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University of Utah
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NTC Quarterly Report
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Executive Summary

STAFF CHANGES

Lindee Radtke, Program Manager, resigned on February 8, 2013. She was replaced by Russel Henricksen on February 11, 2013. Mr. Henricksen resigned as of April 30, 2013.

Sharon Brown, Trainer / Curriculum and Content Specialist, retired on March 29, 2013.

CLASSES TAUGHT

The NTC and NLM taught three sessions of the hybrid class PubMed® for Trainers. The in-person locations were: Bethesda, MD; Los Angeles, CA; and Shreveport, LA.

The NTC and NLM taught two sessions of the in-person TOXNET® and Beyond class in Shreveport, LA and Bethesda, MD.

The NTC delivered the online class "PubMed for Librarians" in February 2013 and April 2013. PubMed for Librarians consists of five 90-minute segments taught via Adobe Connect; participants can choose to attend any of the segments that interest them. The five segments are: "Introduction to PubMed"; "Medical Subject Headings (MeSH)"; "Automatic Term Mapping (ATM)"; "Building and Refining Your Search"; and "Customization - My NCBI."

CLASSES UNDER DEVELOPMENT

The NTC trainers created a class plan, video scripts, and hands-on exercises for an online class called "Discovering TOXNET: From Paracelsus to Nanotechnology." The class will be taught in two independent segments; participants can choose the segments that interest them.

The class will be taught as a "flipped class." During the first two weeks of the class, participants will work independently on their own time. Class activities include viewing short instructional videos and completing an assignment related to each database. Participants will turn the assignments into the instructors at the end of the two week period.

During the third week, the class will meet as a group via Adobe Connect; activities will include reviewing the assignments, answering questions, and working through reference questions submitted by the participants.

The scripts for Segment 1 of the class were submitted to NLM for review in April 2013. A beta class will be taught in the summer of 2013.

NCBI TRAINING

"The Librarian's Guide to NCBI" is a collaborative project between NTC, NLM, NCBI trainers, and Diane Rein, Ph.D. The first iteration of the class was delivered in two parts during the fourth quarter:

1. "Fundamentals in Bioinformatics and Searching," a three-week, online, (asynchronous) self-paced pre-course, delivered from March 4-25, 2013 via Moodle.
2. A subsequent 5-day in-person course delivered on-site at the National Library of Medicine in Bethesda, Maryland, April 15-19, 2013.

The class provides basic knowledge and skills for librarians interested in helping patrons

to use the online molecular databases and tools available from NCBI. It is expected that, following the class, participants will be able to improve their ability to initiate or extend bioinformatics services at their institution.

Diane Rein, Ph.D., M.L.S., Bioinformatics and Molecular Biology Liaison from the Health Science Library, University at Buffalo, developed and taught the "Fundamentals" portion of the class. Dr. Rein and NCBI staff taught the 5-day in-person workshop. The "Fundamentals" class was worth 15 hours of MLA CE and the 5-day workshop was worth 36 hours of CE.

Admission to the class required potential students to submit an application form and provide a supervisor statement. Forty one applications were received for 18 seats. Janet Zipser, Sharon Dennis, Diane Rein, Eric Sayer and Peter Cooper selected applicants in mid-February 2013. Twenty two applicants were accepted into the "Fundamentals" online course with three on the waiting list for the in-person workshop. Due to the exemplary performance of the waiting list applicants during the "Fundamentals" portion of the class, all applicants were accepted into the 5-day workshop. The completion rate for both classes was 100%.

The "Fundamentals" class required students to complete seven assignments; in particular, the molecular vocabulary and NCBI discovery exercises required a great deal of time and thought on the creation end by the facilitator and the instructor, as well as on the part of the participants. Dr. Rein provided feedback to the students and assembled a master answer sheet for both exercises using answers from the students. In particular, one student provided a definition for "gene" that Dr. Rein judged "the best I have ever seen." As evidenced by the quality of the answers to the various exercises, marrying the concept of an online asynchronous course with the academic-style lecture seems to have drawn the majority of students into successfully self-learning the often complex bioinformatics material.

IMPROVEMENTS TO CLASSES

"PubMed for Librarians" was increased from one hour segments to 90 minute segments based on feedback from participants who attended the January 2013 series. Increasing the classes to 90 minutes allowed more time for the instructors to answer questions from participants.

TECHNICAL CHALLENGES

The NTC trainers continued to experience technical difficulties with Adobe Connect. Major disruptions occurred during the February PubMed for Librarians classes. The trainers have notified NIH Support about various problems but have not received resolution, and the problems are often different from session to session.

CLASS ATTENDANCE CHALLENGES

Despite allowing for up to 70 registrants per segment and offering classes in February, April, June, July, and September of 2013, most of the "PubMed for Librarians" segments reached the maximum registration within a few days of opening the class for registration. The average attendance rate of the classes to date is 59%. Balancing the registration demand for this class versus the actual attendance rate is an on-going challenge that the trainers will need to address in Option Year 2.

NTC and NLM trainers are also taking steps to ensure that participants registered for "PubMed for Trainers" are librarians who are training others; we are guiding those who say they only want to learn more about PubMed into "PubMed for Librarians."

FOLLOW-UP EVALUATION PROJECT

NTC and NLM trainers worked with Cindy Olney, President of CO Evaluation Consulting LLC, to design a follow-up questionnaire that was administered to participants of PubMed for Trainers and TOXNET and Beyond from May 2011 through October 2012. The purpose of the questionnaire was to determine behavioral changes that may have occurred as a result of the training, particularly related to search efficiency and/or improved training techniques.

The questionnaire was sent to training participants who had completed PubMed for Trainers in 2012 or TOXNET and Beyond between June 2011 and October 2012. The questionnaire received excellent response, with 200 (70%) of 287 participants returning the questionnaire.

Participant response to PubMed for Trainers was consistently positive. Eighty-nine percent said the class was the worth the time and effort invested. Most said that PubMed for Trainers improved their efficiency in performing PubMed searches (96%), their skill in conducting searches for others (96%), and their ability to help others use PubMed (97%). Eighty-four percent have used or plan to use class information to create or improve training, and 71% have used or plan to use the information for library materials. The class inspired 42% of respondents to try new teaching techniques. Respondent feedback indicated, unequivocally, that respondents left the class with improved ability to help their users with PubMed, but some said they expected the class to include more information about formal teaching techniques. Recommendations for improving the class included more search exercises and adjustment to time management (e.g., longer course; more in-person training time).

TOXNET and Beyond also received a positive response from questionnaire participants, with almost all of them agreeing that their time was well spent in the class and that the class covered expected information. Sixty-two percent of respondents said they had used TOXNET after taking the class. Most respondents reported using the information from the TOXNET and Beyond class after completing the class. Most frequently, respondents said they shared information about TOXNET with colleagues. Most respondents said they used or planned to use TOXNET as a research tool to answer reference or personal questions. The most frequent recommendations for improving the class were related to time management of the class, such as lengthening class time or providing pre-session work followed by hands-on instruction.

Training Events

TABLE 1. Training Sessions

Session Content	Start Date	End Date	City/State	Trainers	Activity Conducted In-person	Activity Conducted Remotely	# Participants
PubMed for Trainers	2/25/2013 12:00:00 AM	3/12/2013 12:00:00 AM	Shreveport, LA	Sharon Brown, Rebecca Brown, Jessi Van Der Volgen	Y	Y	17
PubMed for Librarians - Building	2/28/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	21
Fundamentals of Bioinformatics and Searching	3/4/2013 12:00:00 AM	3/25/2013 12:00:00 AM	Online	Diane Rein	N	Y	22
PubMed for Trainers	3/12/2013 12:00:00 AM	3/21/2013 12:00:00 AM	Bethesda, MD	NLM Trainers	Y	Y	9
TOXNET and Beyond	3/13/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Shreveport, LA	Sharon Brown, Rebecca Brown	Y	N	17
PubMed for Librarians - Introduction	4/2/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	35
PubMed for Librarians - MeSH	4/4/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	43
PubMed for Librarians - ATM	4/9/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	49
PubMed for Librarians - MeSH	2/20/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	38
TOXNET and Beyond	2/21/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Bethesda, MD	NLM Trainers	Y	N	5
PubMed for Librarians - Customization	2/21/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Sharon Brown	N	Y	32
PubMed for Librarians - ATM	2/22/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	35
PubMed for Librarians - Building	4/11/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Rebecca Brown	N	Y	47
PubMed for Librarians - Customization	4/12/2013 12:00:00 AM	12/31/2013 12:00:00 AM	Online	Sharon Dennis	N	Y	38
Librarian's Guide to NCBI	4/15/2013 12:00:00 AM	4/19/2013 12:00:00 AM	Bethesda, MD	NCBI Trainers, Diane Rein	Y	N	22

PubMed for Trainers	1/31/2013 12:00:00 AM	2/12/2013 12:00:00 AM	Los Angeles, CA	Sharon Dennis, Rebecca Brown, Sharon Brown, Jessi Van Der Volgen	Y	Y	27
PubMed for Librarians - Introduction	2/19/2013 12:00:00 AM	12/31/2999 12:00:00 AM	Online	Sharon Brown	N	Y	36

Cancellations

No classes were canceled this quarter.

Self-paced e-learning Products

The NTC trainers developed scripts and a test video for the "Discovering TOXNET" class that is under development. The videos will be posted on the NTC web site when completed.

The NTC produced seven full-length videos in support of the "Fundamentals of Bioinformatics and Searching" online class taught by Dr. Rein. The video lectures were recorded when Dr. Rein taught an all-day in-person class at the University of Utah in November 2012. The videos were recorded using the High Definition (HD) format; the recording consisted of two streams (PowerPoint and audio/video recording of the instructor). Dr. Rein and Matthew Steadman, NTC's Web Developer, collaborated to edit the videos into smaller chunks of content suitable for online viewing while simultaneously breaking the material into 40-50 minute lectures to deliberately mimic an academic-style lecture. Matthew Steadman also edited the two streams together so that Dr. Rein's video appeared in the corner of the PowerPoint slides. The videos were accessed through YouTube.

Student Skills Assessment

PUBMED FOR TRAINERS CLASS

A 21-question pre- and post-test was administered for the "PubMed for Trainers" class. The average scores for all classes are listed below.

NTC PubMed for Trainers class:

*Pre-test: 64%

*Post-test: 82%

NLM PubMed for Trainers class:

*Pre-test: 75%

*Post-test: 85 %

PUBMED FOR LIBRARIANS CLASS

Short 4 question pre and post-tests were administered for the "PubMed for Librarians" class. The averaged scores for all segments are listed below.

*Pre-test: 71%

*Post-test: 88%

Student Satisfaction Analysis

NTC PUBMED FOR TRAINERS

In the fourth quarter, NTC taught two PubMed for Trainers classes. A total of 44 participants registered; 30 of them took both the pre- and post-tests; and 34 filled out the evaluation.

The evaluation results for the fourth quarter are as follows:

Instructor knowledge, preparation, presentation skills and responsiveness to questions: High (96%); Good (4%)

Participants rating of whether they acquired knowledge and skills they can use: Agree (94%); Somewhat Agree (6%)

Use of technology:

Problems with technology: No problems (86%); Trouble getting connected (9%); Trouble hearing (6%)

Length of Adobe Connect sessions: Somewhat too short (4%); About the right length (92%); Somewhat too long (4%)

Felt encouraged to participate in remote sessions: True (98%); False (2%)

Most helpful parts of the course:

*Clarity on certain features such as ATM, Citation Sensing, floating subheadings, supplementary concepts and pharmacological action terms.

*The hands-on exercises during the remote sessions--this gave us a chance to practice what we learned during the lectures.

*Underlying explanations on how things work in Pubmed.

*The hands-on in-person session.

*Exercises that reinforced techniques or concepts taught by the instructors.

Least helpful parts of the course:

*The telephone groups did not feel very productive; it had to do with the make-up of the group and the lack of a moderator.

*Course design. It was somewhat helpful in the in-person session to hear about other approaches. But the virtual exchanges seemed contrived.

Additional comments:

*"I used to be afraid to use MeSH, but after this class, especially the in-person, I feel really confident in using that and getting the results that I need."

*"Really enjoyed this--liked the practical application aspect of being given the tools to design our own course, and appreciated only spending one day out of the office."

*"This is the best class that I have ever taken. I had no idea that there was so much to know about PubMed, and the material was presented in a way that I could understand it."

*"Suggest providing a planned 5-minute timed break during the online portion. It's too long to sit tethered to a computer."

Overall Rating: "A" (90%); "B" (7%); "C" (3%)

NLM PUBMED FOR TRAINERS

In the fourth quarter, NLM taught one PubMed for Trainers class. A total of 10 participants registered; 8 of them took both the pre- and post-tests; and 7 filled out the evaluation.

The evaluation results for the fourth quarter are as follows:

Instructor knowledge, preparation, presentation skills and responsiveness to questions: High (89%); Good (14%)

Participants rating of whether they acquired knowledge and skills they can use: Agree (100%)

Use of technology:

Problems with technology: No problems (100%)

Length of Adobe Connect sessions: Much too short (0%); Somewhat too short (0%); About the right length (57%); Somewhat too long (43%); Much too long (0%)

Felt encouraged to participate in remote sessions: True (86%); False (14%)

Most helpful parts of the course:

*Advanced topics such as substance searching and using subsets.

*Discussion of pedagogy and learning objectives was very helpful.

*Hearing how others taught PubMed and what they thought was important to cover in a class session.

*Meeting other health sciences librarians.

*I was appreciative that the trainers let the class go on a few tangents even though we were tight on time.

*I learned a lot from hearing the experiences of my classmates.

Least helpful parts of the course:

*The first two sessions seemed really basic, but I understand that everyone needs to be somewhere near the same level when they come for the in-person training.

*Going over the basics of PubMed at the beginning - the first session was heavily review and I feel like we could have learned more if we were able to delve into the more difficult topics early.

Additional comments:

*"I liked the technology that was used in the class."

Overall Rating: "A" (86%); "B" (14%)

NTC TOXNET

NTC taught one TOXNET and Beyond class in the fourth quarter. A total of 17 participants attended; and 11 filled out the evaluation.

The evaluation results for the fourth quarter are as follows:

Instructor knowledge, preparation, presentation skills and responsiveness to questions: High (82%); Good (18%)

Participants rating of whether they acquired knowledge and skills they can use: Agree (100%)

Most helpful parts of the course:

*Finding out that Haz-Map actually does cover things besides occupational health.

*Working on the TRI and Tox-Map exercises helped in better understanding of how to use and locate information in these.

Least helpful parts of the course:

* None Identified

Additional comments:

*"More courses on search training for scientific investigators and animal care and use administrators on alternatives to the use of animals in research."

Overall Rating: "A" (100%)

NLM TOXNET

NLM taught one TOXNET and Beyond class in the fourth quarter. A total of 5 participants attended; and 4 filled out the evaluation.

The evaluation results for the fourth quarter are as follows:

Instructor knowledge, preparation, presentation skills and responsiveness to questions: High (62%); Good (38%)

Participants rating of whether they acquired knowledge and skills they can use: Agree (100%)

Most helpful parts of the course:

*The most helpful part of the course was the demo on household products and Lactmed.

Least helpful parts of the course:

*The least helpful was the information about REMM

Additional comments:

None identified.

Overall Rating: "A" (25%); "B" (75%)

PUBMED FOR LIBRARIANS

NTC taught two series of the PubMed for Librarians online synchronous class during the fourth quarter. The class was taught in five independent segments. The classes had an average attendance rate of 59%. A total of 637 participants registered for at least one segment; 374 participants attended the segment they registered for; and 332 filled out the evaluation questionnaire for the segment.

The evaluation results for the fourth quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions: High (87%); Good (12%); Fair (1%)

Participants rating of whether they acquired knowledge and skills they can use: Agree (92%); Somewhat Agree (8%)

Most helpful parts of the course:

- *Learning about the translation tables and how they're searched.
- *Explanation of author name searching
- *The examples and exercises were excellent for retention.
- *Reminding us that narrow terms are not included in the Search details box
- *Practical demonstration.
- *Discussion of supplementary concepts.
- *Walking through the hands-on sessions with the instructor.

Least helpful parts of the course:

- *Some of the chat questions
- *Instructor's screen presentation lagged behind the audio

Additional comments:

*"Online webinar is not my favorite method for learning new search skills and for gaining NLM CE."

*"The pre and post text times are way too long."

*"Thanks for making it possible for attending at my own library."

*"The fact that we were shown things we might not find on our own but were very useful -unlike many database webinars that just keep going over the things we can find on our own easily and bore us all to death."

*"Most effective training and best use of my time in a long time!"

*"Thanks very much for the session. I'll apply what I've learned and hopefully translate it back out to my clients - biomedical researchers including grad students, post-docs, staff and faculty."

Overall Rating: "A" (80%); "B" (19%); "C" (1%)

FUNDAMENTALS OF BIOINFORMATICS AND SEARCHING

One session of the Fundamentals of Bioinformatics and Searching was taught during the fourth quarter. A total of 22 participants registered; 22 participants completed the class; and 21 filled out the evaluation.

The evaluation results for the fourth quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions: High (90%); Good (10%)

Most helpful parts of the course:

- *The exercises and the videos

*The lectures were very helpful; especially the ones that incorporated exercises

*Diane's lectures

*The Record Walk was surprisingly useful to me. I liked all of the exercises, but for some reason this "hit home" the most because I was finally connecting the biology with the data.

Least helpful parts of the course:

*Recommended time

*I already knew MyNCBI, so that was least helpful, but I can see why we did this before the other exercises.

Additional comments:

*"I typically do not like online courses - I find it challenging to stay engaged and do the work required. Diane's course was really well composed - the outside videos and readings were enough to be interesting but not overwhelming. Only one of the sessions seemed really long and I had to split into two days of work, other than that, it was really manageable and informative."

*"I think some of the expectations were not clearly defined from the beginning. There was little description of the time requirements on the description of the Course. I wish this would have been clearer so that I knew how much time I should set aside when I applied for the course. To me 'online, (asynchronous) self-paced pre-course' indicated that I would be able to work through the material as I had time, but I found out that I needed to be following a particular order and submitting exercises on certain dates. While this is fine, and I actually appreciated that in the end, I think it would have been better to explain this more clearly."

*"This is the best online learning experience I have ever had. I did not know what to expect and honestly, I would tell my colleagues what I was studying (i.e. Central Dogma Reflected in Bioinformatics Relationships) and their eyes would glaze over. I would interject - "no no it is so interesting." I think it had everything to do with the teaching skills of Diane. I'd give her an A+ if I could."

Overall Rating: "A" (71%); "B" (24%); "C" (5%)

NTC Web site

Matthew Steadman worked on ensuring that the NTC web site complied with 508 accessibility guidelines. The NTC received a compliance score of 89.7% in April 2013.

MLA Educational Clearinghouse Activities

No activity this quarter.

Collaboration with NN/LM staff

Enhancements to the National Training Registration Page (NTRP) system in the fourth quarter included:

- *Development of a map report; the report displays a color-coded map of the United States and shows how many class participants are located in each state.

- *Development of a report for NTC to show the regions and states class participants are located in as well as which NTC classes they attended. The report will be shared with the RMLs.

- *Spam problems related to the installation of new Web-STOC servers were resolved.

- *Walk-in participants can now be added to the registration system through the "Report Class Attendance" form.

Marketing and Promotional Activities

NTC continued to publish blog entries, Twitter posts, and Facebook posts. As of April 30, 2013, NTC had 111 followers on Twitter and 84 likes. During the fourth quarter NTC staff published seventeen blog items.

The NTC promotional materials created in Base Year 1 were used to assist host sites with promoting "PubMed for Trainers" and "TOXNET and Beyond."

Other

April 15-19, 2013: Sharon Dennis and Rebecca Brown attended "A Librarian's Guide to NCBI," a 5-day in-person workshop held in Bethesda, MD.