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Planning Visit: U.S.- Irish R&D Partnership

Laurie B. Connell

Principal Investigator; University of Maine, Orono, laurie.connell@umit.maine.edu

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Final Report for Period: 07/2009 - 06/2010

Submitted on: 07/01/2010

Principal Investigator: Connell, Laurie B.

Award ID: 0827236

Organization: University of Maine

Submitted By:

Connell, Laurie - Principal Investigator

Title:

Planning Visit: U.S.- Irish R&D Partnership

Project Participants

Senior Personnel

Name: Connell, Laurie

Worked for more than 160 Hours: No

Contribution to Project:

This is a travel grant. the time involved was not more than 160 hours

Name: Smith, Rosemary

Worked for more than 160 Hours: No

Contribution to Project:

Collaborator in project

Name: Doucette, Greg

Worked for more than 160 Hours: No

Contribution to Project:

collaborator in projected project

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Research Experience for Undergraduates

Organizational Partners

Other Collaborators or Contacts

This award was to attend a meeting in ireland for the purpose of beginning an international collaboration for sensor development.

Greg Doucette is a member of NOAA in South carolina

Chris Elliot is at Queens University Belfast Northern Ireland

Richard O'Kennedy is at The University of Dublin, Dunlin Ireland

Activities and Findings

Research and Education Activities:

This is a travel award

This project was directed toward facilitating meetings with four groups of collaborators with the intent of developing a full proposal for submission to the nanotechnologies and sensors initiative in conjunction with NSF's Office of International Science and Engineering (OISE) and the U.S.-Ireland Research & Development Partnership Program. The U.S.-Ireland Research & Development Partnership Program presents us with a very unique opportunity to bring together our respective expertise and strengths in the development and application of sensor-based assays and toxin analysis. This collaboration, which builds on our previously successful interactions, allows us to address critical public health needs in monitoring our food supply for the presence of several potent toxins. The collaboration among the three groups integrated the facilities and expertise of the investigators and strengthened our ability to submit a competitive proposal to NSF following the planning visit. That project was funded. We have now organized a follow-up meeting to take place in Dublin Ireland to coordinate the kick-off of the project.

Key International collaborators and their roles:

Dr. Chris Elliot, Professor Food Safety, Queen's University Belfast (QUB), Belfast, UK. and Dr. Richard O' Kennedy, Dublin City University (DCU), Dublin, Ireland acted as hosts for the planning visit that was held during April 2008 in Belfast. They coordinated meeting facilities and "hands-on" demonstrations of potential sensor platforms.

Findings:

The Irish hosts coordinated meeting rooms for the group as well as facilitate "hands-on" demonstrations of potential sensor platforms. Because this is a Planning Visit (not a workshop) both the schedule and the facilities required are minimal. Day 1 (arrival; half-day) was used for review of QUB biosensor faculties, brief presentations by each collaborator on their specific contribution to the project, and preliminary discussion of the most effective means of integrating these respective efforts and expertise. The first full day (Day 2; [8AM-9PM]) was used for "hands-on" demonstrations, initial analysis of potential sensor platforms, identification of proposal writing assignments, and formation of break-out groups to begin writing. The final activity was the assembly a draft proposal for dissemination to the participants and later submission to an NSF Sensors RFP (Environmental Implications of Emerging Technologies- Paul Bishop, Program Manager). Day 3 was a breakfast meeting and a travel day. Although no U.S. students attended the Planning Visit meeting, U.S. students and junior researchers will be involved in all phases of the sensor development project itself. The U.S. PI's will include students from undergraduate through graduate levels for direct project involvement.

The outcome of this initial face-to-face meeting (Spring 2008) resulted in the submission and eventual award of a sensors development project (US-Ireland Partnership Program: BEACONS: Biosafety for Environmental Contaminants using Novel Sensors).

Due to flight cancellations Dr. Smith was unable to attend the meeting in Belfast. We did have a conference call to include her during this time but the results of this type of interaction were not optimal and she was unable to participate in the hands-on demonstrations. Therefore, a second group meeting was held in September 2009. This meeting will served as a project organizational meeting and kick-off for the BEACONS project. The kick-off meeting will be held in Dublin, Ireland and was hosted by Dr. O'Kennedy's group.

Training and Development:

Outreach Activities:**Journal Publications****Books or Other One-time Publications****Web/Internet Site****Other Specific Products****Product Type:**

Proposal awarded from NSF Program- Title "US-Ireland Partnership Program: BEA

Product Description:

A Proposal was developed from the meeting and submitted to the NSF Program of Environmental Implications of Emerging Technologies

the Proposal title was

"US-Ireland Partnership Program: BEACONS: Biosafety for Environmental Contaminants using Novel Sensors"

This proposal has been awarded funding and full work will commence after a "kick-off" organizational meeting in Ireland during September 2009.

Sharing Information:

This proposal abstract is already available on the NSF website
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501030

Contributions**Contributions within Discipline:**

This project will enable development of new technologies to deliver rapid and portable analysis of microbial pathogens and harmful species. Over the past several years, there has been substantial progress in a number of areas of sensor technology, biotechnology and nanotechnology. The combination of these approaches could lead to the development of portable technologies capable of producing rapid and reliable analyses for food contaminants of major concern. The consortium of partners assembled within the current proposal have considerable expertise in the areas of toxin analysis, biosensor technology, and protein engineering. Our goal is to develop the best possible working prototype for the sensor based measurement of selected toxins in the food supply chain.

One of the primary functions of the Planning Visits are to foster an increase in collaborative research relationships, the National Science Foundation (NSF), the Science Foundation Ireland (SFI), Invest Northern Ireland (Invest NI). The collaboration among the three institutions integrates the facilities and expertise of the investigators from DCU, UM, NOAA and QUB.

Partnership Strengths:

- ? The partners have the key relevant expertise related to the project aims
- ? The collaboration will harness their mutual strengths to successfully address major deficits in current sensor technology for toxin detection

- ? They have a well established international reputation in the development and application of sensor-based assays and toxin analysis
- ? There is an established successful collaborative record
- ? The project areas represent major issues for all partners with clear economic relevance
- ? The collaboration will provide the opportunity for exchange of expertise/training, personnel and assay platforms thus enhancing the expertise of all the partner laboratories

Contributions to Other Disciplines:

Contributions to Human Resource Development:

Contributions to Resources for Research and Education:

Although no U.S. students attended the Planning Visit meeting, U.S. students and junior researchers will be involved in all phases of the sensor development project itself. The U.S. PI's will include students from undergraduate through graduate levels for direct project involvement.

The PI's are exchanging graduate students to work in laboratories in Ireland and Maine during 2010.

Contributions Beyond Science and Engineering:

Conference Proceedings

Categories for which nothing is reported:

- Organizational Partners
- Activities and Findings: Any Training and Development
- Activities and Findings: Any Outreach Activities
- Any Journal
- Any Book
- Any Web/Internet Site
- Contributions: To Any Other Disciplines
- Contributions: To Any Human Resource Development
- Contributions: To Any Beyond Science and Engineering
- Any Conference