

STEC CAP News

CONTROLLING SHIGA TOXIN-PRODUCING *E. coli* TO IMPROVE BEEF SAFETY

STEC CAP Annual Meeting, May 27–29th, 2014

Directors Update

Dear STEC CAP Colleagues, I wish to thank members of the Executive Management Team (EMT) for having taken a turn on writing this segment of our newsletter for the past several months. This has given them a chance to share their thoughts, you a chance to hear from them, and me a chance to get a break! However, as the song goes, it is nice to be back in the saddle again.



the Year 1-2 Annual Reports and Year 3 Statements of Work and budgets (for all three years) were reviewed. Presently, Objective Team Leaders and the EMT are scheduling phone calls with collaborators to visit with you about progress and plans. As has been reiterated in many past newsletters, for those who received Year 1-2 funding, we are now into the period in which deliverables must be met, journal articles published, and "points on the board" documented!

With regard to our request for Year 3 funds, I am pleased to inform you that this is in the final stage of review with the USDA-NIFA. Dr. Phebus informed you in the last newsletter that we successfully submitted our request for Year 3 funds on October 21 (which also happens to be my birthday, but you don't need to know that), along with an extensive annual progress report through the REEport system. As you might have it, on December 23, we at UNL received a request for more information (i.e., a list of questions to be addressed) from the Awards Management Division of the USDA-NIFA. This sort of brought back memories of a

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OEIE Evaluation Update



Since the previous newsletter, the Office of Educational Innovation and Evaluation (OEIE) has administered the Fall 2013 student internship survey and analyzed both the Summer and Fall 2013 internship surveys. A total of 19 students (16 Summer, and 3 Fall) participated in the internship program. Results indicated that:

- Overall the students had a positive internship experience and increased their knowledge of beef food science, food safety, and food defense.
- Common themes regarding what they felt was their most valuable learning experience during the internship included: gained knowledge, interactions with people, hands on experience, collecting and analyzing data, critical thinking, and experience in the lab.

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A Brilliant Trip to Boston: “Scholarly siege of Boston” Frontier field trip portrays the complexity of the world, while giving one STEC CAP intern a comparative perspective

By Kelsie Hoss, with files from Tim Cochran and Justin Kastner

MANHATTAN, KANSAS—December 20, 2013—As part of the Kansas State Frontier Program, an interdisciplinary mix of intellectually curious scholars traveled to Massachusetts to learn about complex topics—from economics and policymaking at Harvard University, to maritime history and food processing in the seafood sector, to import-export security operations at the seaport of Boston, to research and development in the bioscience sector.

The “Scholarly Siege of Boston” began on Wednesday, October 16, with Frontier (including one STEC CAP student, Megan Kulas) and University Honors Program (UHP) students flying into Boston’s Logan Airport and attending a lecture, held at Harvard University’s Institute of Politics, featuring thought leaders in the emerging policymaking field of behavioral economics. The following days involved multidisciplinary learning in a number of areas. Just north of Boston, in the historical village of Gloucester, UHP students toured a seafood processing company and visited a maritime history center. In Boston, the students learned about import-export operations at a seaport and met with business and scientific leaders in a Cambridge-based bioscience company. Throughout the four-day trip, students communicated and chronicled their learning by webposting commentaries, photos, and videos on Yammer.com, a professional social networking tool.



Dr. Justin Kastner, Co-director of the Frontier program (an interdisciplinary scholarly career-development program) and interim director of the UHP, said the trip was designed to help both UHP and Frontier students develop their intellectual curiosity regarding a wide range of topics. “We sponsored this field trip, hoping it would give students an unparalleled opportunity to ‘catch a vision’ for what they might want to further explore in their academic, career, and life development.”

The trip also helped one Frontier student involved with the STEC CAP gain a comparative perspective on ensuring food processing and supply chains. Megan Kulas noted that the beef and seafood sectors both have stringent checkpoints to ensure a safe product for consumers. At the Gloucester-based Gorton’s seafood processing plant, Kulas learned how laboratory technicians tested for the presence of coliforms. If a sample is found to be contaminated, further testing is undertaken. “In beef products, ‘the big six,’ along with *E. coli* O157:H7, are by law considered to be adulterants. It’s interesting to observe how some strains of bacteria are considered adulterants in some products and not in others,” Kulas remarked.

During the Frontier Field Trip, the 24th of its kind, the students engaged in a variety of scholarly activities. They first travelled to Cambridge, Massachusetts, and Harvard University to learn about “choice architecture” from distinguished scholars in the field of behavioral economics and policymaking. Richard Thaler and Cass Sunstein, authors of the book *Nudge*, discussed how economic incentives can help affect behavioral change, noting that “behavioral economics” is being used by both businesses and governments to encourage human behavioral changes in such areas as personal financial savings, environmental stewardship, and—indeed—food safety.

The next several days gave the scholars several unique, experiential opportunities to learn about issues related to homeland security, food protection and defense, and the health sciences. One of America’s oldest and most successful seafood companies, Gorton’s Seafood, provided UHP and Frontier students with briefings and tours on business and biosecurity practices in their line of seafood products. Boston’s economy is historically connected to the seafood industry, so it was fitting to not only learn about seafood processing but also tour a local museum—Maritime Gloucester—dedicated to celebrating maritime history. After touring the museum, students were inspired by a skill-development workshop, entitled “How to make the most of history,” led by Dr. Kastner and Frontier’s Co-director, Dr. Jason Ackleson.

Rebecca Kaye, a UHP student, reflected on the skill-development workshop using Yammer, “History can serve as an integrating cement from multi and interdisciplinary work by functioning as the string that sews disciplines together...”



I began to imagine how much stronger and more efficient our political structure would be if it was more adequately integrated with philosophy and history.”

Friday morning, the students had a unique opportunity to learn about Massport (the public-private entity that manages the port of Boston) and import-export processes. While on a tour led by Massport security professionals, Frontier students quickly realized the relevance of port to international security—including the ongoing operation and security of global supply chains. Massport

administers a rigorous screening process to help ensure the safety of both imports and exports. “Nautical tourism” adds another layer of complexity to security operations. After learning about the multifaceted port security operations, several students visited an up-and-coming pharmaceutical company in Cambridge—Momenta Pharmaceuticals.

A bioscience firm with a multidisciplinary staff of scientists and professionals, Momenta is a pharmaceutical company that focuses mainly on generic brands of medicine. Momenta’s representatives elaborated to the students the importance of interdisciplinary studies. Some of the professionals working at Momenta had earned degrees in Marketing, Management, Chemistry, Biology, Law, and many more. Combining the skills of employees from different sectors has allowed Momenta to advance in research and development, and succeed financially.

Since the conclusion of the “Scholarly Siege of Boston” students have communicated about the trip via Yammer. The success of the trip has been illustrated by the comments. As Michael Emley aptly stated, “It was an incredible experience that I will never forget!”

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very long list of questions we had to address for the Year 1-2 funds, and also timing that bore a resemblance to being informed we would need to come to Washington, DC, to a Reverse Site Visit to compete for the original award (right before Christmas). Anyway...on January 10, this information was sent to the USDA-NIFA and we are now awaiting the good news. At this time, I wish to thank our highly capable staff, especially Jill Hochstein, Kim Gieseking, Lynne Smejdir, Paula Adams, and Carrie Snyder for pulling this information together. I anticipate the award being made soon and immediate progress on the processing of subawards, presumably with funds being made available in March or so for these individuals.

A huge success story to share with you is the addition of four new STEC CAP

collaborators and three new institutions! I am very excited to welcome the following as new collaborators to the STEC CAP: Dr. Cristina Lanzas, University of Tennessee-Knoxville, Dr. Armitra Jackson-Davis, Alabama A&M University (Normal, AL), Dr. Salina Parveen, University of Maryland Eastern Shore (Princess Anne, MD), and Dr. Renee Boyer, Virginia Tech University. Dr. Lanzas will study transmission dynamics of STEC in cattle as a part of Objective 2. Dr. Jackson-Davis will evaluate multiple-hurdle antimicrobial technologies on inactivation of STEC in beef trim as a part of Objective 3. Dr. Parveen will study the prevalence and concentration of STEC in veal post-harvest as a part of Objective 2. Dr. Boyer will evaluate practices around the handling and storage of beef products in consumer homes as a part of Objective

5. We are very fortunate to have these scientists on board, and I am proud to say we now have a total of 15 institutions leading the STEC CAP!

Other great news of progress can be found in the pages of this newsletter, about which I invite you to read. Every one of our Objective teams has success stories to share.

Very Sincerely Yours,

Rod

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• The main challenging aspects they faced during the internship included: research and knowing how to analyze and organize data and understanding the work. Other challenging aspects included no previous experience, using technology, working with people, limited or no instruction/guidance from mentors, and being away from home.

In late November 2013, we shared an update with each collaborator reflecting their individual "Points on the Board" STEC CAP-related activities (POBs) reported to OEIE since January 2012. Thank you for taking the time to review

the updates and also for providing additional achievement information!

We learned of an additional 37 notable achievements during November and December 2013, including scholarly talks, publications, educational media, partnerships, media contacts, research progress, and other activities.

As always, we encourage you to continue to share your recent achievements or POBs. Please use the survey link below to report your STEC CAP achievements and progress and to complete the Manuscript Documentation form. This helps ensure

that your progress, successes, and impacts are captured in all quarterly and annual reports to the USDA.

https://kstate.qualtrics.com/SE/?SID=SV_6fhkSh75h2Yj4Tb

As always, OEIE welcomes your feedback and questions regarding STEC CAP evaluation activities. Please contact OEIE:

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Check us out on the Web! Visit us at: www.stecbeefsafety.org

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2014 STEC CAP Annual Conference

The second annual STEC CAP Conference will be held May 27–29th at the Embassy Suites in Lincoln, NE in conjunction with the Nebraska Governors' Conference on E. coli O157:H7 and STECs. The topics will include the prevalence, control and the risk of STECs in the environment and other industries such as produce. Please hold these dates on your calendar. Registration will be available in the next newsletter.

