

**01-NOV-13 – 31-JAN-14**  
**University of Utah**  
**HHS-N-276-2011-00011-C**  
**NTC Quarterly Report**  
**Date Submitted: 12-FEB-2014**

# Table of Contents

- Executive Summary..... 3
- Training Events..... 7
- Cancellations..... 9
- Self-paced e-learning Products..... 10
- NTC Web site..... 16
- MLA Educational Clearinghouse Activities..... 17
- Collaboration with NN/LM staff..... 18
- Marketing and Promotional Activities..... 19
- Other..... 20

# Executive Summary

## STAFF CHANGES

None.

## CLASSES TAUGHT

### PUBMED CLASSES

NTC taught two sessions of the hybrid class PubMed® for Trainers; the in-person locations were Savannah, GA and Tulsa, OK.

NTC delivered two sessions of the online class "PubMed for Librarians" in December 2013 and January 2014, respectively. 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."

### TOXNET CLASSES

NTC taught one session of TOXNET® and Beyond in Savannah, GA on November 15, 2013.

NLM trainers delivered one session of the "TOXNET and Beyond" in-person class in Bethesda, MD on November 21, 2013.

NTC delivered one session of the new online TOXNET® class called "Discovering TOXNET: From Paracelsus to Nanotechnology (Module 1)" from October 21 – November 8, 2013. The class incorporates feedback from the beta class that was held July 22 – August 7, 2013. The class is taught as a hybrid asynchronous / synchronous class. During the first two weeks of the class, participants work independently at a time of their choosing; in the third week the class meets together for a 1-hour synchronous session.

The asynchronous class included short video tutorials as well as tutorials using "Guide on the Side," which allows participants to view the tutorial instructions side by side with the live site. Participants were required to hand in a "discovery exercise" related to each database. The discovery exercises required students to find answers without being told the exact steps to take in the database. We were pleased with the quality of the answers given to the discovery exercises; in many cases participants provided screen shots and added thoughtful and creative information to their answers.

In the synchronous session, we reviewed the discovery exercises and divided the group into small breakout groups to work on a research question. Due to the large number of participants, we offered two synchronous sessions, one on November 5 and one on November 8. Twenty-one participants attended the November 5 session and 9 participants attended the November 8 session.

Based on the feedback received, three action items for future classes will be considered:

1. Number of continuing education credits: the beta testers all told us that the independent coursework took them less than 3 hours. Based on that information, we assigned 4 hours of CE credit to the course (3 hours independent coursework plus 1 hour for the synchronous session). However, this number proved to be inaccurate; a number of participants told us the independent coursework took much more time. We will work with MLA to increase the number of CE credits offered based on this information. We will

also consider giving the class 3 weeks, rather than 2, to complete the exercises.

2. Length of synchronous session: during the first synchronous session on November 5, we had more difficulty with the groups reporting back after the small group work, and ran out of time to adequately address the issue. During the second session on November 8, we were more successful, probably because the group was smaller. We will consider increasing the synchronous session to 90 minutes to allow more time for the small groups to work together comfortably and to report back to the larger group. We will also increase the CE credits accordingly.

3. "Real-life" reference questions: we asked participants to provide us with optional "real-life" research or reference questions that we planned to have the groups work on during the synchronous session. Although well intentioned, this was less successful for two reasons: 1) some of the questions were inappropriate for TOXNET; and 2) most of the questions required finding the information in other databases (e.g., HSDB) that were not covered by Module 1. We will discuss this activity with SIS and consider dropping this from the course. Instead, we will use pre-planned scenarios for the small group work during the synchronous session.

Based on the feedback we received from participants, we believe that the class format was an overall success, and will be improved by incorporating the action items above. We were pleased with the registration and the attendance rate, and believe that the online format allows us to reach a much wider audience than the in-person classes. The online class format also gives participants much more time to thoughtfully "discover" the various databases than during the in-person session. We are applying the "lessons learned" from Module 1 as we develop Module 2.

## NCBI DATABASE CLASS

Diane Rein, Ph.D., delivered the online course "Fundamentals of Bioinformatics and Searching" from October 21 – December 3, 2013. Participants were required to fill out an online application and were selected by Diane Rein, Sharon Dennis, and Janet Zipser. We received 114 applications for 26 available slots; 24 participants completed the course. Participants who successfully completed the online class will be eligible to apply for the in-person, 5-day workshop entitled "Librarian's Guide to NCBI," to be held at NLM in April 2014.

Based on feedback from the Winter 2013 class, two adjustments were made to the course: 1) Class time period was expanded from 3 weeks to 5 weeks, with a clearly delineated one week pre-session. 2) The Molecular Vocabulary exercise was expanded to include protein definitions, and divided into two sections to give students more time to complete the exercise. Several relatively small changes were made to the various readings, both required and optional, to bring new information and data reported in the literature to the course. This will be something that will be done for any future offerings of Fundamentals. It was encouraging to learn that the video recordings remain up to date and that the original choice of content represents a stable core of bioinformatics foundations that can be effectively updated with auxiliary readings.

With the extra week, a complete NCBI GQuery exercise was created above and beyond the demonstration given in the last lecture of the previous course offering. This was in response to student feedback from the first cohort that they would like more practice running text-based searches at NCBI. Dr. Rein reported that the results from the GQuery Exercise were very good, and in some cases, very sophisticated.

Suggestions for future iterations include:

1. Increase the amount of CE credits to 18, based on the time reported by this cohort, to

complete the exercises.

2. Determine how Moodle's tracking tools can be automated to track student progress during the course and not have to be collected manually by Dr. Rein.

3. Iterate the GQuery exercise with search tips that will help future classes avoid some common pitfalls demonstrated by students in this course when learning to search NCBI GQuery.

In addition, in January 2014 we selected participants for the Winter 2014 "Fundamentals" session, to be held February 10 – March 21, 2014. We received 68 applications and selected 24 participants.

#### CLASSES UNDER DEVELOPMENT

NTC trainers worked on preparing the content for Module 2 of the online TOXNET class called "Discovering TOXNET: From Paracelsus to Nanotechnology." Module 2 covers the following databases: Hazardous Substances Data Bank (HSDB), Household Products Database (HPDB), Integrated Risk Information System (IRIS), LiverTOX, Toxics Release Inventory (TRI), TOXMAP®, and Haz-Map. The class is taught as a hybrid asynchronous / synchronous class, with independent course work over the first three weeks and a 90-minute synchronous session in the fourth week. The first session of Module 2 will be held from March 3-25, 2014.

#### TECHNICAL CHALLENGES

NTC and NLM trainers experienced severe technical difficulties with Adobe Connect during the December 2013 "PubMed for Librarians" sessions. Many participants lost connectivity to the room multiple times during the sessions, and others were not able to get in to the room at all. We believe that these problems interfered with the quality of the training.

Fortunately, in January 2013 the NIH Center for Information Technology discovered that the Adobe Connect server load balancing settings were incorrectly configured. They adjusted the settings appropriately. As a result, we experienced very minimal technical difficulties in the January 2014 "PubMed for Librarians" series.

#### OTHER ACTIVITIES

##### PUBMED REGIONAL UPDATES

From November 2013 – January 2014 NTC and NLM trainers delivered one hour PubMed Update webinars to seven of the NN/LM regions. (The update for the eighth region will be delivered in February 2014). In most cases the updates were offered during the monthly webinar meetings offered by the regions. During the webinars, we reviewed new features of PubMed (most notably the PubMed Commons feature), demonstrated a few features that are not new but that might have been missed by participants, and answered questions. The webinars were well attended and well received. We plan to repeat the updates in OY3.

##### PUBMED FOR TRAINERS USER'S GROUP

Rebecca Brown led the first meeting of the PubMed for Trainers Users' Group on January 10, 2014. Using the contact information in Moodle, 449 previous attendees of the PubMed for Trainers class were invited to attend, with an option to opt-out of future e-mail communication if they so desired. Only one person has opted out so far.

The one-hour meeting was held using Adobe Connect, with an "office hours" format; Ms. Brown led the discussion and other NTC and NLM trainers were available to answer

questions. Thirty-six participants attended the meeting. The discussion was lively and the group had a number of interesting PubMed questions. Ms. Brown compiled notes from the session to send out to the larger group. The next meeting of the group is scheduled for February 14, 2014.

# Training Events

TABLE 1. Training Sessions

| Session Content  | Start Date                | End Date                  | City/State | Trainers   | Activity Conducted In-person | Activity Conducted Remotely | # Participants |
|--|---------------------------|---------------------------|------------|--|------------------------------|-----------------------------|----------------|
| PubMed Regional Update - Greater Midwest Region (GMR)            | 1/16/2014<br>12:00:00 AM  | 1/16/2014<br>12:00:00 AM  | Online     | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N                            | Y                           | 45             |
| Discovering TOXNET: From Paracelsus to Nanotechnology (Module 1) | 10/21/2013<br>12:00:00 AM | 11/8/2013<br>12:00:00 AM  | Online     | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N                            | Y                           | 23             |
| PubMed for Librarians - Automatic Term Mapping                   | 12/13/2013<br>12:00:00 AM | 12/13/2013<br>12:00:00 AM | Online     | Rebecca Brown                                      | N                            | Y                           | 36             |
| PubMed for Librarians - Bulding and Refining Your Search         | 12/16/2013<br>12:00:00 AM | 12/16/2013<br>12:00:00 AM | Online     | Jessi Van Der Volgen                               | N                            | Y                           | 38             |
| PubMed for Librarians - Customization                            | 12/18/2013<br>12:00:00 AM | 12/18/2013<br>12:00:00 AM | Online     | Sharon Dennis                                      | N                            | Y                           | 22             |
| PubMed for Librarians - Introduction                             | 1/13/2014<br>12:00:00 AM  | 1/13/2014<br>12:00:00 AM  | Online     | Rebecca Brown                                      | N                            | Y                           | 35             |
| PubMed for Librarians - MeSH                                     | 1/15/2014<br>12:00:00 AM  | 1/15/2014<br>12:00:00 AM  | Online     | Jessi Van Der Volgen                               | N                            | Y                           | 40             |
| PubMed for Librarians - ATM                                      | 1/17/2014<br>12:00:00 AM  | 1/17/2014<br>12:00:00 AM  | Online     | Rebecca Brown                                      | N                            | Y                           | 25             |
| PubMed for Librarians - Building and Refining Your Search        | 1/22/2014<br>12:00:00 AM  | 1/22/2014<br>12:00:00 AM  | Online     | Rebecca Brown                                      | N                            | Y                           | 34             |
| PubMed for Librarians - Customization                            | 1/24/2014<br>12:00:00 AM  | 1/24/2014<br>12:00:00 AM  | Online     | Sharon Dennis                                      | N                            | Y                           | 19             |
| PubMed for Trainers, Tulsa, OK                                   | 1/9/2014<br>12:00:00 AM   | 2/3/2014<br>12:00:00 AM   | Tulsa, OK  | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | Y                            | Y                           | 15             |
| PubMed Regional Update - South Central Region (SCR)              | 11/20/2013<br>12:00:00 AM | 11/20/2013<br>12:00:00 AM | Online     | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N                            | Y                           | 52             |

|   |                              |                              |              |  |   |   |     |
|---|------------------------------|------------------------------|--------------|--|---|---|-----|
| PubMed Regional Update - Pacific Southwest Region (PSR)   | 12/12/2013<br>12:00:00<br>AM | 12/12/2013<br>12:00:00<br>AM | Online       | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N | Y | 58  |
| PubMed Regional Update - New England Region (NER)         | 12/19/2013<br>12:00:00<br>AM | 12/19/2013<br>12:00:00<br>AM | Online       | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N | Y | 68  |
| PubMed Regional Update - Southeast Atlantic Region (SE/A) | 12/18/2013<br>12:00:00<br>AM | 12/18/2013<br>12:00:00<br>AM | Online       | Sharon Dennis, Rebecca Brown, Jessi Van Der Volgen | N | Y | 66  |
| PubMed Regional Update - Middle Atlantic Region (MAR)     | 1/8/2014<br>12:00:00<br>AM   | 1/8/2014<br>12:00:00<br>AM   | Online       | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N | Y | 139 |
| PubMed Regional Update - MidContinental Region (MCR)      | 1/10/2014<br>12:00:00<br>AM  | 1/10/2014<br>12:00:00<br>AM  | Online       | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | N | Y | 40  |
| Fundamentals of Bioinformatics and Searching              | 10/21/2013<br>12:00:00<br>AM | 12/6/2013<br>12:00:00<br>AM  | Online       | Diane Rein, Sharon Dennis                          | N | Y | 22  |
| PubMed for Trainers - Savannah, GA                        | 10/31/2013<br>12:00:00<br>AM | 11/14/2013<br>12:00:00<br>AM | Savannah, GA | Sharon Dennis, Jessi Van Der Volgen, Rebecca Brown | Y | Y | 16  |
| Toxnet and Beyond - Savannah, GA                          | 11/15/2013<br>12:00:00<br>AM | 11/15/2013<br>12:00:00<br>AM | Savannah, GA | Sharon Dennis, Jessi Van Der Volgen                | Y | N | 8   |
| Toxnet and Beyond - Bethesda, MD                          | 11/21/2013<br>12:00:00<br>AM | 11/21/2013<br>12:00:00<br>AM | Bethesda, MD | NLM Trainers                                       | Y | N | 16  |
| PubMed for Librarians - Introduction                      | 12/9/2013<br>12:00:00<br>AM  | 12/9/2013<br>12:00:00<br>AM  | Online       | Rebecca Brown                                      | N | Y | 26  |
| PubMed for Librarians - MeSH                              | 12/11/2013<br>12:00:00<br>AM | 12/11/2013<br>12:00:00<br>AM | Online       | Jessi Van Der Volgen                               | N | Y | 46  |

## **Cancellations**

A "TOXNET and Beyond" in-person class, originally scheduled in Tulsa, OK on January 30, 2014, was canceled at the request of the host institution.

## Self-paced e-learning Products

Tutorials and videos created by NTC trainers for Module 1 of the "Discovering TOXNET" class were posted to NTC's web site under the "Tutorials and Recordings" section. The videos covered the following topics: introduction to TOXNET; LactMed; TOXLINE; ChemIDPlus; CHEMM; REMM; and WISER. In addition, three "Guide on the Side" tutorials that covered ChemIDPlus, TOXLINE, and LactMed were linked from the page.

### 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: 66%

\*Post-test: 83%

### PUBMED FOR LIBRARIANS CLASS

Short four-question pre- and post-tests were administered for the "PubMed for Librarians" class. The average scores are listed below.

NTC PubMed for Librarians class:

\*Pre-test: 74%

\*Post-test: 92%

### DISCOVERING TOXNET MODULE 1 CLASS

A 15 question pre- and post-test was administered for the "Discovering TOXNET" class. The average scores are listed below.

Average Scores:

Pre-Test: 77% correct

Post-Test: 86% correct

### NTC PUBMED FOR TRAINERS EVALUATION RESULTS

In the third quarter, NTC taught two PubMed for Trainers classes. A total of 33 participants registered; 22 of them took both the pre- and post-tests; and 30 filled out the evaluation.

The evaluation results for the third quarter are as follows:

Instructor knowledge, preparation, presentation skills and responsiveness to questions:  
High (95%); Good (5%)

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

Problems with technology:

No problems (84%); Trouble getting connected (13%); Trouble hearing (3%)

Length of Adobe Connect Sessions:

About the right length (87%); Somewhat too long(13%)

Felt encouraged to participate in remote sessions:  
True (97%); False (3%)

Overall Rating:  
"A" (83%); "B" (17%)

Most Helpful Parts of the Course:

\*Collaborative, helpful instructors

\*Segments that covered ATM, MeSH, subheadings, and supplementary concepts.

Least Helpful Parts of the Course:

\*Homework was overwhelming

\*Group discussions due to dominant group members taking up the time

Additional Comments

\*"This is the BEST class! Content was relevant and expanded my knowledge. Combination of online and in person was dynamic and allowed for more information to be shared."

\*"The instructors and networking. I got some great ideas! Since the class, I've taught a PubMed orientation and even got a comment that I 'explained it very well'."

\*"This course was wonderful! The in-person session was the best part and I love how we worked in groups both online and in person. Will definitely recommend the class to others and may take again in a few years if many changes are made to PubMed."

#### NTC PUBMED FOR LIBRARIANS EVALUATION RESULTS

NTC taught two series of the PubMed for Librarians online synchronous class during the third quarter. The class was taught in five independent segments. The classes had an average attendance rate of 61%. A total of 522 participants registered for at least one segment; 321 participants attended the segment they registered for; and 329 filled out the evaluation questionnaire for the segment. The larger number filling out the evaluation is due to participants attending additional segments that they did not originally register to attend.

The evaluation results for the third quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions:  
High (93%); Good (7%)

Participants rating of whether they acquired Knowledge and skills they can use:  
Agree (92%); Somewhat Agree (7%); Somewhat Disagree (1%)

Overall Rating:  
"A" (85%); "B" (14%); "C" (1%)

Most Helpful Parts of the Course:

\*Pacing was just right

\*Examples and demonstrations

\*Learning new knowledge and refreshing previous knowledge

\*Deeper understanding of how PubMed works

\*Clinical queries

Least Helpful Parts of the Course:

\*Problems with the display updating too slowly

\*Difficult to have the presentation open and follow along with the hands-on at the same time

\*Prefer computer audio to telephone

\*More in-depth information

Additional Comments:

"I found both instructors thoroughly knowledgeable, patient, helpful, engaging, and excellent when responding to participants' questions, as to ensure the questions were answered before moving forward."

"Add summary/lesson goals to the class handout."

"I didn't have high expectations but thought it was great! Thanks."

"Jessica, Rebecca, and Sharon make a great training team!"

#### DISCOVERING TOXNET EVALUATION RESULTS

The online TOXNET class called "Discovering TOXNET: From Paracelsus to Nanotechnology (Module 1)" ran from October 21 – November 8, 2013. Of the 45 students who originally registered for the class, 23 completed the class and earned CE credit.

The evaluation results for the third quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions:  
High (98%); Good (2%)

Participants rating of whether they acquired Knowledge and skills they can use:  
Agree (90%); Somewhat Agree (10%)

Overall Rating:  
"A" (74%); "B" (26%)

Most Helpful Parts of the Course:

\*Performing the training and exercises asynchronously

\*Guide on the Side exercises

\*Videos

Least Helpful Parts of the Course:

\*Insufficient time for synchronous session

\*Took us much longer than 3 hours to complete all the assignments

Additional Comment:

"I loved the videos! The course was really excellent! I also appreciated the quizzes in the synchronous section and the small group. I had never had the experience of switching into small groups using this type of technology. It was an unexpected treat."

#### NLM TOXNET AND BEYOND EVALUATION RESULTS

NLM taught one session of TOXNET and Beyond in Bethesda, MD. Sixteen participants attended and filled out the evaluation form.

The evaluation results for the third quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions:  
High (83%); Good (15%); Fair (2%)

Participants rating of whether they acquired Knowledge and skills they can use:  
Agree (88%); Somewhat Agree (12%)

Overall rating:  
"A" (56%); "B" (38%); "C" (6%)

Most Helpful Parts of the Course:

\*Hands-on exercises and step-by-step demonstrations

\*The manual

Least Helpful Parts of the Course:

\*Technical problems with lab computers

\*Need more time to understand when to use which database

Additional Comments:

\*"Shannon Jordan was really patient and knowledgeable, as were our other instructors. I enjoyed the course, and plan on presenting some of the info I learned to fellow staff."

\*"Extremely useful and I cannot wait to get back to work to really use it."

#### NTC TOXNET AND BEYOND EVALUATION RESULTS

NTC taught one session of TOXNET and Beyond in Savannah, GA. The class consisted of seven librarians, and two nursing professionals.

The evaluation results for the third quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions:  
High (100%)

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

Overall rating:  
"A" (100%)

Most Helpful Parts of the Course:

\*Knowledgeable instructors

\*Hands-on exercises

\*Working in groups.

Least Helpful Parts of the Course:

\*Too much information

\*Could be multiple courses

Additional Comments:

\*"Wonderful knowledgeable instructors! Sharon & Jessie both were very good."

\*"Group participants were very curious and asked great questions."

\*"Immediately utilizing the websites and info in exercises to reinforce and learn by doing (great use of androgogy principles)."

## FUNDAMENTALS OF BIOINFORMATICS AND SEARCHING EVALUATION RESULTS

Consultant Diane Rein taught one session of Fundamentals of Bioinformatics and Searching, facilitated by NTC staff. The course was taught online, with 27 participants being chosen from an applicant pool of 114. Three participants dropped the class before it began, leaving a cohort of 24 students. Of those, 22 received full CE credit for completing the course.

The evaluation results for the third quarter are as follows:

Instructor knowledge, preparation, and responsiveness to questions:  
High (95%); Good (5%)

Participants rating of whether they acquired Knowledge and skills they can use:  
Agree (91%); Somewhat Agree (9%)

Overall rating:  
"A" (82%); "B" (18%)

Most Helpful Parts of the Course:

\*The instructor and Dr. Rein's expertise

\*Practice exercises

\*Lectures

Least Helpful Parts of the Course:

\*The vocabulary exercise and finding sources for it

\*Videos were too long

Additional Comments:

\*"I'm really glad I took this class. My interest in bioinformatics has once again spiked and I feel prepared to work on more challenging assignments with researchers at my school."

\*"There was a lot of information to digest in this class in a relatively short period of time. I really like the video formats and the supplementary readings. I do think adding some further videos that demonstrate a few different searches would be extremely helpful for future students. Thank you for the opportunity to take this course!"

\*"The instructor! We really benefited from Diane's expertise. She helped us develop our vocabulary, understand the context for using various databases, and gave us real-life examples that demonstrated where we could provide instruction and search assistance. Diane was also very responsive on email to questions relating to the course and to related bioinformatics topics. The lectures were excellent, and the supplemental readings were also very useful."

## **NTC Web site**

Matthew Steadman re-designed the "Tutorials and Recordings" web page so that it is more graphically appealing and is easier to find tutorial and recordings related to particular topics. The page now features large icons that lead to sub-pages related to PubMed, TOXNET, teaching and learning webinars, and the MLA Educational Clearinghouse.

## **MLA Educational Clearinghouse Activities**

No activity this quarter.

## **Collaboration with NN/LM staff**

Activities related to the National Training Registration Page (NTRP) system in this quarter included fixing several bugs, updating the class attendance screen to show the number of confirmed registrants, adding the Organization Type field at the request of the RMLs, and dividing the code into re-usable functions to assist with future maintenance of the system.

## **Marketing and Promotional Activities**

Jessica Van Der Volgen introduced a new format to the NTC blog. She created a one minute video tutorial about the new PubMed author affiliations feature and embedded the video within the blog.

As of January 30, 2014, NTC had 175 followers on Twitter (up from 141 in October 2013), and 121 likes on Facebook (up from 112 in October 2013). The Twitter account continues to show increased engagement through retweets and mentions. During the third quarter, NTC staff published 25 blog posts, which meets the target of approximately two posts per week.

## **Other**

December 3, 2014: Sharon Dennis and Jessica Van Der Volgen gave an online presentation about the NTC's activities for the NLM Associate Fellows.

January 22-24, 2014: Jessica Van Der Volgen attended the American Society for Training and Development "TechKnowledge" conference in Las Vegas, NV.