

Annual Report for Period:06/2006 - 05/2007

Submitted on: 09/08/2007

Principal Investigator: Spongberg, Alison L.

Award ID: 0552552

Organization: University of Toledo

Title:

REU Site: An integrated assessment of physical, ecological and socio-economic aspects of a watershed system

Project Participants

Senior Personnel

Name: Spongberg, Alison

Worked for more than 160 Hours: Yes

Contribution to Project:

Generally runs the program. Solicits applications, arranging room and board, flights, etc.
Runs and arranges the overall structure of the nine-week program

Name: Mayer, Christine

Worked for more than 160 Hours: Yes

Contribution to Project:

Helps in any capacity needed, including running the portion of the program held at the Lake Erie Research Center

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Name: Bossenbroek, John

Worked for more than 160 Hours: Yes

Contribution to Project:

John mentored Jena Buchhop, one of the REU participants. One of John's graduate students also helped.

Name: Moorhead, DAryl

Worked for more than 160 Hours: Yes

Contribution to Project:

Daryl mentored Christine Biermann, one of the REU participants. One graduate student and one staff member at the arboretum also helped.

Name: Sigler, William

Worked for more than 160 Hours: Yes

Contribution to Project:

Von mentored two REU students: Kristin Gardnew and Raina Ritu.

Name: Czajkowski, Kevin

Worked for more than 160 Hours: Yes

Contribution to Project:

Kevin mentored REU student, Latasha Butler

Name: Chen, Jiquan

Worked for more than 160 Hours: Yes

Contribution to Project:

Jiquan mentored REU student Andrew Alvarino

Name: Bridgeman, Tom

Worked for more than 160 Hours: Yes

Contribution to Project:

tom mentored REU student Justin Chaffin

Name: Stepien, Carol

Worked for more than 160 Hours: Yes

Contribution to Project:

Carol mentored REU student Jennifer Ohayon (they have submitted one journal article together)

Name: Fisher, Tim

Worked for more than 160 Hours: Yes

Contribution to Project:

Tim mentored REU student, Kim Sinclair.

Research Experience for Undergraduates

Name: Buchhop, Jena

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Junior

Home Institution: Other than Research Site

Home Institution if Other: Wittenberg University

Home Institution Highest Degree Granted(in fields supported by NSF): Bachelor's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Raina, Ritu

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Sophomore

Home Institution: Other than Research Site

Home Institution if Other: Baldwin Wallace

Home Institution Highest Degree Granted(in fields supported by NSF): Bachelor's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Sinclair, Kim

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Sophomore

Home Institution: Other than Research Site

Home Institution if Other: Ohio Wesleyan University

Home Institution Highest Degree Granted(in fields supported by NSF): Bachelor's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Ohayon, Jennifer

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Junior

Home Institution: Other than Research Site

Home Institution if Other: Victoria College University of Toronto

Home Institution Highest Degree Granted(in fields supported by NSF): Bachelor's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Gardnew, Kristin

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Junior

Home Institution: Same as Research Site

Home Institution if Other:

Home Institution Highest Degree Granted(in fields supported by NSF): Doctoral Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Chaffin, Justin

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Junior

Home Institution: Other than Research Site

Home Institution if Other: Bowling Green STate University

Home Institution Highest Degree Granted(in fields supported by NSF): Doctoral Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Alvarino, Andrew

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Sophomore

Home Institution: Other than Research Site

Home Institution if Other: Broward Community College

Home Institution Highest Degree Granted(in fields supported by NSF): Associate's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Barrett, Caroline

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Sophomore

Home Institution: Other than Research Site

Home Institution if Other: Syracuse University

Home Institution Highest Degree Granted(in fields supported by NSF): Doctoral Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Bierman, Christine

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Junior

Home Institution: Other than Research Site

Home Institution if Other: SUNY Geneseo

Home Institution Highest Degree Granted(in fields supported by NSF): Bachelor's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Name: Butler, Latasha

Worked for more than 160 Hours: Yes

Contribution to Project:

Years of schooling completed: Junior

Home Institution: Other than Research Site

Home Institution if Other: Central State University

Home Institution Highest Degree Granted(in fields supported by NSF): Bachelor's Degree

Fiscal year(s) REU Participant supported: 2006

REU Funding: No Info

Organizational Partners

Other Collaborators or Contacts

Students work in the same location and interact with the local environmental group The Duck and Otter Creek Partnership that oversees projects in the local area.

I attended the meeting in Ballston of the various PIs in Biological REU programs. I think this was a fantastic opportunity to meet other people trying to achieve the same goals as me. I definitely think it was money well spent and have some great contacts for next year. Thanks so much for that opportunity.

Also, I'm not sure where to enter this, but the statistics on the REU participants for Summer 2006 included 1 African American (from 5 completed applications), 1 Hispanic (of two), and 1 Pacific Islander (of 1)

Activities and Findings

Research and Education Activities:

This is a nine-week summer REU program. The summer of 2006 saw over a hundred applicants with around 43% of them from minorities. However, many of these applications were incomplete. We hope to address this problem in coming years.

Findings:

The program has been a huge success. Students overwhelmingly gave positive responses about the program. Questionnaires about science in general, research as a career goal and their expectations about science careers showed great development during the program.

Training and Development:

Basically we are always learning how to deal with different personalities, especially with students from so far away. Many of the mentors have 'evolved' during the past seven years - where initially they felt these students were merely there to help the faculty member get data - to now we are thinking of the benefits to the student as more important.

Outreach Activities:

Our student participants frequently work with local organizations involved with the environment. RAP (Remedial Action Plan) groups and other Watershed Watch programs receive reports on what the students are doing and are very helpful in their research. We've even had some students involved with a local consultant building wetlands for a particular project.

Journal Publications

Sigler, V; Pasutti, L, "Evaluation of denaturing gradient gel electrophoresis to differentiate *Escherichia coli* populations in secondary environments", ENVIRONMENTAL MICROBIOLOGY, p. 1703, vol. 8, (2006). Published, 10.1111/j.1462-2920.2006.01105.

Ault, TW; Czajkowski, KP; Benko, T; Coss, J; Struble, J; Spongberg, A; Templin, M; Gross, C, "Validation of the MODIS snow product and cloud mask using student and NWS cooperative station observations in the Lower Great Lakes Region", REMOTE SENSING OF ENVIRONMENT, p. 341, vol. 105, (2006). Published, 10.1016/j.rse.2006.07.00

DeVanna, K.M.;Mayer, C.M.;Barrett, C.A., "Role of Dreissena as ecosystem engineers: effects on native bioturbators and benthic communities", Canadian Journal of Fisheries and Aquatic Science, p. , vol. , (). Submitted,

Ohayon, J.L.; Stepien C.A., "Genetic and biogeographic relationships of the racer goby *Neogobius gymnotrachelus* (Gobiidea; Teleostei) from invasive and Eurasian populations", Journal of Evolutionary Biology, p. , vol. , (). Submitted,

Books or Other One-time Publications

Web/Internet Site

URL(s):

www.reusummer.utoledo.edu

Description:

This is our main website for our program. Unfortunately, it is currently in bad shape. Our computer technician who maintained this site for me was diagnosed with pancreatic cancer and died just this summer and during his illness it was difficult to keep up on all tasks. We will fix this situation very soon.

Other Specific Products

Product Type:

Professional presentation

Product Description:

Terry, D., V. Sigler, and I. Kassem. 2006. Characterization of the composition of the bacterial communities and potential pathogens in field applied biosolids. Presented at the 115th annual meeting of The Ohio Academy of Science, April 22, Dayton, OH.

Kassem, I., V. Sigler, M. Esseili, and D. Terry. 2006. Detection and genotyping of

Staphylococcus aureus in the environment using multiplex- and rep-PCR. Presented at the 115th annual meeting of The Ohio Academy of Science, April 22, Dayton, OH.

Kassem, I., V. Sigler, M. Esseili, and D. Terry. 2006. Optimization of PCR-based Methods for Studying Staphylococcus aureus: an Emerging Environmental Pathogen. Presented at the annual meeting of the Ohio Branch of the American Society for Microbiology, April 21 - 22, Mason, OH.

Terry, D., V. Sigler, and I. Kassem. 2006. The impact of class B biosolids on soil bacteria. Presented at the annual meeting of the Ohio Branch of the American Society for Microbiology, April 21-22, Mason, OH.

Kassem, I., D. Terry, M. Esseili, and V. Sigler. 2005. Enumeration and PCR-based detection of Escherichia coli and Staphylococcus aureus in field-applied class B sludge. Presented at the 67th Ohio Section of the American Water Works Association (OAWWA), September 19-22, Columbus, OH.

Sharing Information:

These presentations were made by the REU student at scientific professional meetings.

Contributions

Contributions within Discipline:

Our goal is to give research experience to undergraduate students who otherwise might not have the opportunity. We provide the field and lab experience they need. We also have several group meetings where we introduce or discuss current trends in the sciences, the job market, and opportunities in private and government venues. While we do target underrepresented populations (and have been very successful in attracting them) we tend to prefer students from smaller universities with less exposure.

Although our primary mission is to provide these opportunities to the students, we have been very successful in producing manuscripts and presentations either using the student data or having the student attend the conference themselves.

Contributions to Other Disciplines:

Contributions to Human Resource Development:

This is a difficult question. I think we have 'persuaded' several of our participants to enter the academic world, as opposed to stopping after their BS degree. I am currently compiling a list of all past participants and their current whereabouts. So many of them have been highly productive already.

Contributions to Resources for Research and Education:

Contributions Beyond Science and Engineering:

I entered this elsewhere but I will repeat myself. Our students are often coupled with local environmental groups, tackling a research problem of local interest. They go to the monthly or periodic meetings to discover how these organizations work. They present their findings at these meetings. So far, they are really well received and have really improved the relationship between the university and the community (not that we had a bad relationship previously).

Special Requirements

Special reporting requirements: None

Change in Objectives or Scope: None

Unobligated funds: \$ 0.00

Animal, Human Subjects, Biohazards: None

Categories for which nothing is reported:

Organizational Partners

Any Book

Contributions: To Any Other Disciplines

Contributions: To Any Resources for Research and Education