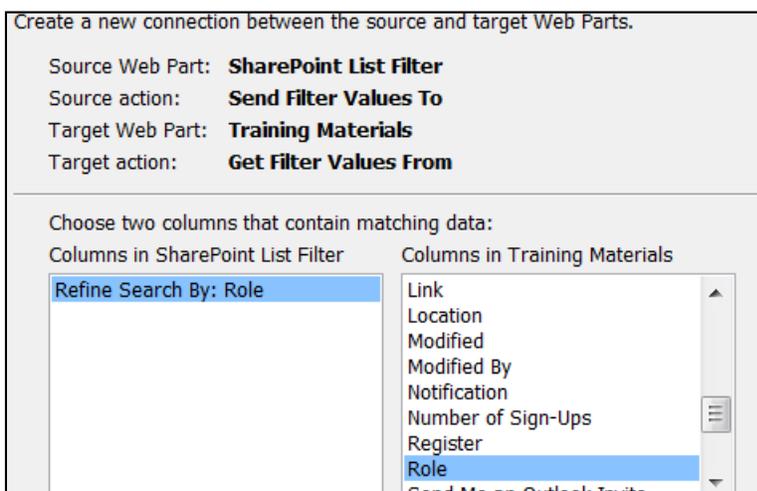
8. Connect to a Web Part on this page



9. Choose Training Materials, Get Filter Values From



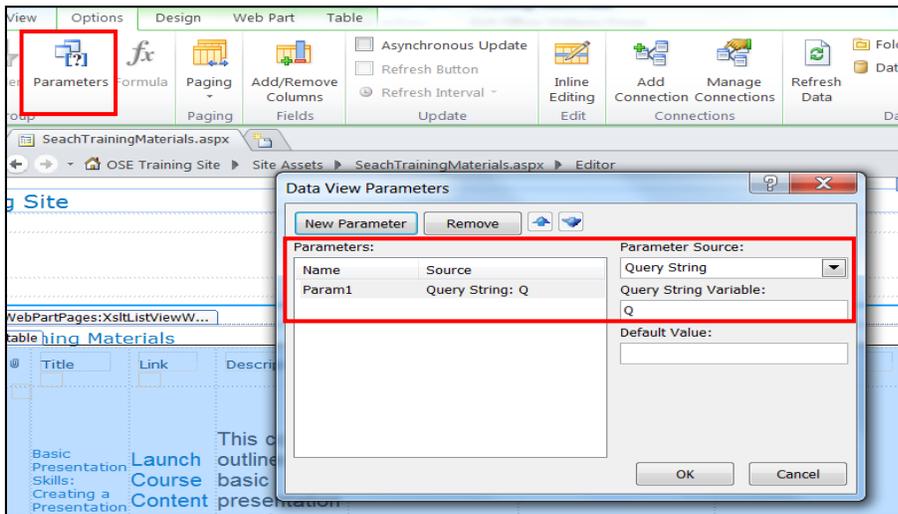
10. Choose Refine Search By: Column, Corresponding Column in Training Materials



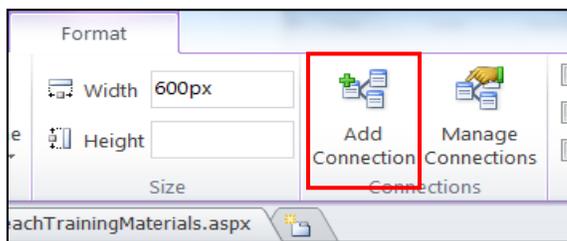
11. Click Finish

Next, the Text Filter must be configured using the following process:

1. Create a parameter to use for the search. This can be done by clicking on the Training Materials list in SharePoint Designer then selecting Parameters in the “Options” tab. In this case, it is a parameter with the source Query String and any variable name. Click “OK”.



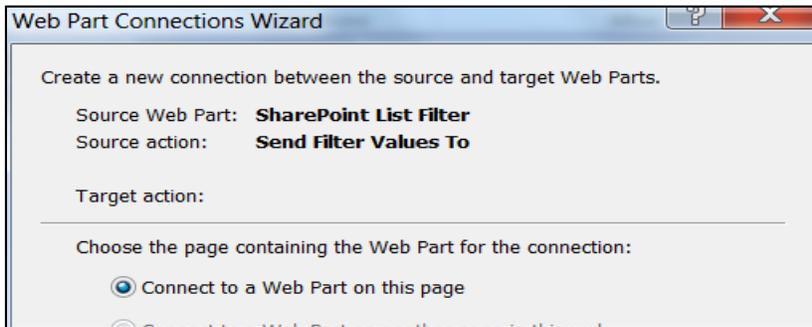
2. Now that there is a parameter, we can click on the “Search Text Filter” and click “Add Connection” just like in Step 6: “Add Connection” in a Format Tab” in the previous page.



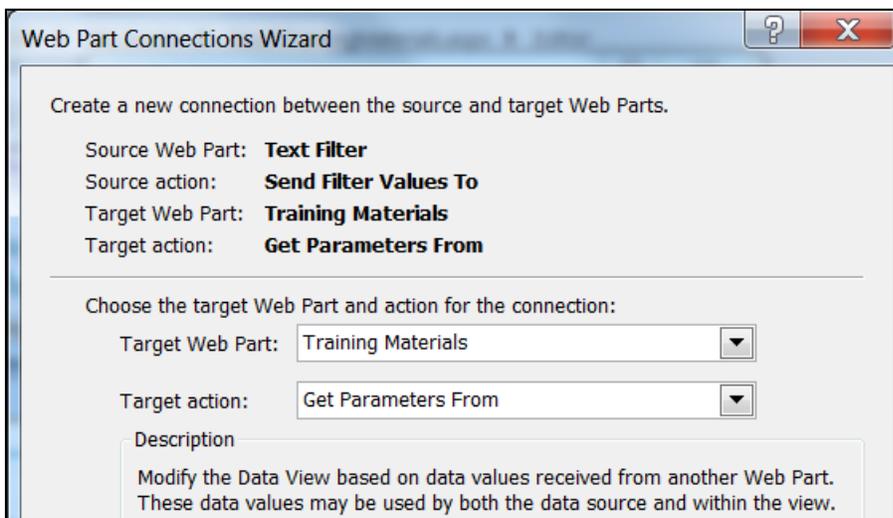
3. Send Filter Values To:



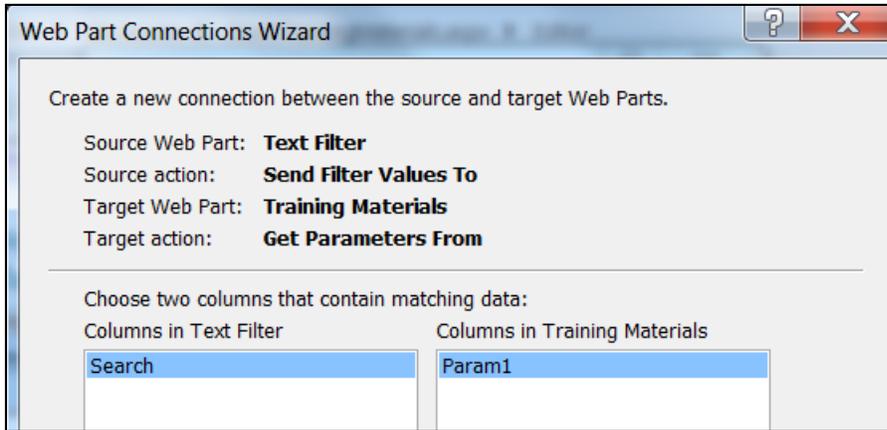
4. Connect to a Web Part on this page



5. Make the Target Web Part: Training Materials again, but this time make the Target Action: Get Parameters From

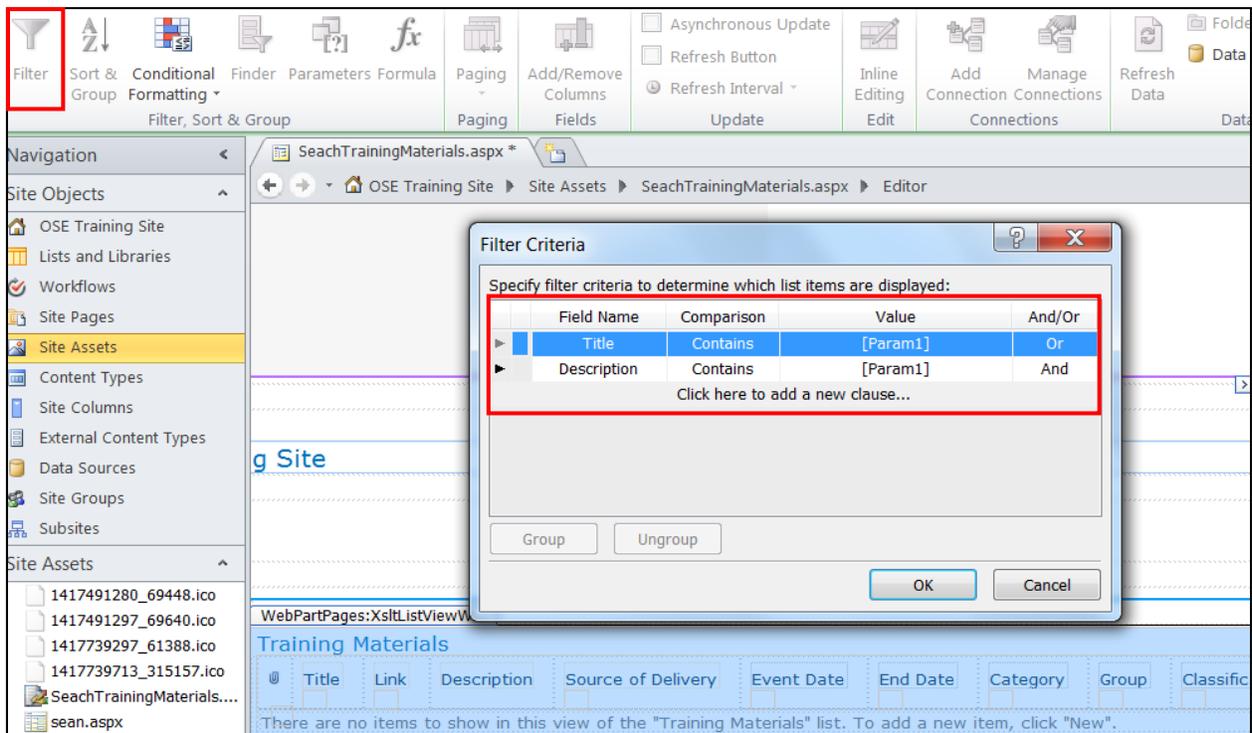


6. Now choose Search and Param1 that was created in Step 1 of this process.



7. Click Finish

Now that the connection has been established, the final step is to apply the filters to the list columns that are desired to be searched. This can be accomplished by clicking the “Filter” button then choosing which field, contains, then the Param1 that was created.



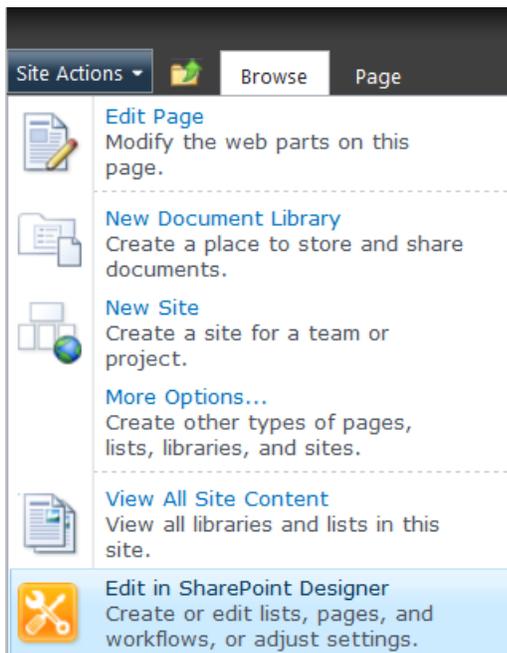
This method for filtering based on parameters is used for *Quick Search* on the Site Home Page.

This helps to compare more fields to the parameter than for *Quick Search*.

## Chapter 4: Workflows

### Navigate to the Workflows

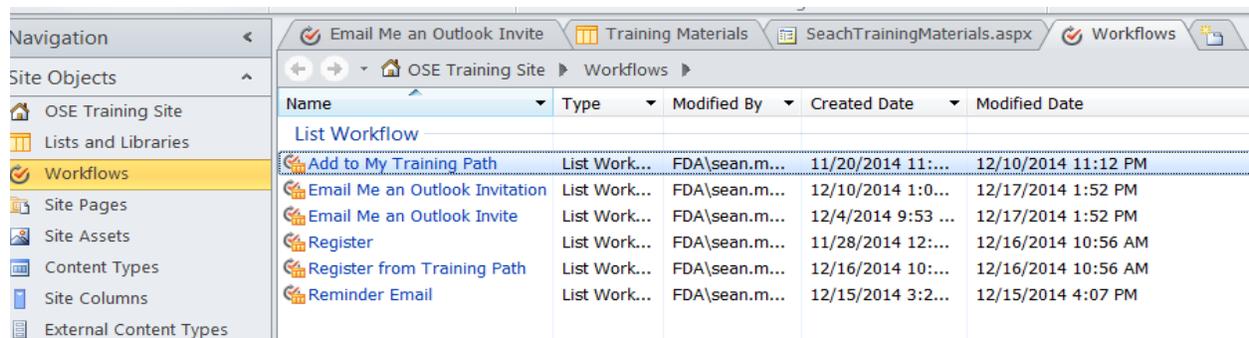
To edit the workflows for the site, choose to “Edit in SharePoint Designer” in “Site Actions” button. Each Workflow is described and listed in a step-by-step description in this section.



**Figure 33: Edit in SharePoint Designer**

The figure on the above shows how to access SharePoint Designer from the site.

Once in SharePoint Designer, navigate to Workflows.



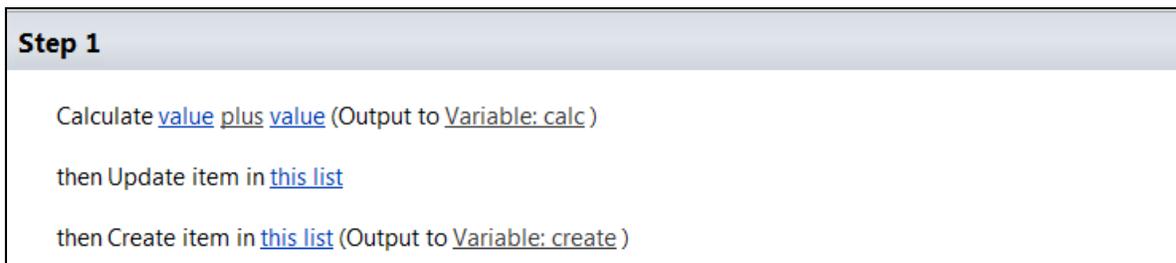
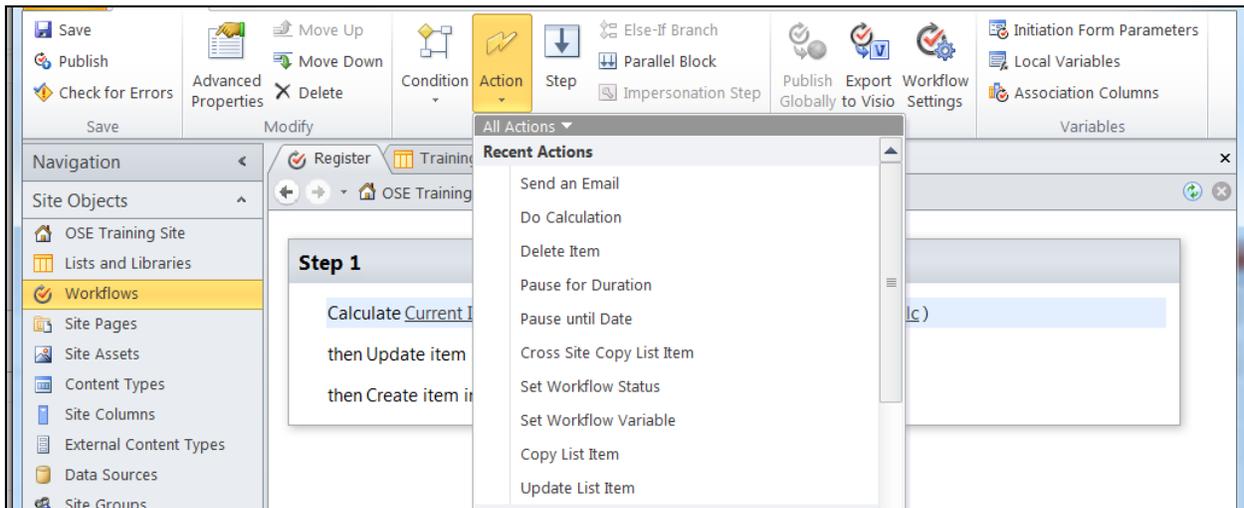
Name	Type	Modified By	Created Date	Modified Date
List Workflow				
Add to My Training Path	List Work...	FDA\sean.m...	11/20/2014 11:...	12/10/2014 11:12 PM
Email Me an Outlook Invitation	List Work...	FDA\sean.m...	12/10/2014 1:0...	12/17/2014 1:52 PM
Email Me an Outlook Invite	List Work...	FDA\sean.m...	12/4/2014 9:53 ...	12/17/2014 1:52 PM
Register	List Work...	FDA\sean.m...	11/28/2014 12:...	12/16/2014 10:56 AM
Register from Training Path	List Work...	FDA\sean.m...	12/16/2014 10:...	12/16/2014 10:56 AM
Reminder Email	List Work...	FDA\sean.m...	12/15/2014 3:2...	12/15/2014 4:07 PM

**Figure 34: List of Workflows**

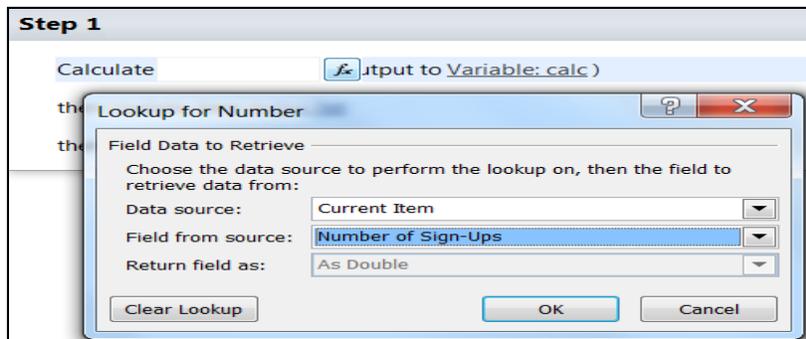
## Register (Add to My Course Transcript)

This workflow is associated with the Training Materials list. The 10 step-by-step directions are shown below.

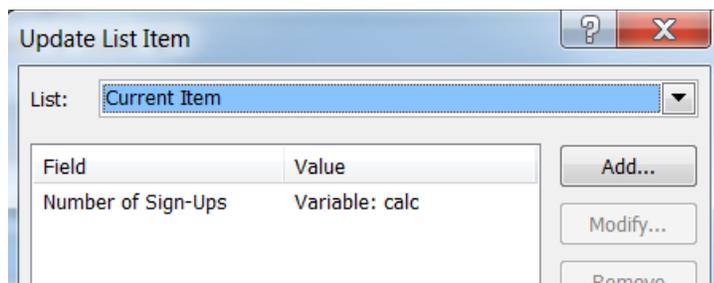
1. After clicking the Register workflow from the workflow list, click to edit the workflow.
2. For this workflow, three actions were used: Do Calculation, Update List Item, and Create List Item (in that order).



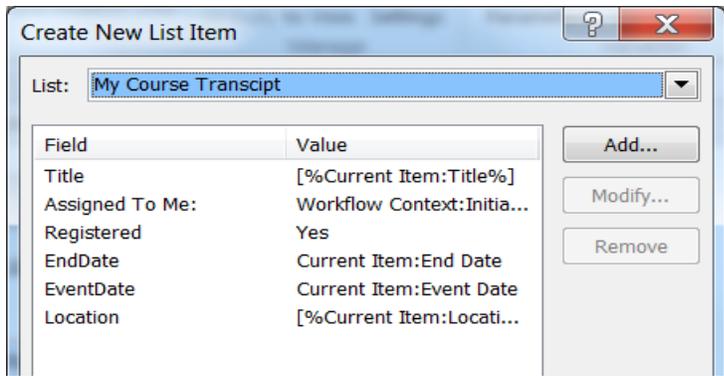
3. For the first value, select  $f_x$  then Current Item, Number of Sign-Ups then click “OK”



4. For the second value, 1 was entered. Then the value was output to Variable: calc
5. On the second line, the current item was chosen.
6. The field Number of Sign-Ups was assigned the value of calc (the variable just created in the previous step), which is the previous value of Number of Sign-Ups + 1. Click “OK”.



7. On the third line, the list *My Course Transcript* was chosen.
8. For Title, EndDate, EventDate, and Location, set the field equal to the value of the Current Item’s Title, End Date, Event Date, and Location (selected by choosing  $f_x$  then choosing Current Item as the Data Source and the corresponding fields as determined above).
9. For Assigned To Me, set the value by choosing the Data Source to be Workflow Context, and Field from source to be Initiator.
10. For registered, select yes from the drop-down (do not click  $f_x$ )

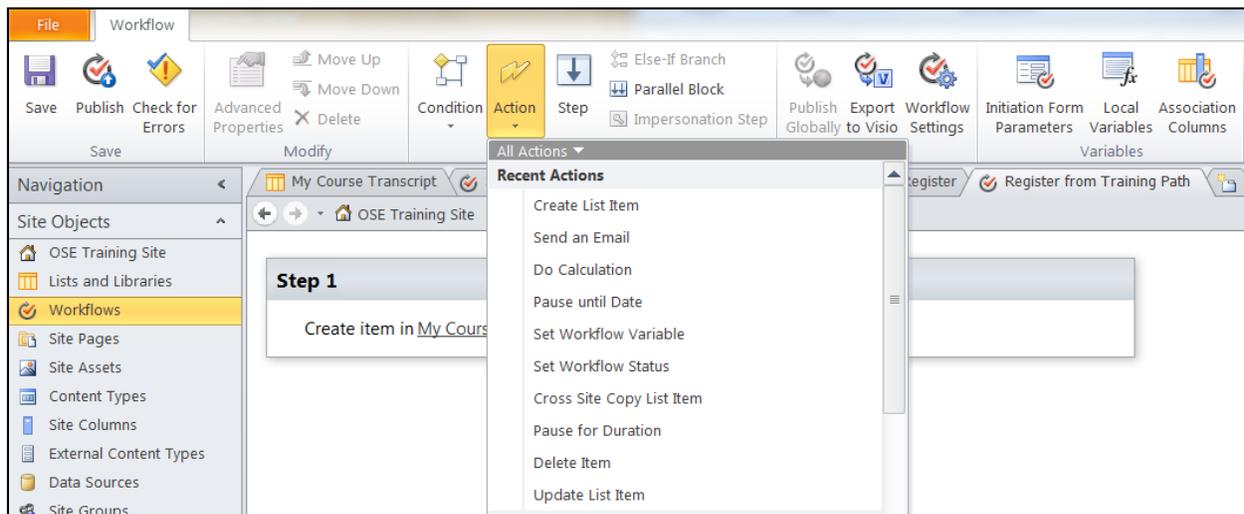


This workflow now accounts for the number of times people have registered by adding 1 to the Number of Sign-Ups column. It then adds a new list item to My Course Transcript that only the person who started the workflow can see by setting the value of Assigned To Me: to the Initiator of the workflow.

## Register from Training Path (Add to My Course Transcript)

This workflow is associated with the My Training Path list. The six procedures are described step-by-step below.

1. After clicking the “Register from Training Path” workflow from the workflow list, click to edit the workflow.
2. For this workflow, one action was used: “Create List Item”.



3. On the option for this list, the list My Course Transcript was chosen.
4. For Title, EndDate, EventDate, Link, and Location, set the field equal to the value of the Current Item’s Title, End Date, Event Date, Link, and Location (selected by choosing  $f_x$  then choosing Current Item as the Data Source and the corresponding fields as determined above).
5. For Assigned To Me, set the value by choosing the Data Source to be Workflow Context, and Field from source to be Initiator.

6. For registered, select yes from the drop-down (do not click f\_x)

The screenshot shows a dialog box titled "Create New List Item". At the top, there is a "List:" dropdown menu currently set to "My Course Transcript". Below this is a table with two columns: "Field" and "Value". The table contains the following entries:

Field	Value
Title	[%Current Item:Title%]
Assigned To Me:	Workflow Context:Initia...
Registered	Yes
EndDate	Current Item:End Date
EventDate	Current Item:Event Date
Location	[%Current Item:Locati...
Link	Current Item:Link

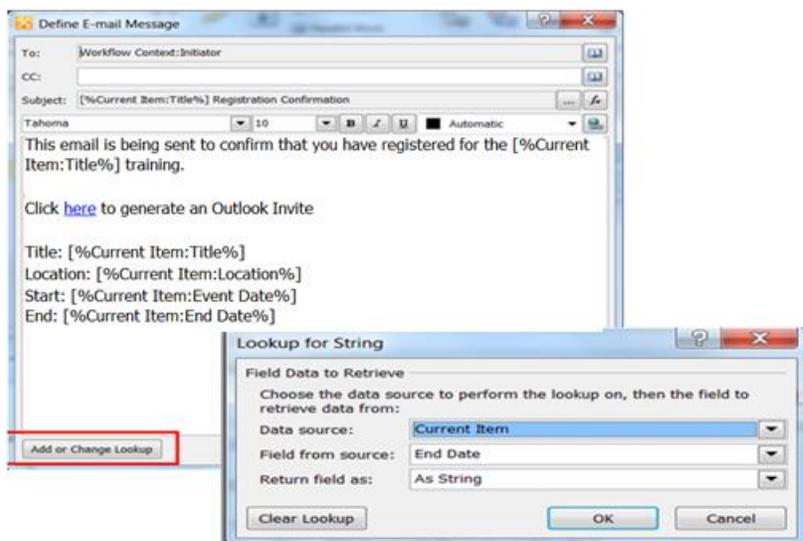
To the right of the table are three buttons: "Add...", "Modify...", and "Remove".

The workflow adds a new list item to My Course Transcript that only the person who started the workflow can see by setting the value of Assigned To Me to the Initiator of the workflow.

## Email Me an Outlook Invite (Associated with Training Materials)

This workflow is associated with the Training Materials list. The six steps are outlined below.

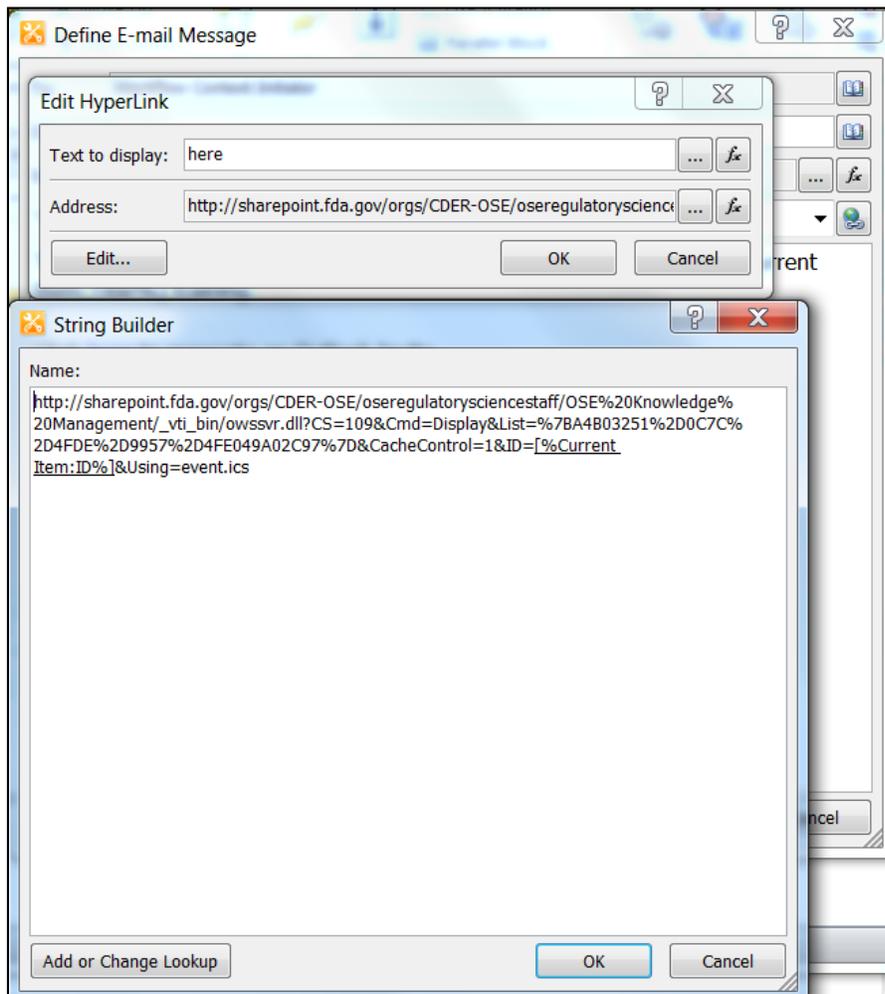
1. After selecting “Email Me an Outlook Invite” from the workflow list, click to edit the workflow.
2. For this workflow, only 1 action was used: “Send Email”
3. An email form is generated with all blank fields.
4. For the To: field, use the same method as Step 9: which stated: “For Assigned To Me, set the value by choosing the Data Source to be Workflow Context, and Field from source to be Initiator”, in the Register workflow (Data Source: Workflow Context, Field from Source: Initiator).
5. For the Subject field, click the “...” button then choose “Add” or “Change Lookup” and choose the Data Source: “Current Item and Field from Source: Title”. Then continue the string with “Registration Confirmation.” The email body is made up of strings and lookups like previously mentioned. The information about a training course including Title, Location, Start Date, and End Date. Each one of these includes a corresponding Lookup.



6. Inserting the hyperlink to create the Outlook Invite is the most crucial part of the entire workflow. Click the “...” button to build the string for the link. The link must be hardcoded and only includes one lookup. It follows the format:

[site]/\_vti\_bin/owssvr.dll?CS=109&Cmd=Display&List=[ListID]&CacheControl=1&ID=[Lookup for Current Item ID]&Using=event.ics

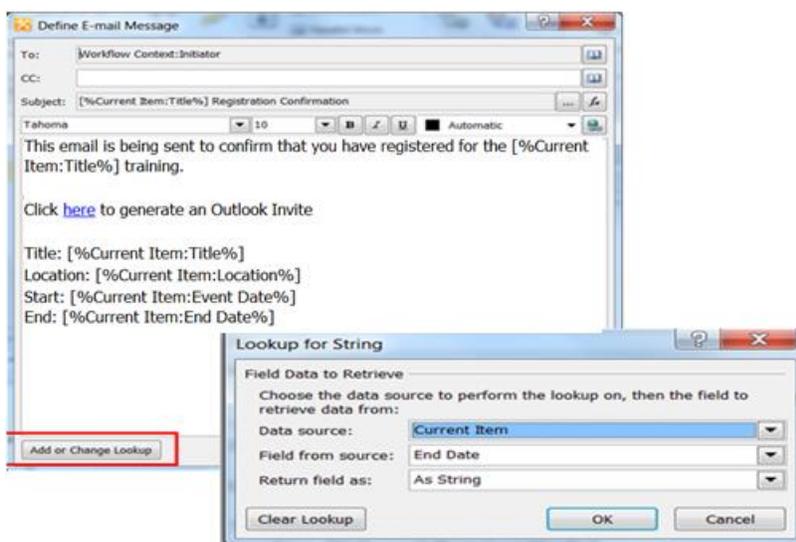
The List ID can be found by navigating to the settings of the Training Materials list then looking in the URL for List=[value].



## Email Me an Outlook Invitation (Associated with My Course Transcript)

This workflow is associated with the My Course Transcript list. The six steps describing this workflow are as follows:

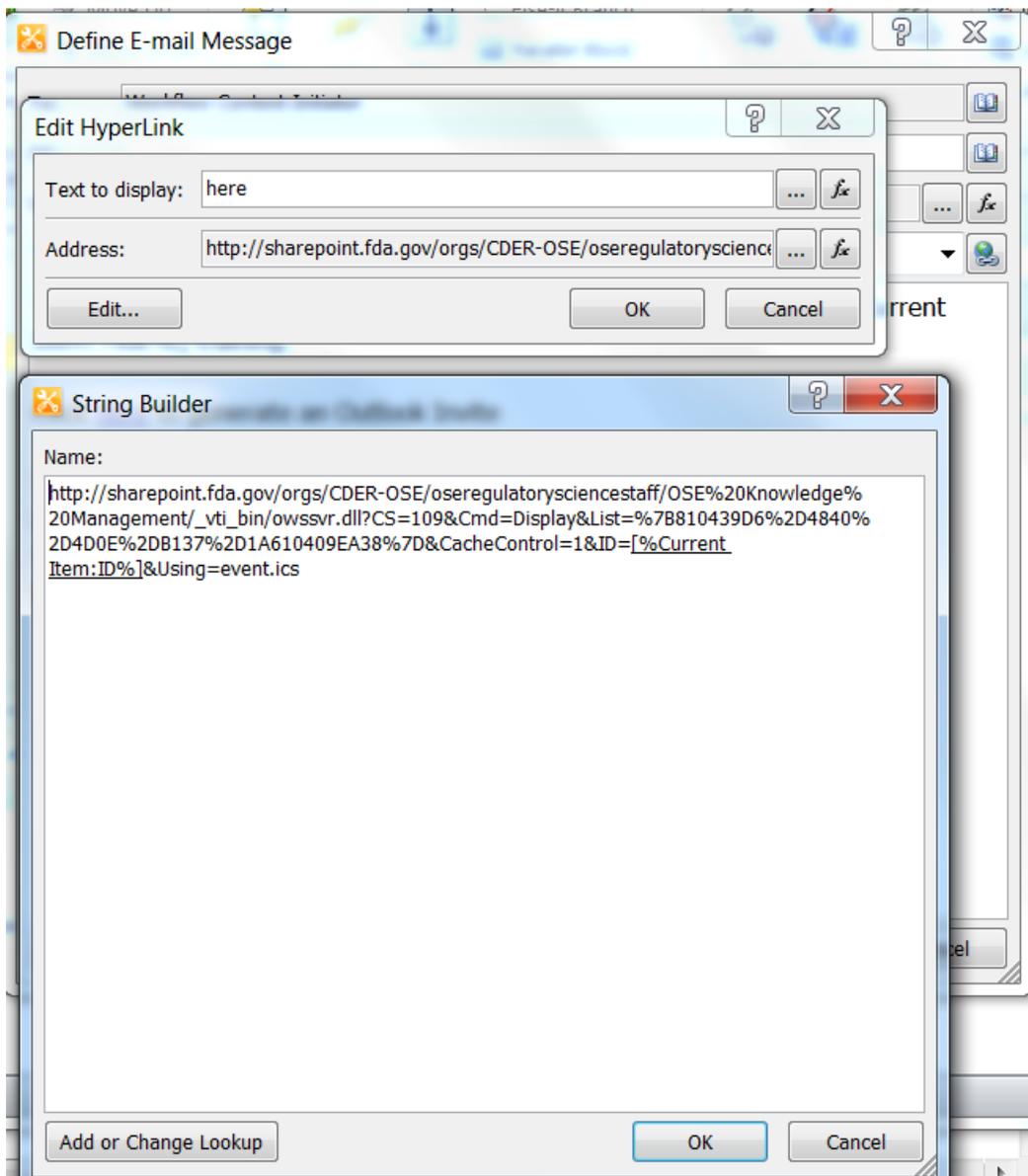
1. After selecting “Email Me an Outlook Invitation” from the workflow list, click the button to edit the workflow.
2. For this workflow, only 1 action was used: “Send Email”
3. An email form is generated with all blank fields.
4. For the To: field, use the same method as Step 9 in the Register workflow (Chapter 4) which states: “For Assigned To Me:, set the value by choosing the Data Source to be Workflow Context, and Field from source to be Initiator” (Data Source: Workflow Context, Field from Source: Initiator).
5. For the Subject field, click the “...” button then choose “Add” or “Change Lookup” and choose the “Data Source: Current Item and Field from Source: Title”. Then continue the string with “Registration Confirmation.” The email body is made up of strings and lookups like previously mentioned. The information about a training course including Title, Location, Start Date, and End Date. Each one of these includes a corresponding Lookup.



6. Inserting the hyperlink to create the Outlook Invite is the most crucial part of the entire workflow. Click the “...” button to build the string for the link. The link must be hardcoded and only includes one lookup. It follows the format:

[site]/\_vti\_bin/owssvr.dll?CS=109&Cmd=Display&List=[ListID]&CacheControl=1&ID=[Lookup for Current Item ID]&Using=event.ics

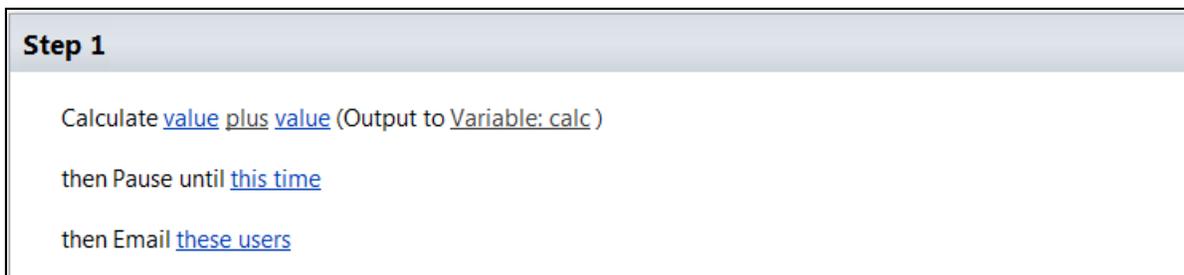
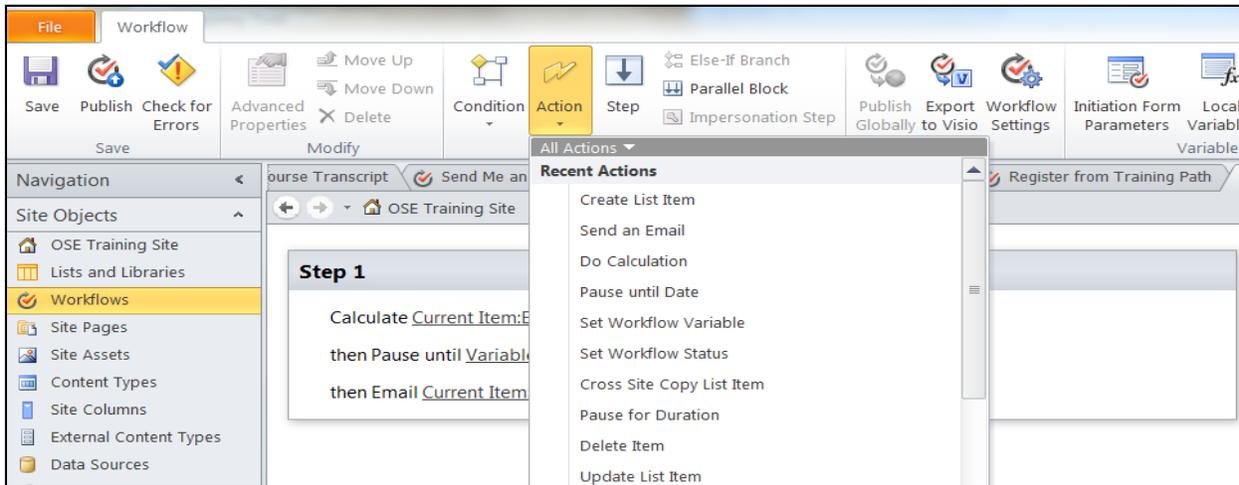
The List ID can be found by navigating to the settings of the My Course Transcript list then looking in the URL for List=[value].



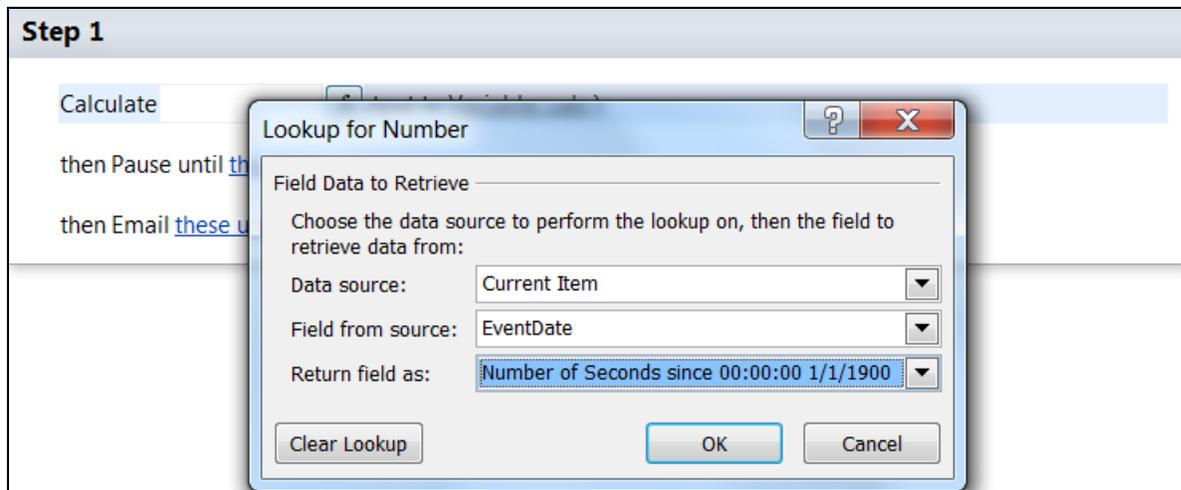
## Reminder Email

There are 10 steps outlined in order to initiate the reminder emails.

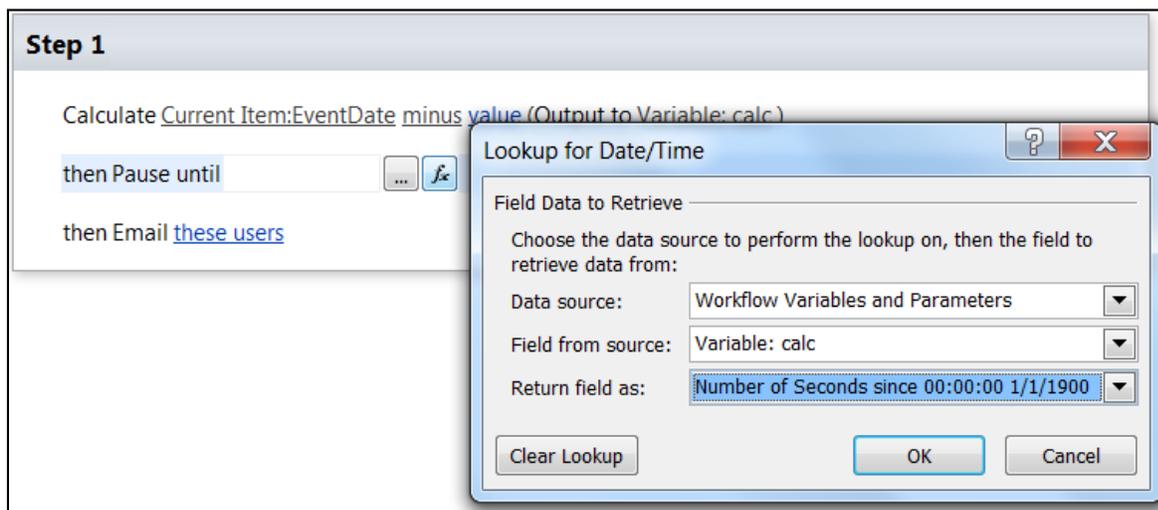
1. After selecting “Reminder Email” from the workflow list, click to edit the workflow.
2. For this workflow, three actions were used: “Do Calculation”, “Pause Until”, “Send Email”.



3. For the first value in the first line, select  $f_x$  then lookup the Current Item's EventDate and return it as the number of seconds since 00:00:00 1/1/1900



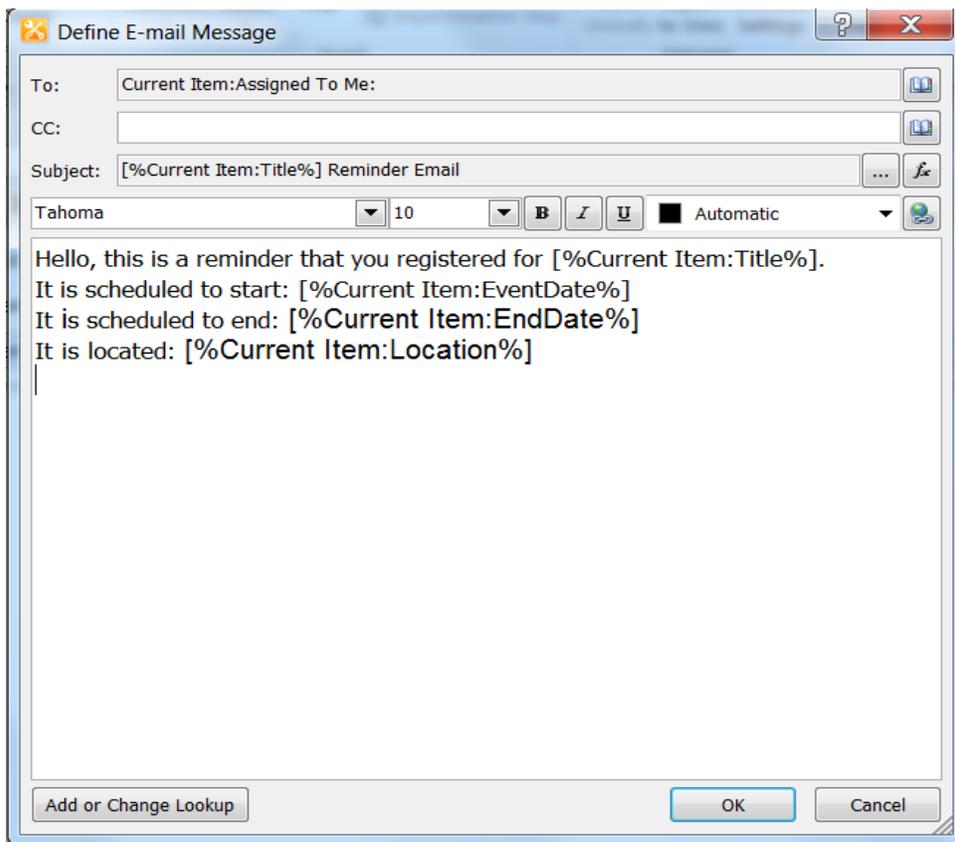
4. In the first line, change the plus option to minus.
5. Enter in the value 172800. This number is 2 days in the number of seconds.
6. Output the value of EventDate minus 172800 to the Variable: calc.



7. In the second line, pause until the variable: calc. The variable: calc can be accessed by choosing the Workflows: Variables and Parameters, the Variable: calc, and return it as the number of seconds since 00:00:00 1/1/1900.
8. By selecting the users, an email form is generated with all blank fields.
9. For the To: field, use the same method as step 9 (Chapter 4) which states: “For Assigned To Me;, set the value by choosing the Data Source to be Workflow Context, and Field

from source to be Initiator” in the Register workflow (Data Source: Workflow Context, Field from Source: Initiator).

10. For the Subject field, click the “...” button then choose “Add” or “Change Lookup” and choose the Data Source: “Current Item and Field from Source: Title”. Then continue the string with “Reminder Email.” The email body is made up of strings and lookups like previously mentioned. The information about a training course including Title, Location, Start Date, and End Date. Each one of these includes a corresponding Lookup.

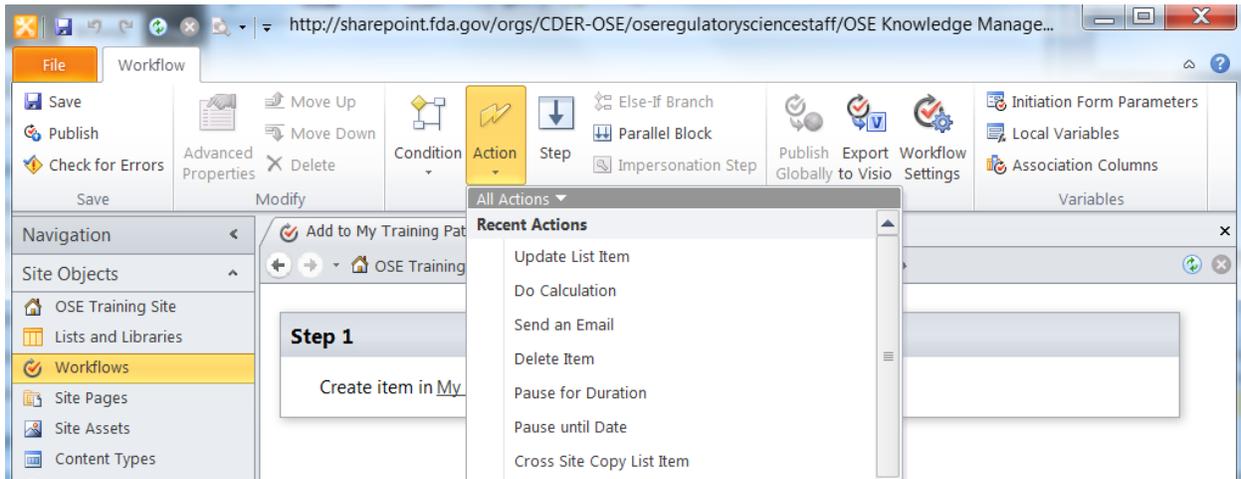


All registered users will be notified via email about their training course registration.

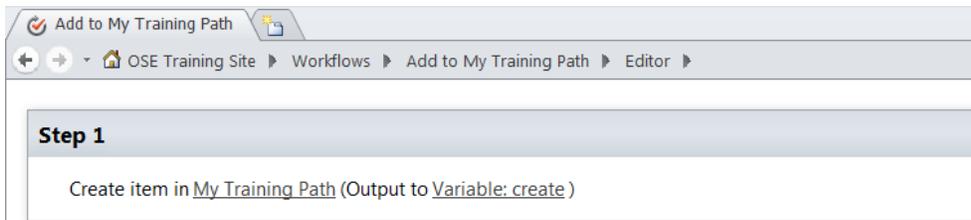
## Add to My Training Path

This workflow is associated with the Training Materials list. There are five steps involved with this workflow and these are explained in detail below.

1. After clicking the “Add to My Training Path” workflow from the workflow list, click the button to edit the workflow.
2. For this workflow, one action was used: “Create List Item”.

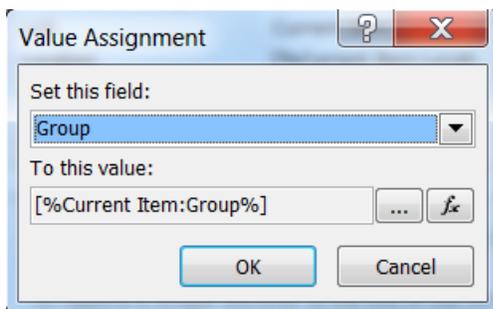
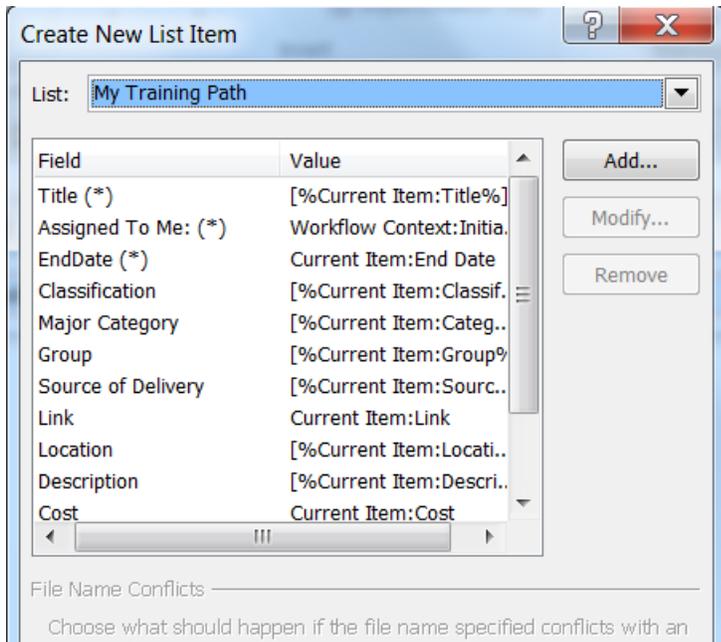


3. Choose to create the item in My Training Path



4. For Title, EndDate, EventDate, Location, Major Category, Group, Classification, Source of Delivery, Link, Cost, Role and Description set the field equal to the value of the Current Item’s Title, End Date, Event Date, Location, Category, Group, Classification, Source of Delivery, Link, Cost, Role and Description (selected by choosing  $f_x$  then choosing “Current Item as the Data Source” and the corresponding fields as determined above).

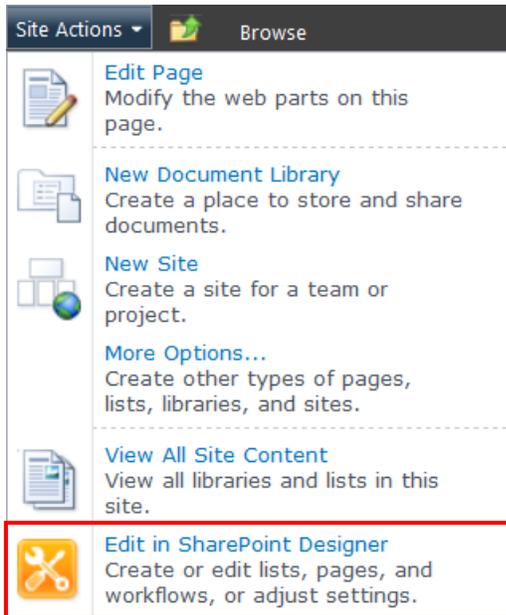
- For “Assigned To Me:”, set the value by choosing the “Data Source to be Workflow Context, and Field” from source to be “Initiator”.



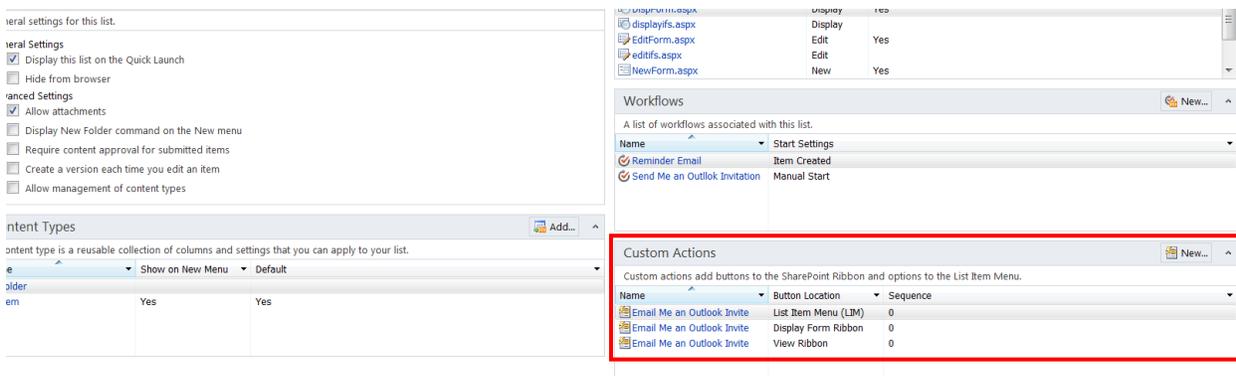
The workflow will add a new list item to the “My Training Path”, which is accessible to the workflow initiator. The workflow initiator shall be able to view it, because the value as “Assigned To Me” is automatically set in the workflow.

## Chapter 5: Custom Actions

Custom Actions are built in SharePoint Designer to allow users to run workflows from buttons that require fewer steps than the normal out-of-the-box method.

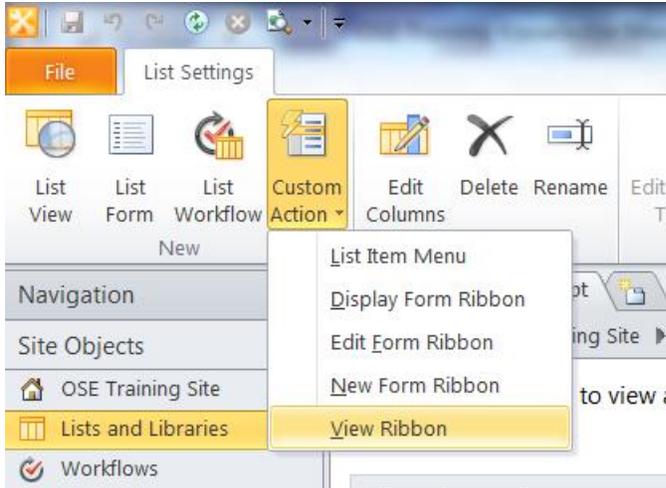


From SharePoint Designer, navigate to lists that have workflows associated with them. For the OSE Training Site, these lists are the Training Materials, My Course Transcript, and My Training Path lists.



For each workflow associated with the list, add buttons for List Item Menu, Display Form Ribbon, and View Button. The process for adding a new Custom Action is as follows in these two steps:

1. Choose the custom action type from the drop-down list



2. Name the button, choose the associated workflow to run, then choose an image to associate with the button.

**Create Custom Action**

Enter a name and description for your new custom action

Name:

Description:

Select the type of action

Custom Actions can be used to run a workflow, show an existing form, or navigate to another Web page.

Navigate to form:

Initiate workflow:

Navigate to URL:

Advanced custom action options

Button image URL (16x16):

Button image URL (32x32):

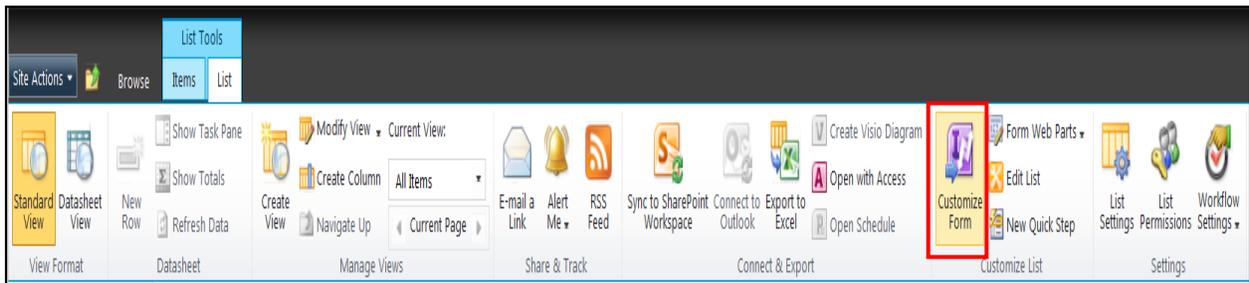
Ribbon Location (Tab.Group ID):

Repeat this process to create “List Item Menu”, “View Ribbon”, “Display From Ribbon” buttons to the following workflows: Register (Training Materials), Register from Training Path (Training Path), Send Me an Outlook Invite (Training Materials), Send Me an Outlook Invitation (My Course Transcript), and Add to My Training Path (Training Materials).

## Chapter 6: Forms

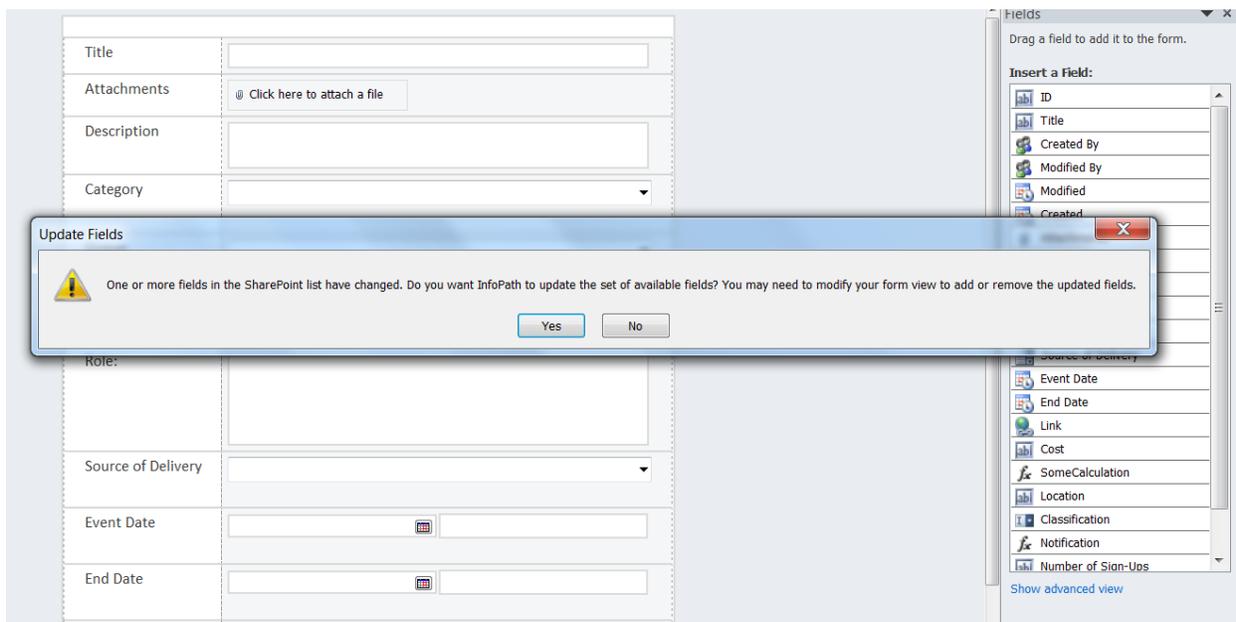
### Navigate to InfoPath Designer

InfoPath Designer allows for the creation of custom forms for the Edit Item, New Item, and View Item forms associated with list items. To edit the form for a list, go to that list and under the “List Tab” of “List Tools”, click “Customize Form” as shown in **Figure 35**.



**Figure 35: Customize a Form**

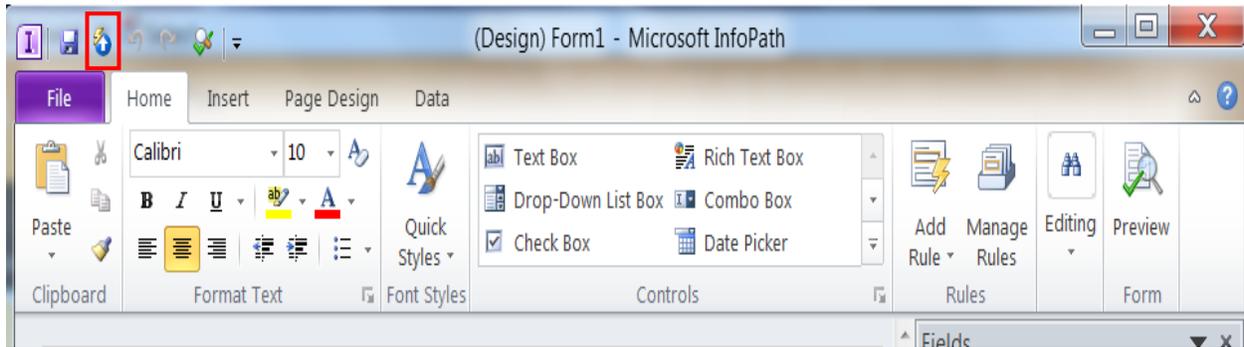
Whenever one of the fields or options for a choice column are updated, the following prompt (**Figure 36**) will appear when opening InfoPath. Click “Yes” to confirm changes so that they can be added to the form. Ensure that this action is taking whenever making any changes to the Training Materials list columns.



**Figure 36: Update Fields in an InfoPath Form**

## Publishing InfoPath Designer Forms

Whenever changes are made to a form, perform a quick publish to save the changes on the site. The publish button for an InfoPath form is located in the top left corner of the InfoPath window. The button is indicated by the red box in **Figure 37** below.



**Figure 37: Publish a Form**

## My Course Transcript

Microsoft InfoPath Designer was used to edit the form for My Course Transcript. Normally a Certificate (hyperlink or picture column) allows for a user to input a URL, but users wanted the ability to attach local files and upload them to SharePoint. The form was rearranged to move the option to attach a file to appear next to the Certificate field. The My Course Transcript list shows the Certificate and Attachment columns next to one another to give it the appearance that they are associated with one another. This method might be improved upon. The form can be seen below in **Figure 38** below.

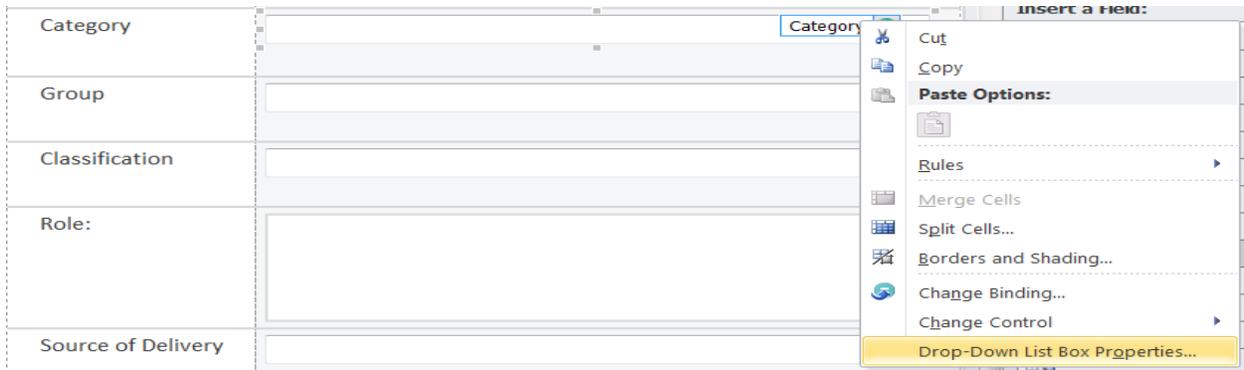
Registered	<input checked="" type="checkbox"/>
Completed	<input type="checkbox"/>
Certificate	 Click here to attach a file
Assigned To Me:	<e-mail addresses>  
<u>EventDate</u>	<input type="text"/> 
<u>EndDate</u>	<input type="text"/> 
Location	<input type="text"/>

**Figure 38: My Course Transcript Custom Form**

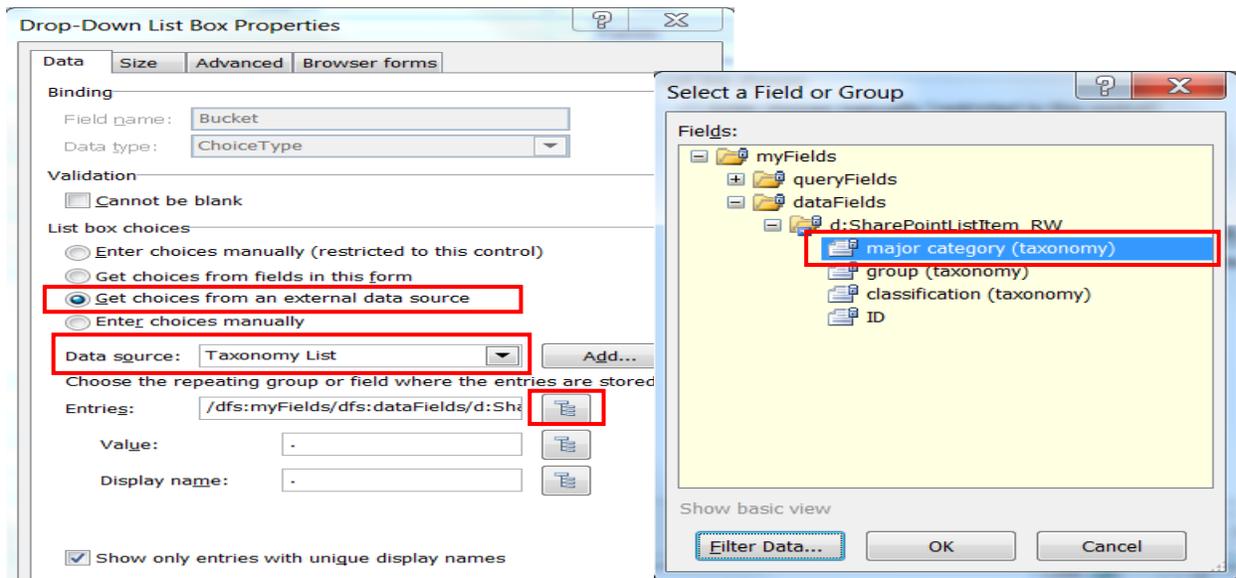


(taxonomy), group (taxonomy), and classification (taxonomy) provide the values for these drop-down menus. The values for each drop-down are then filtered based on the value of the one above them. This process will be demonstrated through the following seven steps.

1. Right click the “Category box” then select the option for “Drop-Down List Box Properties...”



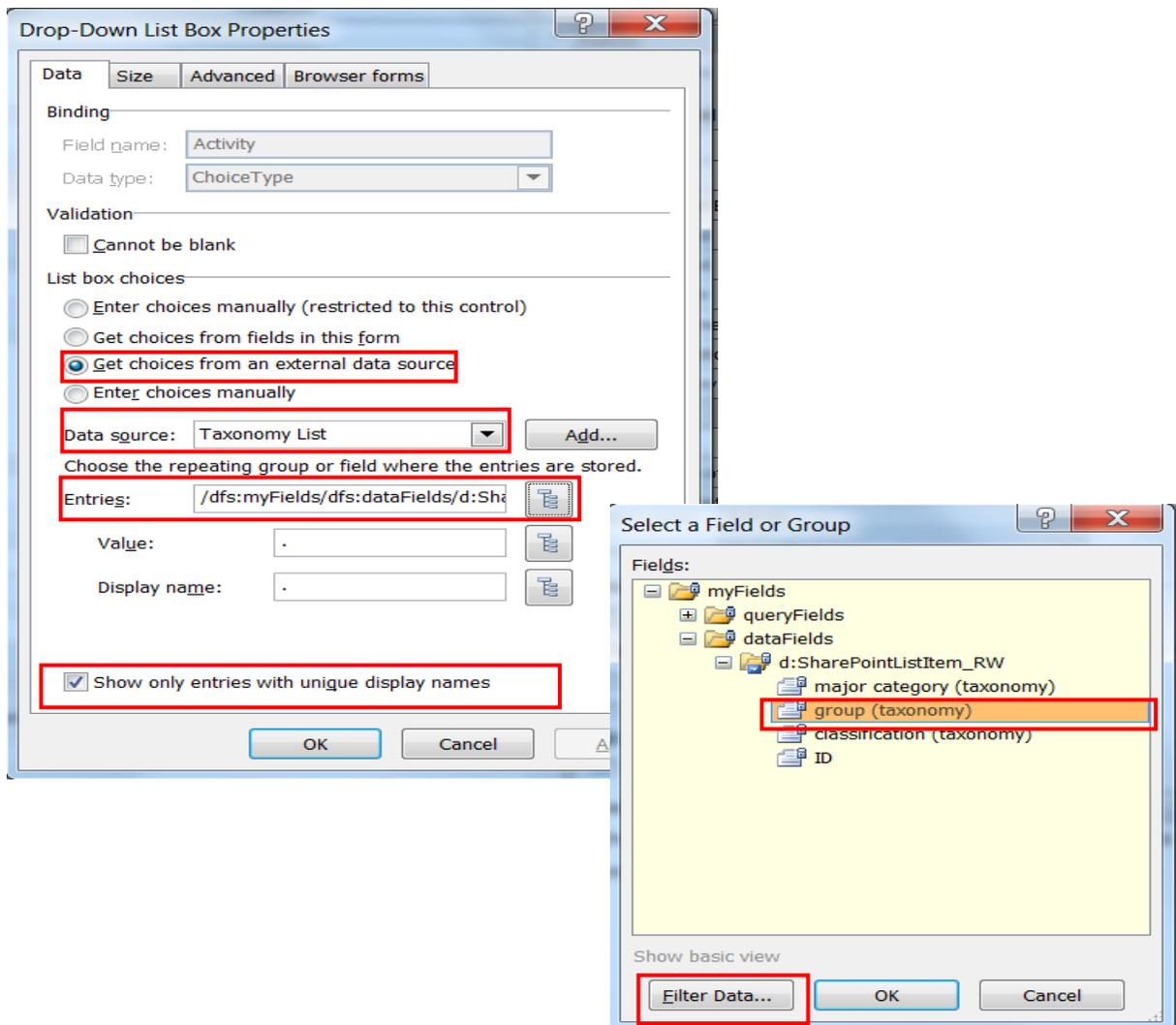
2. Choose to get choices from an external data source. Make sure the Category drop-down is using the Taxonomy List for its Data Source. For the Entries, select “major category (taxonomy)”. Also ensure that the option to show only entries with unique display names is selected.



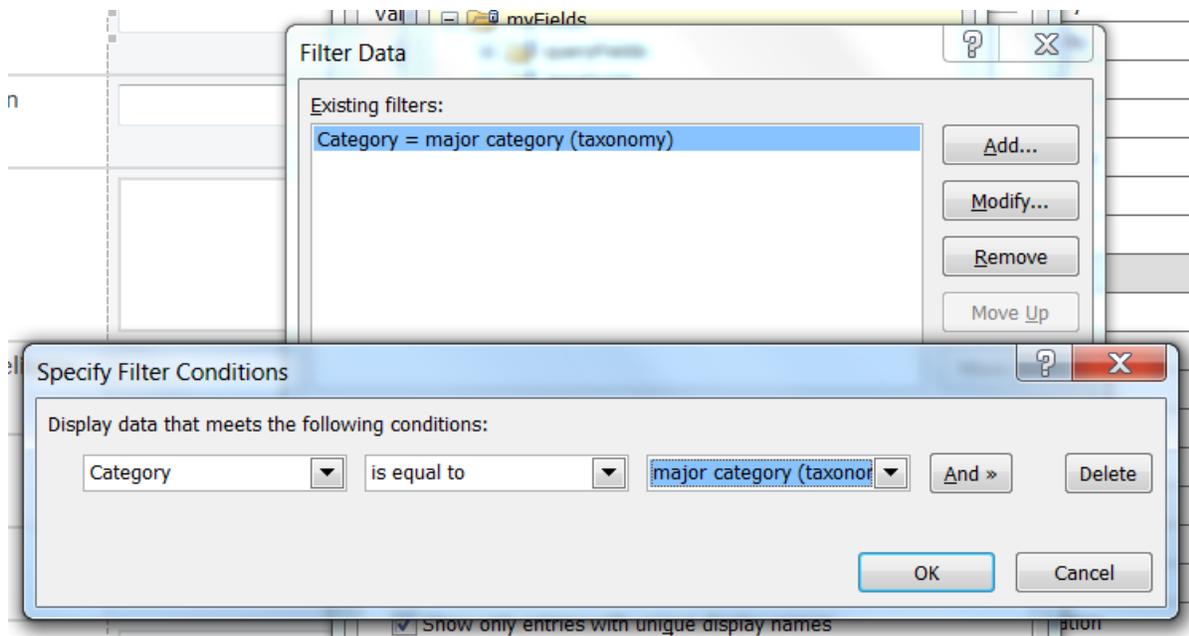
3. Now that the values of Category are being selected from the Taxonomy List major category (taxonomy) column, it is time to move to the group drop-down. In a similar

fashion to step 1, right click the box for the Group column and select the Drop-Down List Box Properties...

4. Similar to the Category Drop-Down, we want to get choices from an external data source, and we want the data source to be Taxonomy List. For the entries, select group (taxonomy).



5. Next, we want to filter the values of group (taxonomy), so click "Filter Data".
6. For the Group drop-down, we want to filter based on whether Category is equal to major category (taxonomy).



7. Repeat the process outlined in Step 4 -6 for the Classification drop-down, but instead filter based data based on whether Group is equal to group (taxonomy).

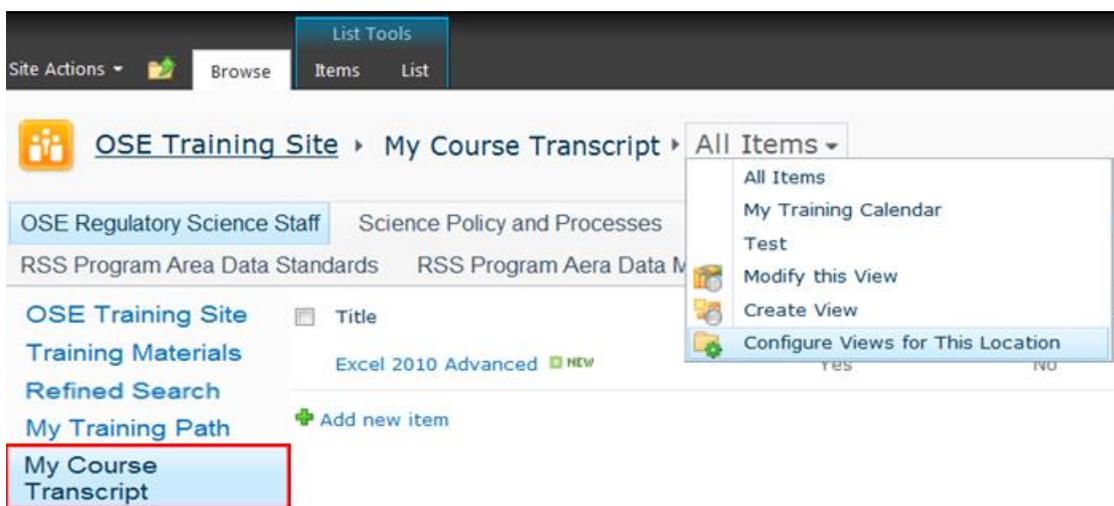
By following these steps, it is possible to enforce the taxonomy create in “Taxonomy List”. Any time that the taxonomy is updated, it is necessary to add the new entries to “Taxonomy List”, add the choices to the given Choice column in Training Materials, then customize then publish the form from InfoPath. The process of updating the taxonomy will be discussed further in the Recommendations portion of this document.

## Chapter 7: Permissions & Access

### Custom Permissions: Supervisory Tracking Tool

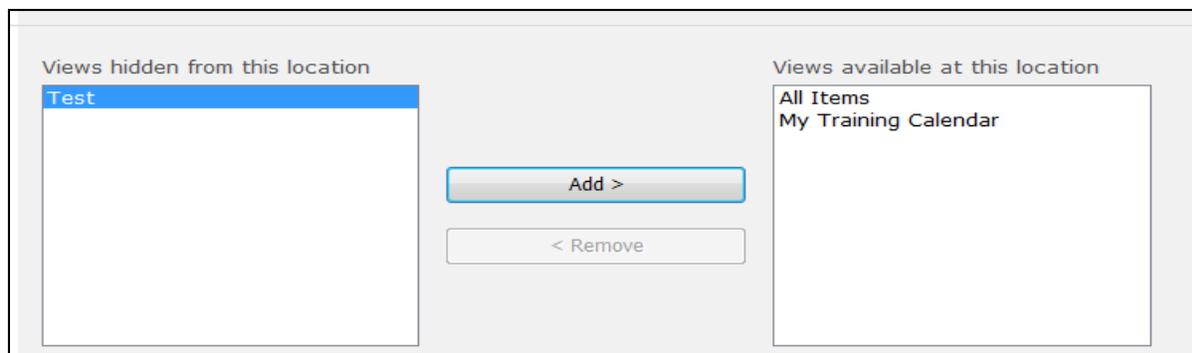
The *Supervisory Tracking Tool* is a view of My Course Transcript, and it is not possible to restrict permissions to a view using out-of-the-box functionality; so a few measures must be taken to try to hide this view from users with non-supervisory permissions.

The first action taken to restrict access to the view is by configuring the views for the location as seen in **Figure 40**.



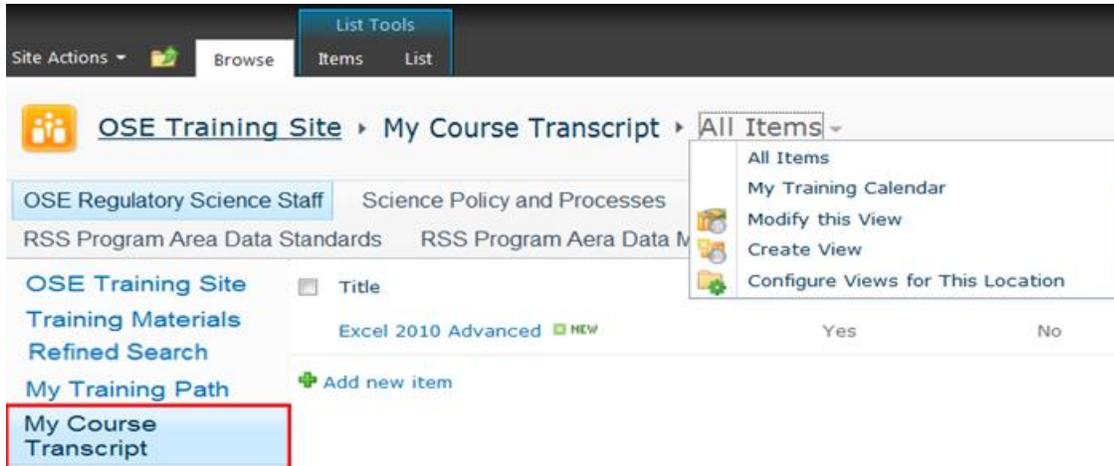
**Figure 40: Configuring Views**

Now it is possible to hide views by adding Test to the Views hidden from this location as shown in **Figure 41**.



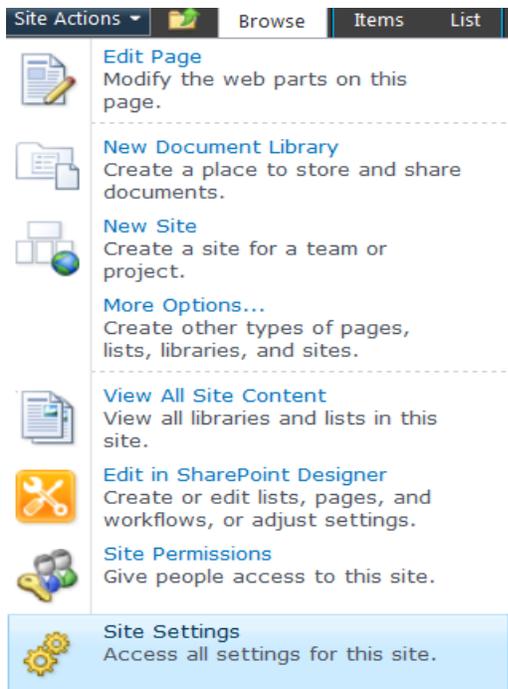
**Figure 41: Configuring views available at a location**

Now if a user (any user) tries to access the Test view of My Course Transcript, it will not be visible as **Figure 42** demonstrates. A normal user will also be unable to configure views for this location so they will only see “All Items” and “My Training Calendar”.



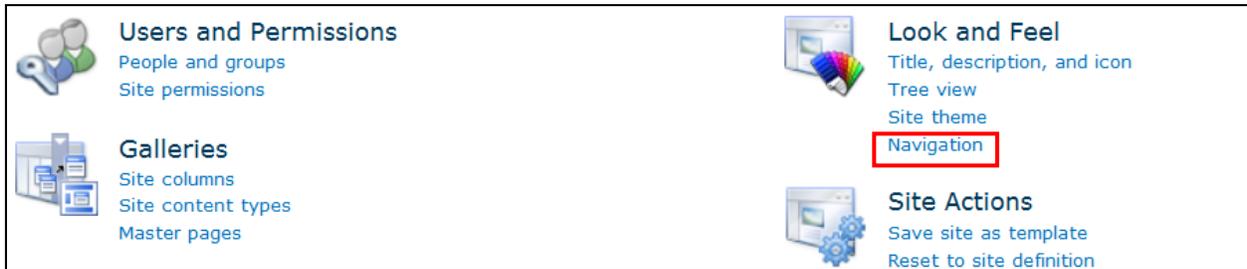
**Figure 42: Missing Test View**

The next way that we limited a user’s ability to see the *Supervisory Tracking Tool* is by adding it to the *Quick Launch bar* by going to the “Site Settings” as shown in **Figure 43**.



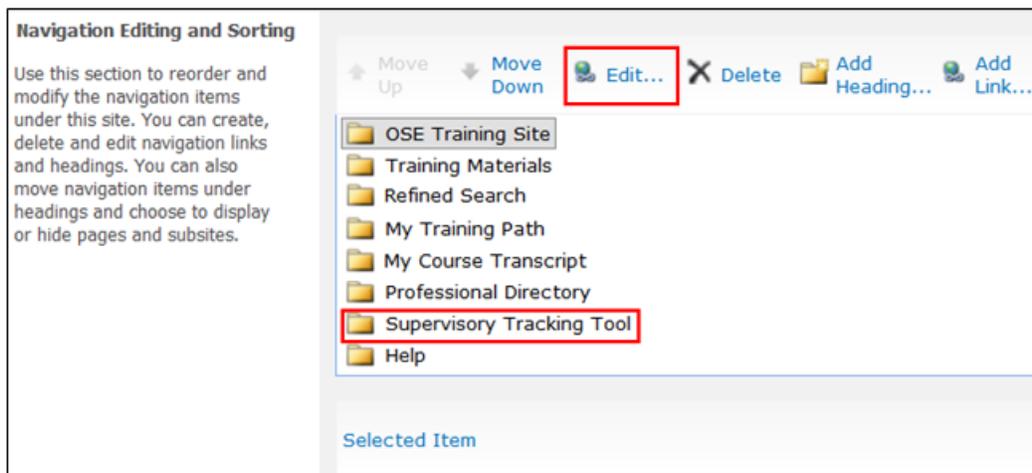
**Figure 43: Accessing Site Settings**

From the “Site Settings”, click the “Navigation” link under the “Look and Feel” section seen in **Figure 44** below.



**Figure 44: Look and Feel -- Navigation**

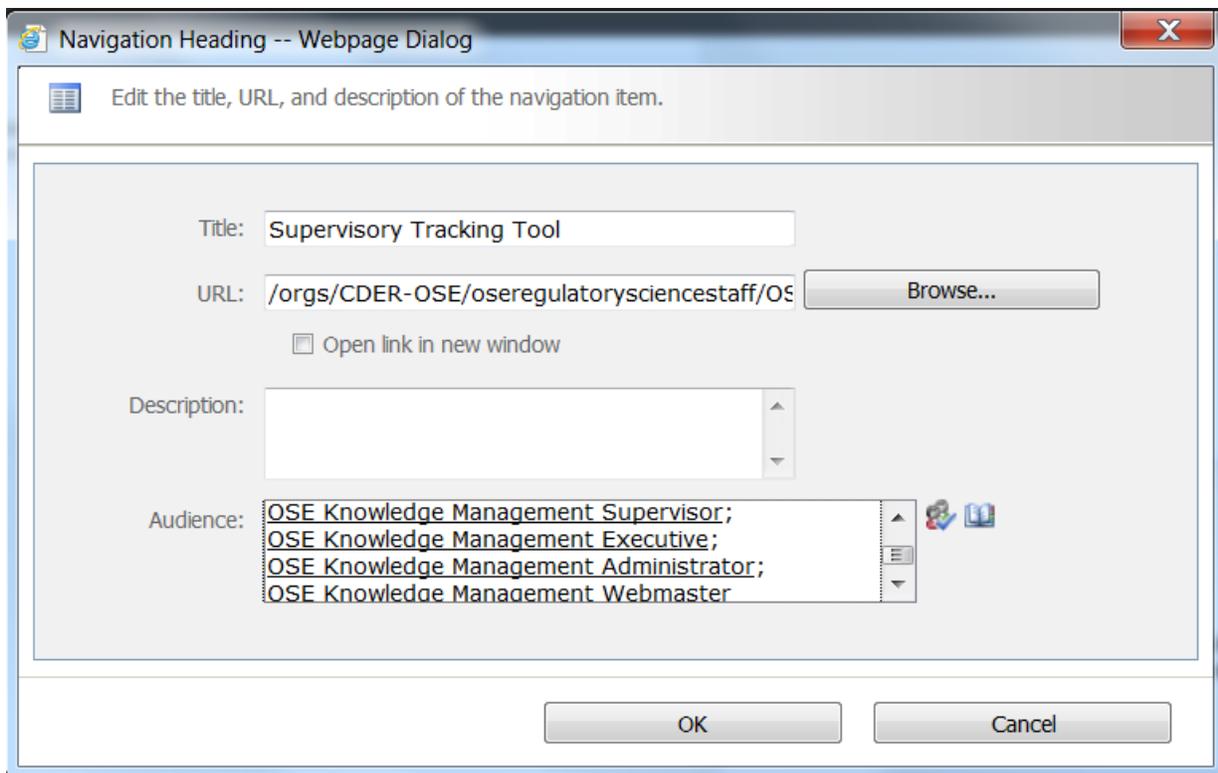
From the “Navigation” page, in the “Navigation Editing and Sorting” section, it is possible to edit all of the links in the *Quick Launch bar*. In specific, we want to edit the audience that can view the link to the *Supervisory Tracking Tool* link. The “Navigation Editing and Sorting” is shown in **Figure 45** below and the *Supervisory Tracking Tool* is indicated by the red box.



**Figure 45: Editing the Supervisory Tracking Tool Link**

The “Edit” button provides the ability to change which permission groups can see the link in the *Quick Launch bar*.

The “Audience” option can be edited to include only the permission groups that include OSE staff members who are supervisors. In **Figure 46**, it is populated by the development team permission group, but in the future the audience will be supervisors and the webmaster.



**Figure 46: Managing Navigation Item Audience**

By removing the ability to navigate to the Test view of My Course Transcript and by restricting the ability to see the *Supervisory Tracking Tool* link from the *Quick Launch bar*, we created a list view that could only be seen and accessed by staff members with specific permissions.

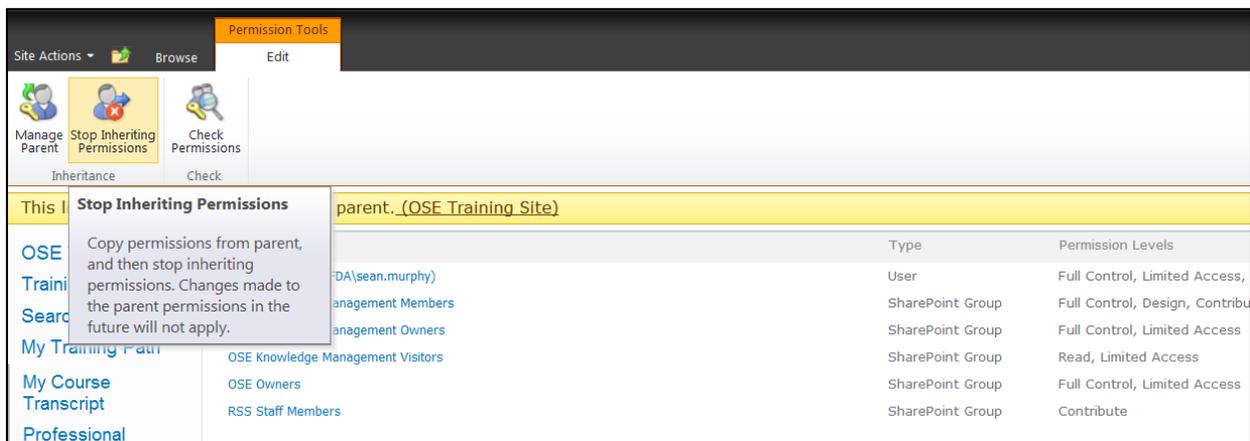
## Custom Permissions: Taxonomy List

Changing the permissions of the Taxonomy List is a process supported by SharePoint out-of-the-box tools. First, it is necessary to navigate to the Taxonomy List through “All Site Content. Open the List” tab under “List Tools”. From there, it is possible to edit the list permissions to give it custom permissions by clicking the List Permissions button as shown in **Figure 47** below.



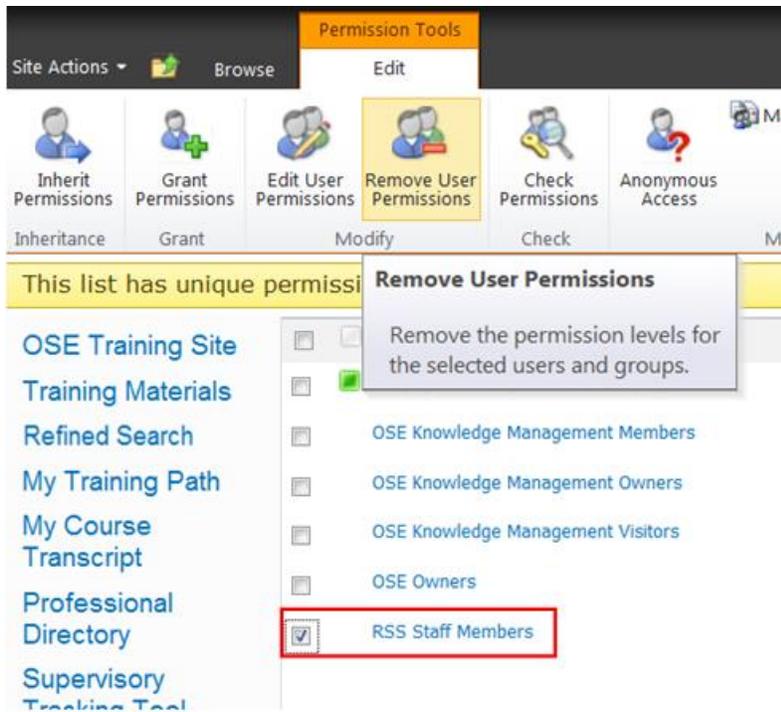
**Figure 47: Editing List Permissions from the View Ribbon**

Once in the “List Permissions” page, it is necessary to stop inheriting permissions from the parent site by clicking on the “Stop Inheriting Permissions” button, which is demonstrated in **Figure 48** below.



**Figure 48: Stop Inheriting Permissions**

After choosing to stop inheriting permissions, it is possible to configure permissions. In this case, select the user group then remove permissions using the “Remove User Permissions” button. This process is shown in **Figure 49** below.

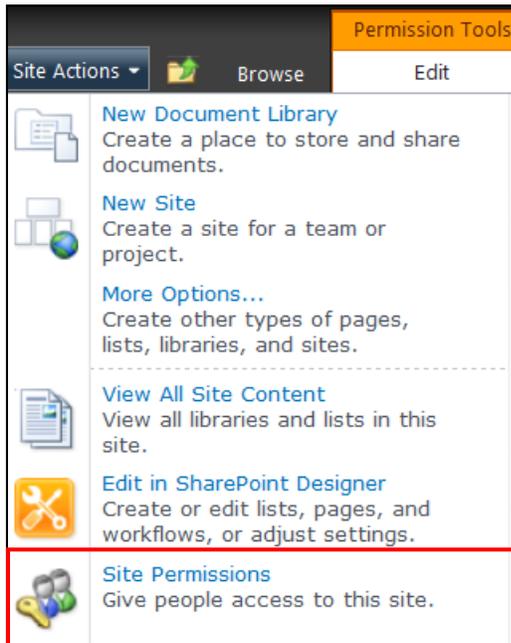


**Figure 49: Removing User Permissions**

The method outlined above is the standard method for creating custom permissions for a given list.

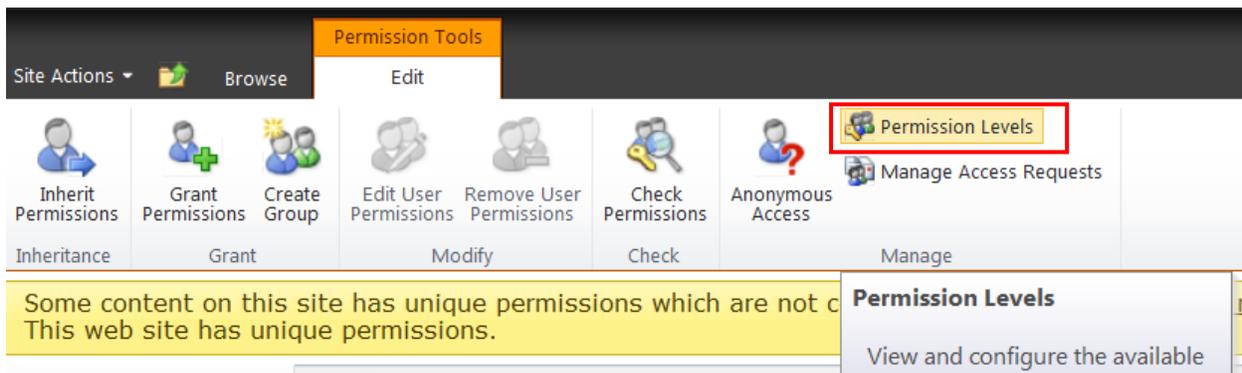
## Editing Permission Levels

In order to configure the permission groups that we are recommending, it is necessary to edit the permission levels available to assign to the permission groups. **Figure 50** shows how to edit the site permissions



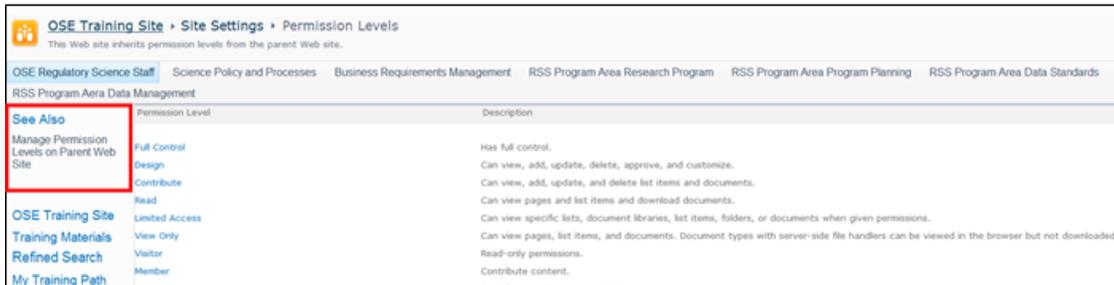
**Figure 50: Accessing Site Permissions from Site Actions**

From the “Site Permissions page”, it is possible to edit Permission Levels as shown in **Figure 51**.



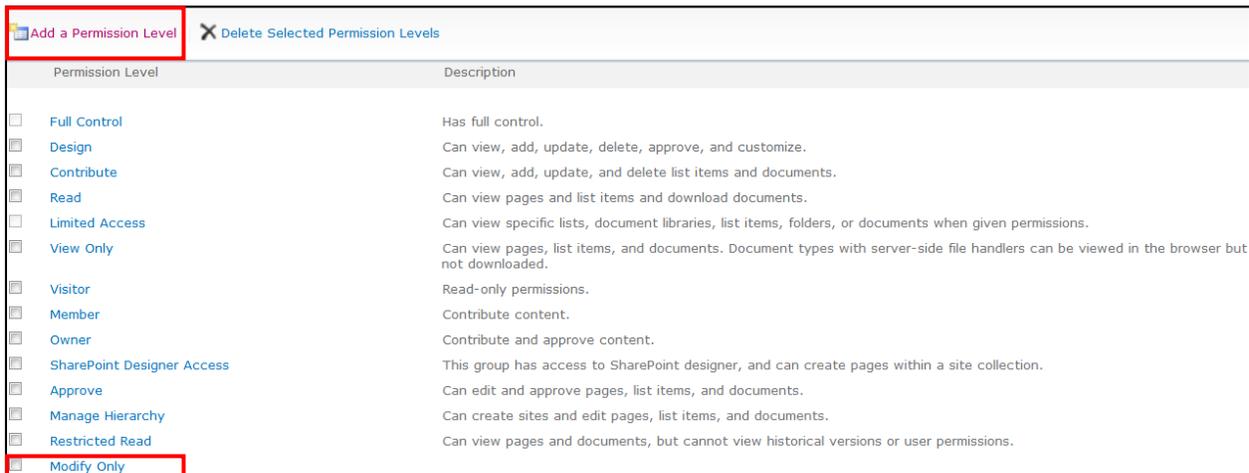
**Figure 51: Editing Permission Levels from the View Ribbon**

Underneath See Also in the top left corner, it is possible to choose to “Manage Permission Levels” on Parent Web Site as seen in **Figure 52**.



**Figure 52: Manage Permission Levels on Parent Web Site**

From this page, it is possible to edit or add new permission levels by clicking either the “Add a Permission Level” button or by selecting one of the existing permission levels as indicated by the two red boxes in **Figure 53**.



**Figure 53: Editing Permission Levels**

Now when configuring, granting, and removing user permissions, it is possible to select the new permission level that was just added as seen in **Figure 53**.

## Chapter 8: Recommendations

### Site Migration

Beware of broken links while migrating the site to the OSE SharePoint site. Places where links may break are the following:

- Hardcoded email links for the iCal Outlook Invite file.
- Hardcoded links in site Navigation settings for the *Quick Launch bar*

Update all links to lists and pages

If something does not work or cannot be found, check the URL to make sure that it is not from the old site location

Also, note that in all of the links for the site, “My Course Transcript” is missing the “r” from “Transcript.” So whenever entering the “My Course Transcript” as a URL, ensure that the “r” is missing (i.e. “My Course Transcript”).

**Until the site is migrated, anyone who does not have access to the RSS SharePoint site will be considered visitors, so they will not be able to use it.**

### New features

To supplement the current architecture and design, the methods for development from the development guide can be used in conjunction with the input of current SharePoint experts and references.

- The idea of shared and personal calendars that can be synced to user’s personal Outlook calendars should also be investigated. For reference, the Project Management team has implemented this functionality in their SharePoint site.
- Users also requested the ability to open all links in a new window.

## Permissions

Add, modify, and manage permission levels and groups. A new level of permission was added for this project called “Modify Only.” The ability for supervisors to use the *Supervisory Tracking Tool* allows them to see anyone’s trainings (not just members of their staffs); so look into whether there is something in a user’s profile that could be used to filter a supervisor’s tracking view to limit it to members of his or staff only.

## Chapter 9: References

The following links were referenced to create and implement different features in the site.

### **Cascading Drop-Downs:**

Gupta, B. (2013, March 7). Create Cascading Dropdown in Browser enabled InfoPath form using InfoPath 2010. Retrieved December 13, 2014, from

<http://blogs.msdn.com/b/bharatgupta/archive/2013/03/07/create-cascading-dropdown-in-browser-enabled-infopath-form-using-infopath-2010.aspx>

Maciolek, J. (2010, May 30). Cascading Drop Downs with InfoPath 2010 Browser Forms.

Retrieved December 13, 2014, from <http://koobarspoint.blogspot.fi/2010/06/cascading-drop-downs-with-infopath-2010.html>

### **Outlook Invites:**

Create .ics file from SharePoint 2010 Calendar which includes attachments. (2013, January 18).

Retrieved December 13, 2014, from [https://social.technet.microsoft.com/Forums/en-](https://social.technet.microsoft.com/Forums/en-US/9d2dc1d5-bb49-493f-bd2c-ecf7cbfce082/create-ics-file-from-sharepoint-2010-calendar-which-includes-attachements?forum=sharepointsearchprevious)

[US/9d2dc1d5-bb49-493f-bd2c-ecf7cbfce082/create-ics-file-from-sharepoint-2010-calendar-which-includes-attachements?forum=sharepointsearchprevious](https://social.technet.microsoft.com/Forums/en-US/9d2dc1d5-bb49-493f-bd2c-ecf7cbfce082/create-ics-file-from-sharepoint-2010-calendar-which-includes-attachements?forum=sharepointsearchprevious)

### **Searching:**

SharePoint 2010 Search list using OOTB Text filter Web Part. (2013, September 25). Retrieved

December 31, 2014, from <http://www.sharepointbreak.com/2013/09/25/sharepoint-2010-search-list-using-ootb-text-filter-web-part/>

## Section 3, Webmaster Guide



# OSE Training KMS Webmaster Manual

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## **Introduction**

SharePoint is the agency standard for collaboration and data management and storage. This site showcases some of the useful features that SharePoint provides to users when performing tasks such as searching, tracking, and scheduling training materials. The aim of this site is to give the OSE staff a one-stop shop and method for tracking the mandatory and recommended training materials provided throughout the agency and beyond. Each part of the site is designed to be as intuitive and user-friendly as possible. This guide is meant to provide further assistance for the OSE Training Site Webmaster. It includes the protocols and procedures that the Webmaster should follow when managing the site. It also includes recommendations that the WPI Team have identified as crucial to the success of the knowledge management system.

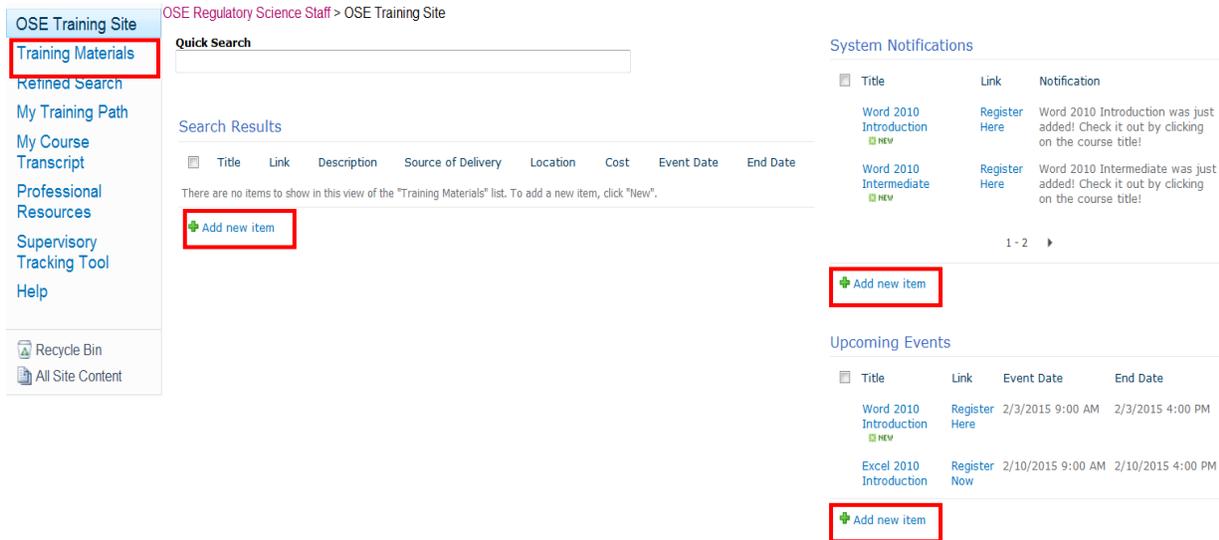
## Chapter 1: Webmaster Duties

The Webmaster's job is described as follows: to carry out the recommendations for future development laid out by the WPI group and keep all of the aspects of the Knowledge Management System current including the technical aspects, training offerings, and users of the system. The Webmaster has multiple duties that he or she must perform in order for the Knowledge Management System to be successful. The following list of duties may evolve over time, but the WPI team defines the following responsibilities to be essential for the Webmaster:

- Maintain a current staff list that contains correctly-spelt names of all current OSE employees in their correct divisions. It is recommended that this list be checked for accuracy on a predetermined, regular basis. Also ensure that all employees belong to the correct permission group as defined in this manual in Chapter 3.
- Update the list of courses as frequently as possible to contain recent and relevant courses. Courses can be found through LMS, insideFDA, Panorama, Adobe Connect, Monday Memo, Emails, etc. Also remove old courses from the Training Materials list that have passed their due date.
- Continually update the Taxonomy to mirror any updates within OSE.
- Receive feedback about the site and collaborate with developers to improve and add to the site's functionality.

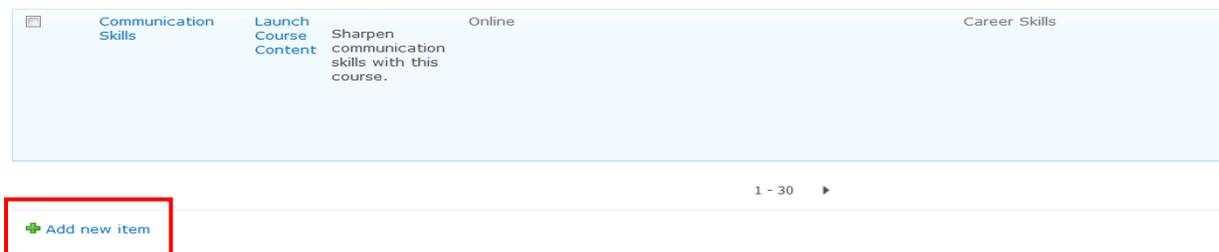
## Chapter 2: Naming Protocol for Training Materials

A new course can be added by clicking the “Add new item” button underneath any of the Training Materials lists. The Training Materials list can be found on the site home page. The places that the “Add new item” button can be accessed or found on the Home Page are shown in **Figure 1**.



**Figure 1: Adding New Courses from the Home Page**

A new item can also be added by clicking on the Training Materials link from the *Quick Launch Bar* which is located in the top left corner of **Figure 1**. Navigating to the Training Materials page will produce a list of 30 list entries followed by the same “Add new item” button, which is at the very bottom of the page. This is shown in **Figure 2**.



**Figure 2** above shows the last visible list item for the Training Materials list and the “Add new item” button underneath it.

By clicking on this button in any of the locations shown in **Figure 1** or **Figure 2**, a form will appear that allows for course information to be entered. New courses will be added using this form. In this form the user can enter new list items to the *Training Materials* list. This form is shown in **Figure 3**.

Title	<input type="text"/>
Attachments	 Click here to attach a file
Description	<input type="text"/>
Category	<input type="text" value="v"/>
Group	<input type="text" value="v"/>
Classification	<input type="text" value="v"/>
Role:	<input type="text"/>
Source of Delivery	<input type="text" value="v"/>
Event Date	<input type="text"/>  <input type="text"/>
End Date	<input type="text"/>  <input type="text"/>
Link	 Click here to insert a hyperlink
Cost	<input type="text"/>
Location	<input type="text"/>

**Figure 3: New Course Form**

This shows the new course form to add new training courses into the OSE Training KMS site. When entering a new course, the Webmaster should follow the naming protocol outlined in **Table 1** below.

**Table 1: Training Course Naming Protocol**

Field	Protocol
<b>Title</b>	The original course title should be kept in order to provide clarity and consistency throughout the differing training course sites.
<b>Attachment</b>	Attach any related presentation slides, documents, etc. here
<b>Description</b>	Keep descriptions as concise as possible. Borrow phrasing from the original source of the training. If it counts toward continuing education, write “Continuing Education: X Credit Hours,” as the first line
<b>Category</b>	Follow the taxonomy dictionary.
<b>Group</b>	Follow the taxonomy dictionary.
<b>Classification</b>	Follow the taxonomy dictionary.
<b>Role</b>	Select all of the roles that apply to this offering. If there is doubt that a role applies to a course, still include it as an option. Consult leadership if necessary.
<b>Source of Delivery</b>	If the training is in-person and provided by the FDA, follow the format as far as it will go: Agency-Center-Office. If the training is online, choose the online option. If it does not fit into any of the options for in-person, add a new option to the choices using the above format, then refresh the form in InfoPath, and then publish it. If it is off-campus, “choose off-campus”.
<b>Event Date</b>	Enter the start date and start time of the course. If there is none, leave this blank.
<b>End Date</b>	Enter the start date and start time of the course. If there is none, leave this blank.
<b>Link</b>	Provide the link to the source of the training. If it is online, make the display name of the link “Launch Course Content.” If it is an in-person course, make the display name of the link “Register Now.” Links for courses housed in the HHS Learning Portal (or LMS) must be the “Offering Deep Link” obtained from an LMS administrator.
<b>Cost</b>	Enter the cost of the course.
<b>Location</b>	If it is on-campus, enter the location in the White Oak Campus. If it is online enter “CBT.” If it is off-campus, provide the address.

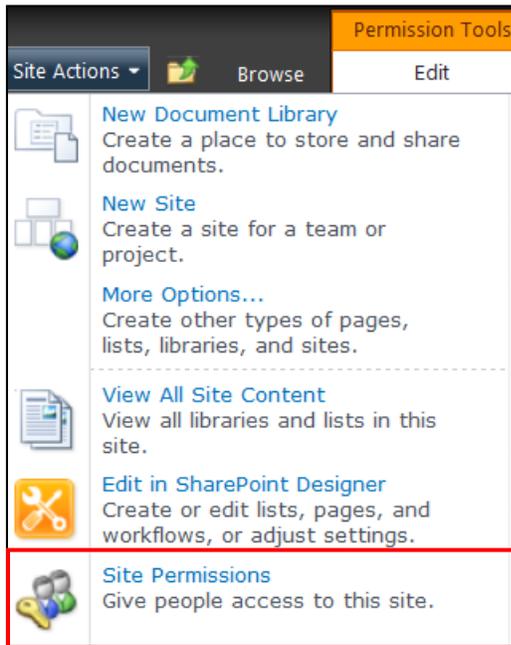
Table 1 contains the protocols for how to enter data into every column when adding new training courses and materials to the SharePoint site.

## Chapter 3: Maintenance of User Groups and Permissions

As mentioned in Chapter 1, the Webmaster is responsible for maintaining accurate records of all OSE staff members. The Webmaster is also entrusted with working with the site developers to keep updated user groups and permission groups.

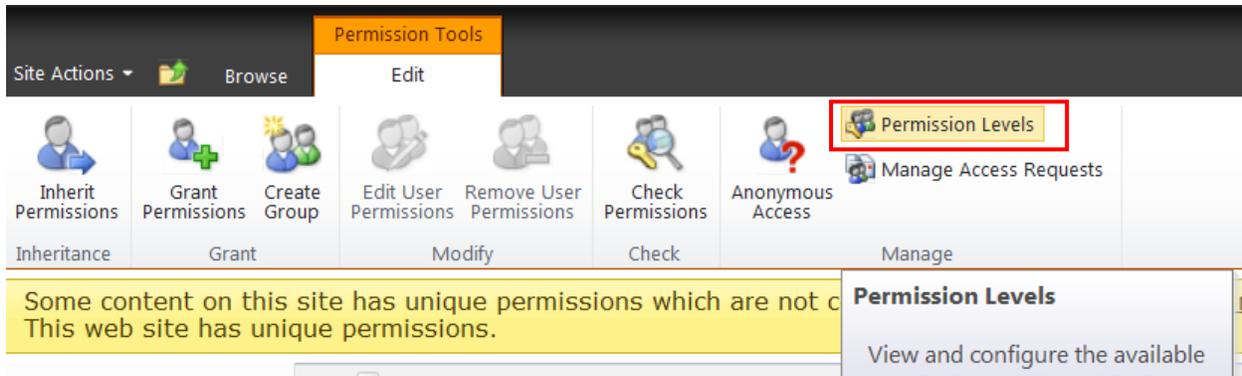
The process for updating and maintaining permissions and permission groups is outlined in a step-by-step manner below.

In order to configure the permission groups that we are recommending, it is necessary to edit the permission levels available to assign to the permission groups. **Figure 4** shows how to edit the site permissions



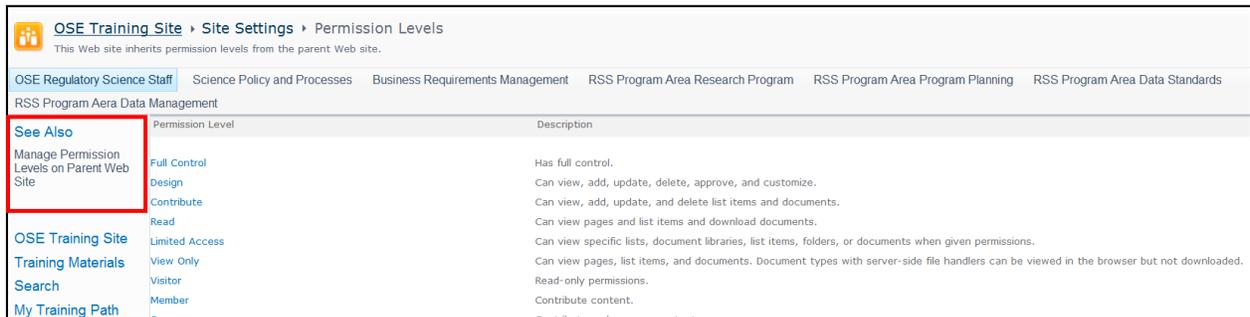
**Figure 4: Accessing Site Permissions from Site Actions**

From the Site Permissions page, it is possible to edit Permission Levels as shown in **Figure 5** on the following page.



**Figure 5: Editing Permission Levels from the View Ribbon**

Underneath “See Also” in the top left corner, it is possible to choose to Manage Permission Levels on Parent Web Site as seen in **Figure 6**.



**Figure 6: Manage Permission Levels on Parent Web Site**

From this page, it is possible to edit or add new permission levels by clicking either the “Add a Permission Level” button or by selecting one of the existing permission levels as indicated by the two red boxes in **Figure 7** on the following page.

Add a Permission Level		Delete Selected Permission Levels	
Permission Level	Description		
<input type="checkbox"/> Full Control	Has full control.		
<input type="checkbox"/> Design	Can view, add, update, delete, approve, and customize.		
<input type="checkbox"/> Contribute	Can view, add, update, and delete list items and documents.		
<input type="checkbox"/> Read	Can view pages and list items and download documents.		
<input type="checkbox"/> Limited Access	Can view specific lists, document libraries, list items, folders, or documents when given permissions.		
<input type="checkbox"/> View Only	Can view pages, list items, and documents. Document types with server-side file handlers can be viewed in the browser but not downloaded.		
<input type="checkbox"/> Visitor	Read-only permissions.		
<input type="checkbox"/> Member	Contribute content.		
<input type="checkbox"/> Owner	Contribute and approve content.		
<input type="checkbox"/> SharePoint Designer Access	This group has access to SharePoint designer, and can create pages within a site collection.		
<input type="checkbox"/> Approve	Can edit and approve pages, list items, and documents.		
<input type="checkbox"/> Manage Hierarchy	Can create sites and edit pages, list items, and documents.		
<input type="checkbox"/> Restricted Read	Can view pages and documents, but cannot view historical versions or user permissions.		
<input checked="" type="checkbox"/> Modify Only			

**Figure 7: Edit Permissions for a Group to include Custom Permission Levels**

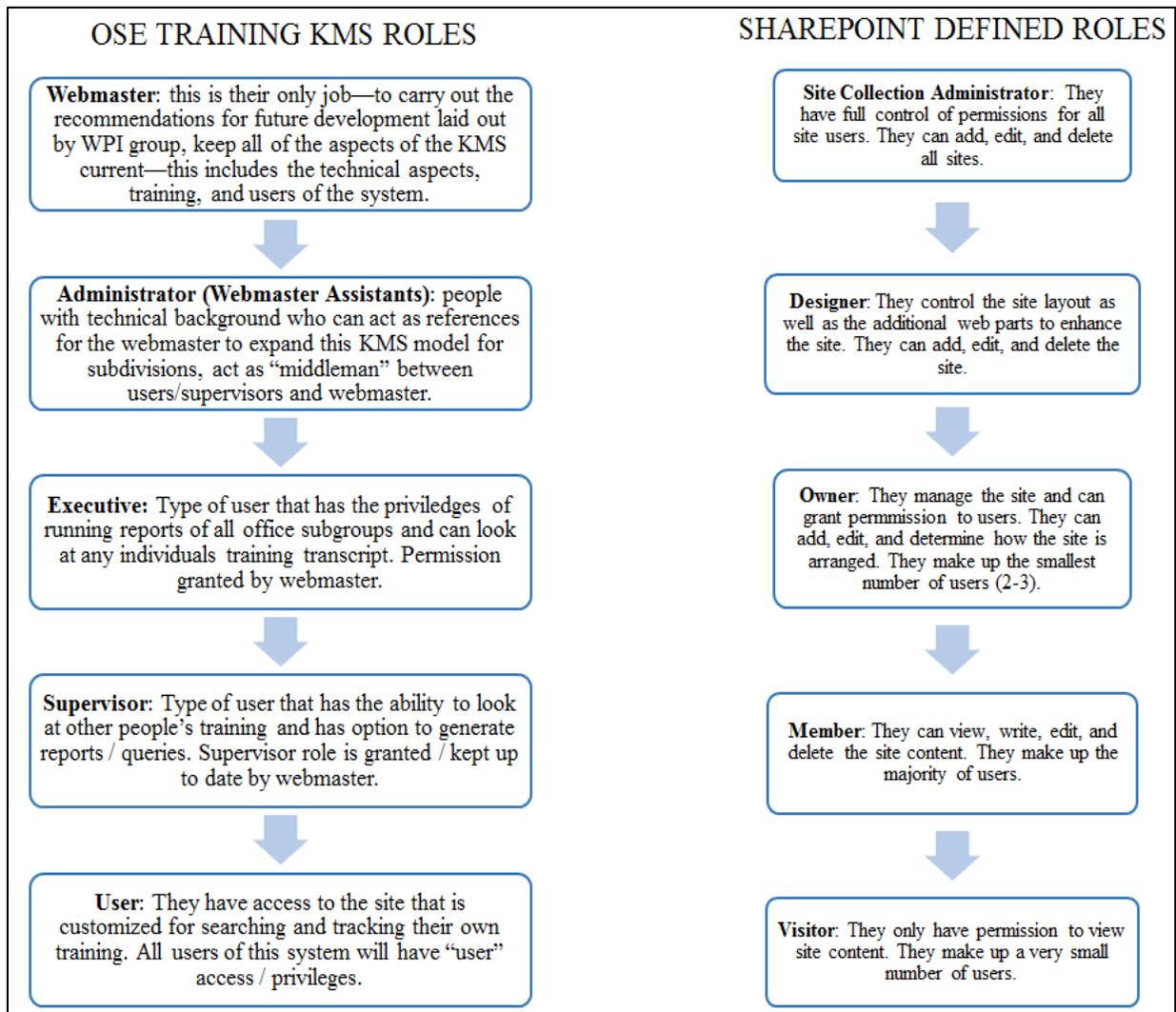
When configuring, granting, and removing user permissions, it is possible to select the new permission level that was just added as seen in **Figure 7**.

Once all correct permission levels have been created, it is possible to create groups with these permission levels. **Figure 8** shows the permission groups associated with the site.

<input type="checkbox"/> OSE Knowledge Management Administrator	SharePoint Group	Full Control, Limited Access, Owner, SharePoint Designer Access, Approve, Manage Hierarchy
<input type="checkbox"/> OSE Knowledge Management Executive	SharePoint Group	Full Control, Limited Access
<input type="checkbox"/> OSE Knowledge Management Members	SharePoint Group	Full Control, Design, Contribute, Limited Access, Owner, SharePoint Designer Access, Approve
<input type="checkbox"/> OSE Knowledge Management Owners	SharePoint Group	Full Control, Limited Access
<input type="checkbox"/> OSE Knowledge Management Supervisor	SharePoint Group	Contribute, Limited Access
<input type="checkbox"/> OSE Knowledge Management User	SharePoint Group	Contribute, Limited Access
<input type="checkbox"/> OSE Knowledge Management Visitors	SharePoint Group	Read, Limited Access
<input type="checkbox"/> OSE Knowledge Management Webmaster	SharePoint Group	Full Control, Design, Limited Access, SharePoint Designer Access, Approve, Manage Hierarchy
<input type="checkbox"/> OSE Owners	SharePoint Group	Full Control, Limited Access

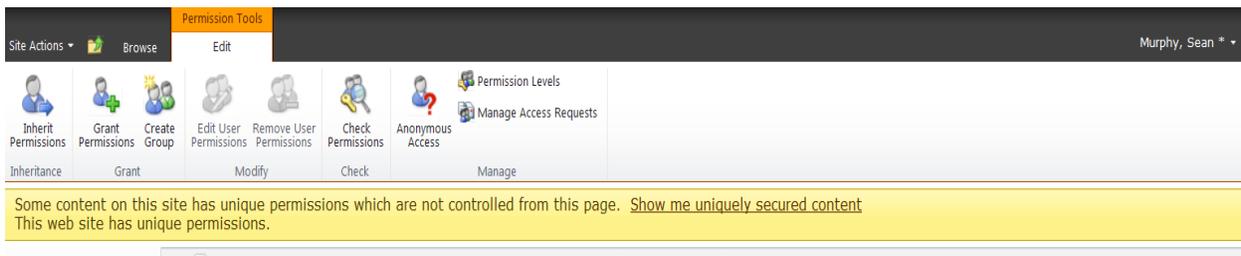
**Figure 8: Permission Groups for OSE Training Site**

The 5 major groups of interest include OSE Knowledge Management Administrator, OSE Knowledge Management Executive, OSE Knowledge Management Supervisor, OSE Knowledge Management User, and OSE Knowledge Management Webmaster. These 5 permission groups directly correspond with the levels of users defined by the WPI Team. The 5 groups are described in detail in the left-hand part of **Figure 9**.



**Figure 9: Permission Groups Defined**

It is possible to see the custom permission settings for Taxonomy List, Training Materials, and My Course Transcript by clicking the “Show me uniquely secured content” link in the Site Permission window as shown in **Figure 10**.



**Figure 10: Show Custom Permission for Lists**

## Chapter 4: Recommendations

The Webmaster will be tasked with the maintenance of the OSE Training Site through both individual efforts as well as delegation to site administrators as necessary. The Webmaster should be familiar with both the User Guide and Developer Guide. It is important for the Webmaster to keep in contact with the current Supervisory Administrator from the Project Management and Analysis Staff (currently Jeremy Lowery) who maintains the employee list to ensure for accurate records and minimal time spent determining whether users of the site are current OSE staff members. It is the Webmaster's responsibility to also add new training offerings to the OSE Training Site as regularly as possible to guarantee that the staff members have access to updated training courses and materials. The Webmaster should also regularly look for and remove courses that have passed their due dates to ensure that all information is up to date and accessible. The Webmaster must also update or modify the taxonomy based on user search tendencies as well as provide methods for feedback on the site to ensure best practices. And lastly it will be the Webmaster's duty to improve the site with help of SharePoint experts and developers. The recommendations are shown in **Table 2**.

**Table 2: Recommendations**

<p>The OSE Training Site is currently located under the RSS SharePoint site rather than the entire OSE SharePoint site.</p>	<p><i>Be cautious when migrating the site, because links may break. Some examples include: the hardcoded link for an iCal Outlook Invite file, hardcoded links in the Quick Launch bar, and updating all links to lists and pages.</i></p>	<p>SharePoint is a web-based platform, so it relies on URL's for navigation and access to information. It is critical that all of the links in the site lead to actual information in the site.</p>
<p>OSE staff members want a personal and staff training calendar that is synchronized with a calendar in SharePoint.</p>	<p><i>Leverage SharePoint's calendar view and create a personal and staff calendar for the site to either replace or supplement the existing calendar.</i></p>	<p>The Project Management team has already accomplished this functionality, and it has worked well for them. This would allow for both scheduling of courses and for employees to see what kinds of courses other staff members are taking.</p>
<p>Permissions are one of the most complicated concepts in SharePoint.</p>	<p><i>Continue to develop permission levels and permission groups for the site.</i></p>	<p>Permissions Boot Camp is currently the only advanced SharePoint course offered by the FDA, because it is an important but complicated concept and feature to implement.</p>
<p>When a team develops a site then leaves, it is often difficult to understand and further their work.</p>	<p><i>Whenever any changes are made or anything is added to the site, document the new functionality. Update it in the developers, user, and webmaster guide as applicable.</i></p>	<p>Our team was instructed to provide support materials and only work with out-of-the-box tools to ensure that the solution is modular and sustainable.</p>

<p>It's very easy to lose the link to a particular SharePoint site and there is no master list at the office, center or agency level.</p>	<p><b><i>Use IT updates to push an OSE Training KMS icon to all desktops in the OSE that directly links to the SharePoint site.</i></b></p>	<p>Staff members will be able to quickly access the link to the training KMS and the problem of locating a link in a million emails is eliminated.</p>
<p>Expertise varies greatly across the office.</p>	<p><b><i>Provide a listing and contact link to people in the office who are the experts on certain subject matters, systems or activities.</i></b></p>	<p>This feature would be especially useful for new employees. It would help everyone to know "who's the lead?" in each subject area and eliminate time spent tracking down the expert.</p>
<p>Many respondents reported that they learn about training through word of mouth.</p>	<p><b><i>Create a menu item that shows popular upcoming courses that people in the office are registered for.</i></b></p>	<p>If a staff member is unsure about which training they need, seeing who in the office is taking what training can help them identify training that could be useful based on similarities.</p>
<p>Office wide definitions of certain words vary.</p>	<p><b><i>As a webmaster duty, continue to expand the taxonomic dictionary where users can see the office accepted definition of the terms included in drop down menus.</i></b></p>	<p>Continuation of this feature will allow for standardization of vocabulary associated with training in the office and increase user ease of navigation.</p>

**Table 2** Shows specific recommendations for maintenance and future development for the OSE Training KMS.

## Appendix F

ROADBLOCK	RECOMMENDATION	EXPLANATION
SharePoint skills vary greatly across the entire FDA.	<b><i>Require SharePoint training across the board for all FDA staff, since SharePoint is the only collaborative platform utilized by FDA as of October 2014.</i></b>	In order to benefit from the many useful features of SharePoint, staff members must attend training. The SharePoint contractor experts offer informative training courses that help explain all levels of SharePoint use. Many features of SharePoint would not be used to their full potential if not explained by the experts.
Staff specific training is undefined.	<b><i>Define staff training requirements for each staff and division within the OSE.</i></b>	Ensuring that an entire staff has standardized, baseline knowledge can increase efficiency by making it very clear what everyone should know and also eliminating extraneous explanations to get everyone up to speed during meetings.
Role specific training is undefined.	<b><i>Define role specific standardized training requirements for the six main roles within the OSE.</i></b>	Role standardized training guarantees that all members of a project team share similar background knowledge and can increase project quality and efficiency.
Inaccurate staff lists create confusion when aiming for 100% compliance with mandatory training.	<b><i>Develop a standard operating procedure (SOP) for the maintenance of staff lists.</i></b>	With the new 100% training compliance initiative staff, lists have become even more important. Quarterly, biannual, or annual maintenance of staff lists would add to the efficiency of tracking training.

<p>Courses in LMS are not named consistently.</p>	<p><b><i>Follow a naming protocol when creating new courses in this OSE Training KMS.</i></b></p>	<p>A naming protocol will eliminate any confusion as to which office is offering a course or the course delivery type. Standardizing the way courses are titled can help increase the efficiency of searched within any database.</p>
<p>Course descriptions do not follow any sort of protocol.</p>	<p><b><i>For the short course descriptions in SharePoint, follow a procedure to maximize search accuracy.</i></b></p>	<p>In SharePoint, the administrator can set which fields are included in keyword searches. As it stands, the search includes the title and description. The information in the description directly effects how the search results are returned. Certain information should be included in each course description, outlined in the results section on course entering procedure.</p>
<p>It seems common for projects to become static after initial implementation.</p>	<p><b><i>Devote a full time position to the management and further development of this KMS and OSE web page.</i></b></p>	<p>KMS systems of this kind require a curator in order to overcome the incapability of the training sources to communicate with outside systems.</p>

<p>IT Contractors are commonly hired to create complex systems for the use of FDA employees, but they are denied access to internal sites their systems will link to.</p>	<p><b><i>Allow contractors some form of limited access to internal systems that are necessary to their jobs.</i></b></p>	<p>Access and analysis of systems that a new system will link to is essential to create communication pathways between the two systems. For example if an IT contracting team is hired to create a training SharePoint, it should have access to internal training sites such as LMS in order to effectively link the two systems. This seems to be a fundamental flaw in the system. For example, the contractors developing CDERPoint have created some great features. However, these features are not possible with courses listed in LMS. The contractors are not aware of this. Thus they can determine a solution to link the two systems together.. A restricted user level in LMS that hides sensitive information could be created to allow contractors into LMS. Access could also be monitored to ensure that no confidential information was being accessed.</p>
<p>Contractors have very limited collaboration with stakeholders.</p>	<p><b><i>Increase contractor collaboration with stakeholders during the development process.</i></b></p>	<p>Continuous collaboration between project contractors and stakeholders increases the value of the product and the impact of the project.</p>

<p>FDA blocks the SharePoint feature “management metadata”</p>	<p><b><i>Allow selected access to manage metadata to use SharePoint to its full potential.</i></b></p>	<p>Manage Metadata could make the OSE Training KMS much better FDA is not unwarranted in blocking the feature; however this privilege should be evaluated on a case-by-case basis as it can greatly increase the user experience in certain cases.</p>
<p>New employees across the office often don’t know what training to take after they get through the necessary onboarding and clerical tasks.</p>	<p><b><i>Define/update learning tracks for new employees in each role.</i></b></p>	<p>Inclusion of up to date learning tracks (commonly known as “swim-lanes” in the OSE) in the Training KMS would help new employees stay on task and get up to speed efficiently when joining the office.</p>
<p>Office wide definitions of certain words vary.</p>	<p><b><i>As a webmaster duty, continue to expand the taxonomic dictionary where users can see the office-accepted definition of the terms included in drop down menus.</i></b></p>	<p>Continuation of this feature will allow for standardization of vocabulary associated with training in the office and increase user ease of navigation.</p>
<p>Many respondents reported that they learn about training through word of mouth.</p>	<p><b><i>Create a menu item that shows popular upcoming courses that people in the office are registered for.</i></b></p>	<p>If a staff member is unsure about which training they need, seeing who in the office is taking what training can help them identify training that could be useful based on similarities.</p>

<p>It's very easy to lose the link to a particular SharePoint site and there is no master list at the office, center, or agency level.</p>	<p><b><i>Use IT updates to push an OSE Training KMS icon to all desktops in the OSE that directly links to the SharePoint site.</i></b></p>	<p>Staff members will be able to quickly access the link to the training KMS and the problem of locating a link in a myriad of emails is eliminated.</p>
<p>Expertise varies greatly across the office.</p>	<p><b><i>Provide a listing and contact link to people in the office who are the experts on certain subject matters, systems or activities.</i></b></p>	<p>This feature would be especially useful for new employees. It would help everyone to know "who's the lead?" in each subject area and eliminate time spent tracking down the expert.</p>
<p>Contract leaders must receive a spreadsheet of which contractors have completed mandatory training and from there they must inform the project managers of which contractors are non-compliant with the FDA required training materials.</p>	<p><b><i>An up to date list of contractors should be maintained at all times.</i></b></p>	<p>As the contractors completed mandatory training the contract leaders would be able to track who has completed which trainings.</p>
<p>Supervisors expressed challenges in having every employee complete an Individual Development Plan (IDP).</p>	<p><b><i>Directly Link the IDP to the OSE Training KMS.</i></b></p>	<p>A link to the IDP will help more staff members use it. IDPs also help staff members feel valued and have a career plan. Currently 60% of the office has an IDP.</p>

<p>Through interviews and meetings with both contractors and IT specialists, our team learned that there have been similar projects to ours that the OSE was largely unaware of, and each project was taking its own approach.</p>	<p><b><i>The FDA should form better means of communication between offices and divisions when undertaking technical projects such as database development.</i></b></p>	<p>This leads to standalone, non-compatible systems that cause problems with collaboration and problems with sharing of information across divisions. It also results in wasted resources, because a single, coordinated directive and solution to a problem will take less time and money to create and implement.</p>
<p>The OSE Training Site is currently located under the RSS SharePoint site rather than the entire OSE SharePoint site.</p>	<p><b><i>Be cautious when migrating the site, because links may break. Some examples include: the hardcoded link for an iCal Outlook Invite file, hardcoded links in the Quick Launch bar, and updating all links to lists and pages.</i></b></p>	<p>SharePoint is a web-based platform, so it relies on URL's for navigation and access to information. It is critical that all of the links in the site lead to actual information in the site.</p>
<p>OSE staff members want to be notified by email when a training course that they have registered for is upcoming.</p>	<p><b><i>Create a workflow that sends an email reminding a user that a training course is upcoming a few days before its due date.</i></b></p>	<p>When attending the SharePoint introduction class, only 10 /18 of the registered employees actually attended. If these people were reminded, they could have attended. Also, other employees were on the wait list and could have attended if the other people remembered to un-enroll.</p>

<p>OSE staff members want a personal and staff training calendar that is synchronized with a calendar in SharePoint.</p>	<p><b><i>Leverage SharePoint's calendar view and create a personal and staff calendar for the site to either replace or supplement the existing calendar.</i></b></p>	<p>The Project Management team has already accomplished this functionality, and it has worked well for them. This would allow for both scheduling of courses and for employees to see what kinds of courses other staff members are taking.</p>
<p>Permissions are one of the most complicated concepts in SharePoint.</p>	<p><b><i>Continue to develop permission levels and permission groups for the site.</i></b></p>	<p>Permissions Boot Camp is currently the only advanced SharePoint course offered by the FDA, because it is such an important but complicated concept and feature to implement.</p>
<p>When a team develops a site then leaves, it is often difficult to understand and further their work.</p>	<p><b><i>Whenever any changes are made or anything is added to the site, document the new functionality. Update it in the developers, user, and webmaster guide as applicable.</i></b></p>	<p>Our team was instructed to provide support materials and only work with out-of-the-box tools to ensure that the solution is modular and sustainable.</p>
<p>There is a variety of different forms throughout the OSE and it is often difficult for employees to locate these forms.</p>	<p><b><i>A "Tools &amp; Templates" button can be added to include a library of important documents.</i></b></p>	<p>These documents can include the swim lanes for each of the differing roles in the office, links to blank SF-182 forms, IDPs etc.</p>
<p>Employees become frustrated when the entire office or team receives emails of noncompliance when they actually are in compliance.</p>	<p><b><i>Avoid sending out email reminders to entire staff.</i></b></p>	<p>Supervisors will be able to see which employees have completed training. For employees that are not in compliance, they will be able to send them direct email reminders and monitor certificates.</p>

**Table 6.1: Roadblocks and Recommendations** includes detailed recommendations for the future of the OSE Training KMS.