

**RHODE ISLAND INBRE**  
 IDEa Networks for Biomedical Research Excellence

APRIL 2009  
 NEWSLETTER



Zahir Shaikh, PhD

**IN THIS ISSUE**

<b>RI-INBRE summary to date</b>	<b>2</b>
<b>Goals for the next 5 years</b>	<b>3</b>
<b>At the Network Institutions</b>	<b>3 - 4</b>
<b>Updates—Bioinformatics Core</b>	<b>4</b>
<b>Featured Researchers and Students</b>	<b>5 - 9</b>
<b>Annual Winter Retreat 2009</b>	<b>10 - 11</b>



As we start out the new year, I wish to make several announcements. The first is that we submitted the 5-year competing continuation of the INBRE grant this summer 2008 which was approved for continued funding. This is very exciting news and ensures that the goals of the RI INBRE will continue to be met. I wish to thank all of you for your hard work and dedication. Please understand the importance of being a part of this multi-institutional grant. It is necessary to remain involved and up-to-date. New information and announcements are available on our website

[www.uri.edu/inbre](http://www.uri.edu/inbre). There are several key changes which should be noted. This is the first issue....our intent with forthcoming issues is to.....

The new half-time Program Associate, Sharon Fuller, will assist the Program Director and the Program Coordinator in the management of such tasks as serving as a liaison to the network institutions, interfacing with the scientific communities within and outside the RI-INBRE community, and serving as the editor of a planned newsletter.

CCRI has recently joined RI INBRE as a partner institution. During the current funding period, CCRI participated in the RI-INBRE activities as an outreach institution. Several of its students were recruited for the SURF program, and as a result are now pursuing higher degrees and careers in science. In the next phase of INBRE, CCRI will become a full participant in RI-INBRE activities and its representatives will serve on the Steering Committee (SC), strengthening and expanding the important role of CCRI in undergraduate student recruitment and training.

RI-INBRE is strengthening its high school outreach activities by forming a new partnership with the Advancing RI Science Education (ARISE) program, which was

recently awarded a Science Education Partnership Award (SEPA) from NCCR, NIH, at Brown for the next funding period. This includes plans for integrating high school teachers in the SURF program for four weeks. Newly acquired videoconferencing equipment is being applied to joint seminars and meetings for all network institutions within RI-INBRE and EPSCoR. Collaborative newsletters and upgrades to the websites ([www.uri.edu/inbre](http://www.uri.edu/inbre) and <http://stac.uri.gov/epscor/>) are being planned for the next funding period.



Chris Amrich, Samantha Taylor (RWU) and Dr. Vic Laties of the External Advisory Committee

*"The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them."*



## INBRE SUMMARY TO DATE



The Institutional Development Award (IDeA) Network of Biomedical Research Excellence (INBRE) was originally designed to provide funding to build research capacity in states that had not participated fully in the research programs of the NIH. The Rhode Island network, one of more than 20 INBRE-

supported networks nationwide, seeks to support and develop talented scientists—especially junior investigators and build a productive multi-site program for collaborative research in areas of molecular toxicology, cell biology, and behavioral science.

Substantial progress has been made in achieving the goals of the past RI-INBRE program. Building on the foundation provided in the current (next 5 year) funding period, continuation of the program is expected to strengthen and expand the research effort to include behavioral components at the undergraduate institutions, and to generate a diverse workforce of biomedical scientists in the state.

The overriding goal of RI-INBRE for the past five years was to create a high-level biomedical research and education capacity at institutions of higher education in the state. Toward that end, the specific goals and objectives of the current funding period were focused in four major areas: 1) Faculty Development; 2) Student Education and Training; 3) Outreach Programs; and 4) Infrastructure development: Centralized Research Core Facility and Bioinformatics Core Facility. In many cases, the availability of RI-INBRE funds for half of the academic year salary was instrumental in the creation of new faculty lines and expansion of the size of the departments.

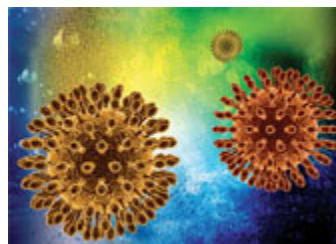
**Together, the URI, Brown, and PUI investigators have received over \$10 million in major external grant awards.**



Aftab Ahmed, Centralized Research Core Facility, URI

Under the Pilot Project program, a total of 28 one-year awards were made to 23 investigators over the five year period; 3 investigators received multiple awards. A number of the PUI investigators

are already involved in securing external grants. These are truly commendable accomplishments and a testament to the strength of the collaborative research spirit developing in the RI-INBRE community, which the RI-INBRE program has been actively advocating from the start. Several other investigators, including the PUI investigators, were also active in securing external grants for research, student training, and equipment purchases. Together, the URI, Brown, and PUI investigators have received over \$10 million in major external grant awards. In addition to the regular investigators, five of the Pilot Project investigators at URI, Brown, and RIC have also been successful in receiving multiyear extramural funding. Their awards total in excess of \$2 million.



In 2007 and 2008, STAC awarded a total of \$3 million to collaborative research proposals from academic and industry scientists throughout RI. Seven of the awards involved collaborations among RI-INBRE participants. In all, 18 RI-INBRE participants from 4 of the Network institutions

(URI, Brown, RIC, and SRU) shared in the awards which totaled \$937,089, further demonstrating the level of collaboration that is beginning to take shape in RI. SURF (Summer Undergraduate Research Fellowship) was implemented at URI and Brown in collaboration with the other institutions in the RI-INBRE network. The goals of the program were to provide a structured training environment for undergraduates interested in gaining biomedical research experience, to expose undergraduate students to laboratory research, and to familiarize them with career opportunities in the biomedical sciences. The program was advertised nationally through the RI-INBRE website, presentations at summer internship fairs, and internet posting services for various institutions of higher education in RI. Applications for the summer program at URI and Brown steadily increased from year-to-year and the applicant pool became highly competitive.



Dr. Marcia Marston, RWU

## GOALS FOR THE NEXT FIVE-YEARS



As we enter the next five-year phase of the grant, the four central goals will include: 1) Continue and improve faculty development and mentoring; 2) Recruit and train undergraduate and graduate fellows; 3) Provide access to state-of-the-art equipment and bioinformatics resources; and 4) Develop new initiatives and collaborations with other infrastructure development programs in the state. Achievement of these goals will

be accomplished by collaborative efforts of 19 participating faculty investigators in the network who will carry out research and educational objectives in the focus areas of molecular toxicology, cell biology, and behavioral science. Newly created faculty development programs include research-based collaborative projects and education-based student training initiatives. Proposed projects will focus on a variety of health-related issues including cancer, neurological diseases, drug metabolism, infectious diseases, tissue regeneration, and the effects of environmental toxins on human health.

A new emphasis in bioinformatics, strengthened by increased material and personnel support, will substantially improve the data mining and processing capabilities of biomedical scientists in the state. The SURF program in which students are given rich experiential training in biomedical research

methods and career counseling, will be continued. A new collaborative high-school outreach program is also



Dr. Robert Rodgers and  
slkdllkjkslkj

planned. It is anticipated that meeting these and other proposed objectives in the next phase of the RI-INBRE program will continue to have a profound and measurable positive impact on the culture for biomedical and behavioral research and education in the State of Rhode Island.

In the interest of enhancing the capacity of both programs, RI-INBRE and RI-EPSCoR programs have combined their efforts and resources in several focus areas. The greatest emphasis has been placed on student training. The two programs have unified their SURF programs. These now include students whose research projects are supervised by both RI-INBRE and EPSCoR faculty. RI-INBRE is also involved with other INBRE programs in the northeast region. For example, one of the RI-INBRE investigators (Dr. Stoner) is being mentored by a member of the Vermont INBRE, and North Dakota INBRE proteomics core facility recently analyzed protein samples for the RI-INBRE. Without the INBRE program, such flourishing interactions among the scientists, program administrators, and states would not have occurred.

The presence and constant flow of graduate students and postdoctoral fellows in science and engineering is important in enhancing the future of the research and development community. The quality of scientists, engineers, and other technical workers that the state attracts, trains, and retains will profoundly and positively affect the development of RI's future technology industries and economic growth. The RI-INBRE Program undoubtedly has and will continue to be an indispensable component for science and technology growth in RI.



## AT THE RI-INBRE NETWORK INSTITUTIONS

At URI, over the past 5 years, three RI-INBRE junior investigators (Drs. Rowley, Parang, and Sun) received multi-year funding and graduated from the program. As a result, the University created four new faculty positions; three in the College of Pharmacy (Drs. Kovoor, Slitt, and Stoner) and one in the College of the Environment and Life Sciences (Dr. Howlett). All four investigators had a research interest in molecular toxicology, the main thematic focus area of the RI-INBRE program at URI and Brown.

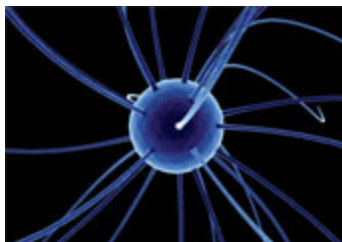
At Brown University, Dr. Hixon was supported by INBRE for three years when she received her NIH R01 grant and graduated from the program. Similarly, Dr. Peti has recently been able to graduate ahead of schedule from INBRE support following his success in obtaining R01 and R21 awards. Among the other INBRE supported faculty, Dr. Page has received a multi-year grant award from the American Cancer Society. Several senior faculty have served as mentors for the RI-INBRE investigators at the Network institutions. At RIC research has become a

stronger focus in both the Biology and Physical Science departments as a direct result of RI-INBRE support. Three new faculty members were hired on tenure-track lines (Drs. Almeida, Merson, and Spinette). Two research proposals from the Psychology Department for the next

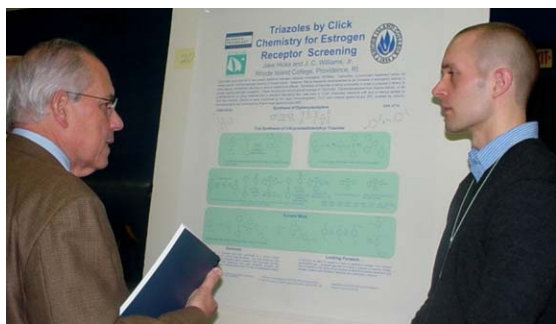


funding period will further enhance networking by continued association with the RI-INBRE program. Funding of a senior investigator (Dr. John Williams) for the primary purpose of student training has further broadened options for undergraduates. A larger number of graduates are now seeking to move on to graduate and professional programs. Recently, the Biology Department has proposed to offer a B.S. program in addition to the B.A. The B.S. curriculum would require a research experience that is taken for academic credit. This curricular revision was made feasible with the RI-INBRE-supported expansion of the research infrastructure.

Providence College has recently completed searches for three psychologists who may apply for RI-INBRE support in the future. The addition of the new faculty lines, coupled with existing faculty positions and the anticipated close cooperation with biochemists in the Chemistry Department will produce a rich and varied learning environment for undergraduate research. The RI-INBRE program has contributed to the development of the Biology Department by providing additional setup funds for new faculty lines. PC has added tenure-track position in genetics (Dr. Austriaco) and neurobiology (Dr. DeGiorgis) and is searching for a microbiologist.



At RWU two new faculty members in Biology have been hired as a direct result of INBRE support (Drs. Espinosa and Taylor). The Departments of Biology and Chemistry

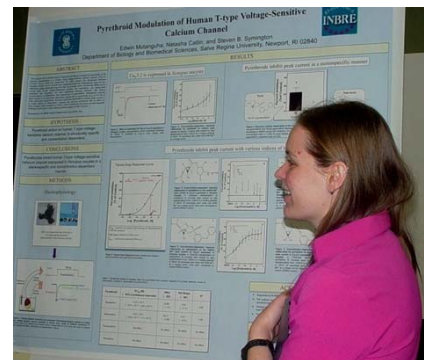


Dr. Steve Cohen, EAC and Jacob Hicks, RIC

currently plan to hire a bioinformatics specialist and a biochemist in the near future. Nearly 92% of the RI-INBRE associated RWU students are now employed in the biological sciences, or are attending veterinary school, medical school,

or graduate programs in chemistry or biology.

The sciences at SRU are profoundly improved as a result of RI-INBRE support. Two new faculty members (Drs. Symington and Munge). Also, with RI-INBRE funding, the Departments of Biology and Biomedical Sciences and Chemistry now have state-of-the-art equipment for both research and the expansion of laboratory components of the science curriculum. There is increased student interest in independent research to the point where faculty must choose among excellent students for the positions available. Because SRU can offer these experiences, more science students are being retained. Students who have participated in the program have been accepted into Ph.D., M.D., D.O., P.T., and J.D. programs in RI and elsewhere.



Suzy blah blah blah (SRU)

During the past funding period, CCRI participated in the RI-INBRE activities as an outreach institution. Several of its students were recruited for the SURF program, and as a result are now pursuing higher degrees and careers in science. In the next phase of INBRE, CCRI will become a full participant in RI-INBRE activities and its representatives will serve on the Steering Committee (SC), strengthening and expanding the important role of CCRI in undergraduate student recruitment and training.

## UPDATES FROM THE BIOINFORMATICS CORE FACILITY

The RI-INBRE is an active participant in the IDEa New England Network Initiative (NENI). The purpose of this initiative is to systemically improve inter-institutional collaborations among academic and biomedical institutions that lead to the development of sustainable biomedical research capabilities by significantly enhancing connectivity for academic and medical institutions in the New England states to the national research and education networks (Internet2/NLR) via existing regional initiatives (NoX and NEREN). Expertise available now



among the cores encompasses most areas of bioinformatics. This includes sequence and structure analysis, microarray analysis, proteomics, molecular modeling, visualization, database administration, scientific programming, high performance computing, web application development and system administration. The NEBC members, who are from the Bioinformatics Cores in the five NE states, (Delaware, Maine, New Hampshire, Rhode Island and Vermont) recently submitted a proposal to NCCR to establish

new network and data centers to collaboratively analyze large metagenomics data sets from toxic cyanobacterial blooms in the NE. Organizations in the central and northern parts of Rhode Island have access to high capacity fiber optic connections via OSHEAN, a non-profit that provides network access and services to the Northern Crossroads in Boston as well as a regional network, NEREN (North East Research and Education Network). OSHEAN was founded by URI and Brown University to enable access to Internet2 for regional institutions. Funds have yet to be available to establish a dedicated fiber optic connection to URI.

The URI main campus in Kingston, RI is a research intensive campus that currently does not have access to high capacity fiber optic cable. The proposed high capacity fiber optic backbone connecting URI to OSHEAN will link existing computational capacity at URI to the wider research community and enable researchers to leverage visualization and computational resources across the region.

*FEATURED INBRE RESEARCHER—DAVID TAYLOR, PHD; ASSISTANT PROFESSOR;  
ROGER WILLIAMS UNIVERSITY*

When I turned the corner to walk into Dave Taylor's office, the first thing I noticed was the selection of multiple fishing rods behind his desk. Along with the wall-size map of Narragansett Bay—tagged



appropriately with field collection sites, and huge boxes containing underwater cameras, it was obvious that Dr. Taylor had some very interesting research projects underway. Dr. Taylor is primarily a field ecologist and his past and current research focuses on recruitment dynamics and early life history of marine fish, finfish and shellfish habitat restoration, and environmental toxicology.

Dr. Taylor's research is predicated on undergraduate student training. He pushes his students to pursue research projects on their own, present research results at scientific meetings, and ultimately publish their work in peer-reviewed literature. Dr. Taylor's current students are Maria Piraino, Joseph Szczebak and Jennifer Linehan. All three students are contributing authors to Dr. Taylor's recent publications and have received both academic and travel awards as a result of INBRE funding. Maria and Joey are both seniors, are in the process of completing their theses, and will graduate this spring. Both Maria and Joey are also pursuing research at the graduate level, accepting positions at the University of South Carolina and Auburn University, respectively. Jennifer, a junior, will remain as an undergraduate research student working in Dr. Taylor's lab.



*Dr. David Taylor holding a bluefish*

His former INBRE students, Loong Fat Ho, Stacey Helming and Eric Payne, started their research experience with Dr. Taylor as freshmen or sophomores. Since then, Loong and Stacey have graduated from RWU in May 2008 and are currently pursuing their respective graduate degrees at the Florida Institute of Technology and University of Albany. Eric currently works as a research technician at the New England Aquarium (Boston, MA). He is the assistant to the aquatic veterinarian and performs a variety of highly inter-

*... "Man's mind, once stretched by a new idea, never regains its original dimensions" ...  
Oliver Wendell Holmes*

esting tasks, ranging from taking x-rays of loggerhead sea turtles to drawing blood from a puffer fish. As part of his job at the NE Aquarium, Eric will also participate in trips all over the world to collect specimens. Dr. Taylor is a recipient of a RWU Faculty Merit Review Committee Award in April 2008, which has reduced his lecture teaching hours, thus resulting in more hours dedicated to en-

gaging students in faculty research. Most of Dr. Taylor's research occurs during the summer, as much of it includes collecting specimens from Narragansett Bay for subsequent mercury toxicity studies. Dr. Taylor credits the INBRE grant with helping him establish a functional and productive research laboratory, as well as hiring and retaining excellent and dedicated undergraduate students. The facilities at RWU are very impressive, with a 3,000 square foot wet lab housing not only as an aquaculture facility but it also houses a dedicated ornamental fish laboratory, which focuses on the challenges of raising tropical species in captivity. As part of the growth of the Marine Biology



*Individuals from left to right are: Loong Fat Ho, Maria Piraino (background), Dave Taylor, Stacey Helming, Joey Szczebak, and Eric Payne.*

program at RWU, a new 4,000 square foot wet lab is under construction, and a new minor degree in Aquaculture and Aquarium Science has been added to the curriculum. Another fascinating venue of marine research at RWU involves the breeding and raising of species that are currently spawning in the large central tank at the NE Aquarium. This involves establishing a protocol for raising these species in captivity that currently is unknown.

FEATURED INBRE RESEARCHER—DAVID TAYLOR, PHD; ASSISTANT PROFESSOR

As part of the upcoming funding period, Dr. Taylor will be working under a new collaborative project with Warren Prell of Brown University. This project involves the analysis of factors underlying mercury bioaccumulation in marine fish of Narragansett Bay.



Dissecting bluefish in lab. Dave Taylor in foreground and Loong Fat Ho in background.

Mercury is a toxic environmental contaminant affecting human health, and exposure occurs mainly through dietary uptake of contaminated fish. To minimize mercury exposure, public health officials issue consumption advisories to inform citizens of the possible health risks associated with eating fish. While consumption advisories have been developed on a site-specific basis for fish inhabiting freshwater systems, advisories regarding the consumption of saltwater species lack geographic specificity.

To this end, national consumption advisories for marine fish are possibly ill-advised and ineffective because they do not account for small-scale spatial variations in mercury contamination. Dr. Taylor's investigation will focus on Narragansett Bay, Rhode Island, where local fisheries are important dietary and commercial resources for denizens of the state. Rhode Island land use/watershed characteristics and potential point sources of mercury will be correlated with measured values of mercury from site-specific collections of sediment and certain marine fish and invertebrate species.

These data will be used within the framework of a geo-



Dr. Taylor's students from left to right: Jennifer Linehan, Maria Piraino and Joseph Szczebak

graphic information system to create predictive models and analyze spatial relationships between Rhode Island land use and watershed characteristics, mercury pollution, and contamination in the marine food web.

*Dr. Taylor credits the INBRE grant with helping him establish a functional and productive research laboratory, as well as hiring and retaining excellent and dedicated undergraduate students.*

These empirical models will be evaluated and refined to include

spatial and mechanistic factors underlying mercury bioaccumulation in marine fish, as determined by environmental mercury levels and food web analyses. Such models provide the necessary link between environmental regulations and their efficacy in minimizing dietary fish mercury contamination in humans.



FEATURED INBRE RESEARCHER—YINSHENG WAN, PHD; ASSOCIATE PROFESSOR DEPARTMENT OF BIOLOGY, PROVIDENCE COLLEGE

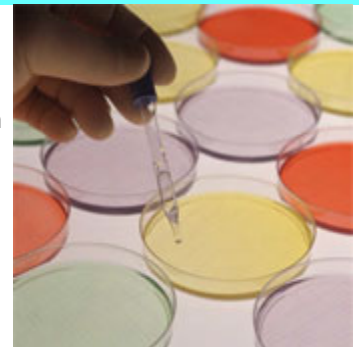


Dr. Yinsheng Wan and his student Andrew ...in the lab

I recently met with Dr. Wan and his students at their bi-monthly lab meeting at Providence College. Dr. Wan's charm and sunny disposition was evident immediately, as was the obvious respect he garners from his students.

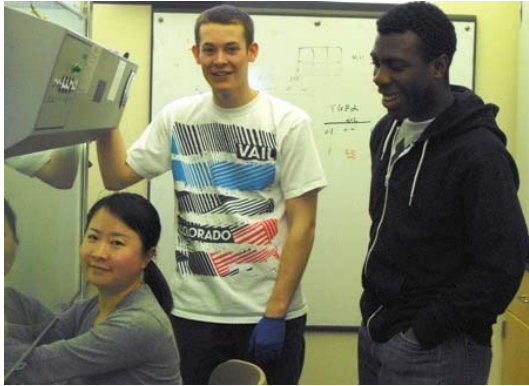
Dr. Wan works on a project called "Mechanisms of CpG-ODN's protection against UV-induced cell death."

UV radiation from sunlight is a major etiologic factor of nonmelanoma skin cancer that occupies half of cancer in the United States and remains as a serious social and economical concern. If untreated, skin cancer can be life-threatening. While more efficient strategies against skin cancer are under development, understanding the mechanisms of how skin cancer is induced and developed upon chronic UV radiation becomes urgent. Although the molecular mechanisms of UV-induced skin cancers are still not well understood, a number of approaches are sought to protect against UV radiation.



*FEATURED INBRE RESEARCHER—YINSHENG WAN, PHD; ASSOCIATE PROFESSOR  
DEPARTMENT OF BIOLOGY, PROVIDENCE COLLEGE*

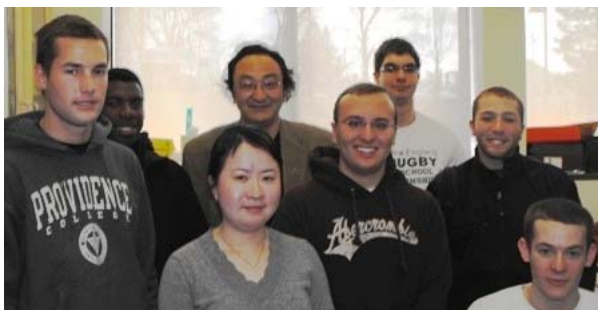
Dr. Wan and his colleagues are confident that their study will delineate novel cell signaling pathways through which UV induces apoptosis and CpG-ODN protects against UV-induced cell death. Further, their study will help develop better strategies for clinical management of UVB-induced skin cancer.



*Lucy, David and Tyrone, PC*

The proposed collaborative project will involve graduate and undergraduate students to understand the molecular mechanisms of UV radiation-induced skin cell damages and skin cancer. This project will also identify new promising drug, CpG-ODN's protective effect against UV induced skin cell damage and skin cancer. His proposed collaborative project will involve graduate and undergraduate students to understand the molecular mechanisms of UV radiation-induced skin cell damages and skin cancer. This project will also identify new promising drug, CpG-ODN's protective effect against UV induced skin cell damage and skin cancer.

Dr. Wan is a very devoted professor and productive researcher, having more than 14 publications to his credit in 2008 alone. He currently has 12 undergraduate students working in his lab. Several of his students will graduate this May. Tyrone last name has applied to several graduate schools in Boston as well as U Mass Medical Center in



Worcester. Another student, Pete name, has been accepted at four medical schools. Dr. Wan will retain 4 ? Undergraduates this summer as part of the SURF program at PC. He also has has several high school students in the past several years. One student, Philip name is at PC School of Law and another student, Rob...is at the University of Chicago Biology program. You can see from the smiles and laughter at the meeting, that the students are very comfortable around Dr. Wan. Tyrone, who graduates in May, says "Dr. Wan taught us to combine fun with work."

Another of his students, Becky...., says "she really enjoyed the research experience in the lab so far. She feels that it gives her an edge over her peers and is a great opportunity to experience leadership, lab techniques and reading and understanding research publications.



*Dr. Yinsheng Wan, PC*

Dr. Wan concentrates on teaching his students how to read



*Rebecca and David , PC*

research papers, how to get data, make graphs and understand how to organize them for publication. Dr. Wan feels that it is important to have undergraduates involved in publishing, although he credits his post-docs with performing most of the 24-7 work (i.e. cell cultures must

be watched constantly.) The post-docs teach the undergraduates how to culture cells and run Western blots. Initially the students observe and through subsequent discussions, if they have the confidence that they would like to try cell culture, he gives them the opportunity to learn by trial and error.

Dr. Wan is highly motivated and shares his love for research with them. He told me that doing research can be viewed as a difficult and boring thing, and if a student has no interest in this, he cannot push them. If on the other hand, he can inspire them to find something that piques their interest, then the research experience takes on a very different experience. One of his former students, Holly Amaral, was originally an Economics major, and when she took Dr. Wan's Biology course for non-science majors, she "converted" to a Biology major.

Dr. Wan has a non-stop smile and energy that is contagious. He told me of a very lucrative job offer with a major pharmaceutical company which he turned down. He said the rewards he gets from his students is something money can't buy. He enjoys teaching so much, he doesn't consider it a job. He mixes the hard work he and his students accomplish with a little time at the golf course and maybe a barbeque or two. He said he would give me his very special recipe for barbecued chicken wings. I'll be looking forward to that.

## FEATURED INBRE PILOT PROJECT

BRENTON DEBOEF, PHD, ASSISTANT PROFESSOR; DEPARTMENT OF CHEMISTRY, URI

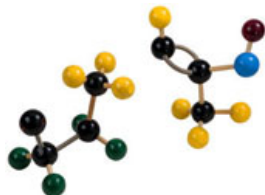


Dr. Brenton DeBoef

INBRE Pilot Project  
"Synthesis of Next-  
Generation Inhibitors of  
Botulinum Neurotoxin."

Behind the glasses and the big white smile is a very sweet, engaging and highly-motivated young chemistry professor. Maybe he's smiling because he just received a major award (\$550K) from the NSF for his proposal "Synthesis of Biaryls via Oxidative Coupling." The overarching goal of this project

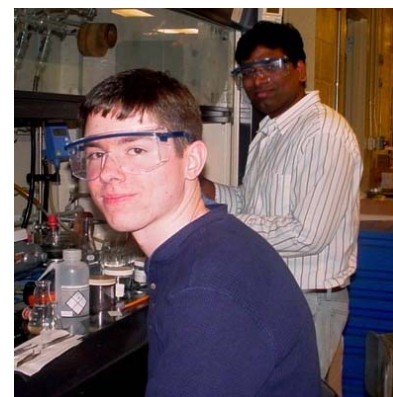
involves the synthesis of small molecule inhibitors which could result in promising new treatments for cancer. The precursor to this proposal was initially a pilot project he started with seed money from the RI INBRE grant. The first INBRE project relied totally on the development of new chemical reactions and ultimately did not achieve the intended results. However, the work did lead to a second project which ultimately resulted in his recently-funded NSF proposal. His first INBRE student, a highly-talented SURF student in 2006, Nicholas Rue, was instrumental in the success of that project, and he was a second author on a manuscript that was the sixth most downloaded paper from the *Organic Letters*\* website \*Timothy A. Dwight, Nicholas Rue, Dagmara Charnyk, Ryan Josselin and Brenton DeBoef "Aerobic Oxidative Coupling as a Method for Synthesizing Heterocoupled Biaryls: C-C Bond Formation via Double C-H Functionalization," *Org. Lett.*, 2007, 9, 3137-3139.



A second important project of the DeBoef laboratory is a current INBRE pilot project, "Synthesis of Next-Generation Inhibitors of Botulinum Neurotoxin."

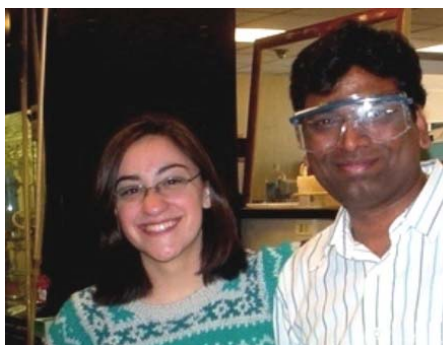
Botulinum neurotoxin (BoNT), a protein that is produced by *Clostridium botulinum*, is the most poisonous protein in the world. The active site of BoNT includes a zinc endopeptidase. Dr. DeBoef's work has resulted in the invention of a new reaction to synthesize several promising inhibitors of this zinc endopeptidase. One of his current graduate students, Shathaverdhan Potavathri, was a major contributor to their

successful patent on the synthesis methodology for such inhibitors. Inhibitors of this toxin are scarce and are of great interest to the biomedical and defense community as a possible anti-toxin agent. Shatha, in his third year with Dr. DeBoef, has a MS in Organic Chemistry from Technische Universität Braunschweig. Dr. DeBoef collaborates on this project with Dr. Bal Ram Singh from the Botulinum Research Center at the University of Massachusetts Dartmouth. Biological testing of the inhibitors will be performed in the laboratories of Dr. Singh. Dr. DeBoef's approaches to organic synthesis are applicable to new drug therapies as well as biomedical imaging and include several significant grant applications. The funds from the INBRE Pilot/Feasibility Study Grant have been used to purchase chemicals and glassware, and to pay the summer salaries of two graduate students. These items are essential for the successful implementation and completion of the proposed project.



Dr. DeBoef's students: Gregory Naumiec and Shatha Potavathri

Although Dr. DeBoef has added some important equipment



Sarah Decato and Shatha Potavathri

to his own laboratory, he has utilized and continues to utilize equipment from the INBRE Research Core Facility at URI such as the Mass Spec and HPLC.

Dr. DeBoef's boasts several highly successful former students from his laboratory. Ashley Du-

mas, on the 1<sup>st</sup> INBRE – left w/ master's degree – is now employed with Millenium Pharmaceuticals in Cambridge, MA. Timothy Dwight, a graduate student on the 2<sup>nd</sup> INBRE- left w/master's degree – is now employed with Ariad in Cambridge, MA. Another former SURF student from his 2<sup>nd</sup> INBRE project, Stephanie Tumdajski, is currently working on her PhD at MIT. Dr. DeBoef maintains a keen acknowledgement of his students and their efforts including an outstanding undergraduate member of his laboratory, Sarah Decato. He is excited about the dedication and hard work she applies to their ongoing projects. We will keep you posted on any new and exciting developments from his laboratory. You can learn more about Dr. DeBoef's work at [www.uri.edu/inbre](http://www.uri.edu/inbre) or at [www.chm.uri.edu/bdeboef](http://www.chm.uri.edu/bdeboef).



FEATURED OUTSTANDING UNDERGRADUATE STUDENT  
ANDREA HODGSON



Andrea Hodgson, former URI undergraduate

In high school Andrea was part of research program where each student worked on an independent research project. She wanted to test a natural soap vs. a synthetic soap containing triclosan to compare the antibacterial properties. Andrea ended up competing in science fairs and winning awards in the microbiology fields, so she decided to study microbiology for my undergraduate degree. While

at URI, Andrea wanted to learn "real lab" experience as opposed to the class associated labs and worked in Dr. Albert Kausch's lab for credit for one academic year. She worked on switchgrass for bio-fuels and PennA4 grass. She learned basic techniques and plant tissue culture. After that she came into contact with Dr. Matthew Stoner. Andrea worked in his lab for one calendar year on a project screening novel chemical entities on a breast cancer cell line to determine the estrogenicity of the compounds and learned many techniques and got experience talking about my research through conferences and poster sessions. She won a poster award at the BioNES 2008 conference. While doing research in Dr. Stoner's lab, she received scholarships from LSAMP, SURF, and Norman and Alicia Tashash.

Matthew Stoner, Research Assistant Professor, Biomedical & Pharmaceutical Sciences had this to say about her: "Andrea is an extremely polite, personable, professional, talented and motivated individual. She worked tirelessly in my laboratory to screen new chemical entities for potential antiestrogenic activities that could be further exploited therapeutically to treat breast cancer. In a short time, Andrea mastered multiple molecular biology techniques, compiled a detailed laboratory notebook and maintained an excellent GPA in her coursework. Andrea presented her work in poster form on at least three occasions, both in-

***"Andrea was an invaluable asset to my laboratory and I depended on her more and more to carry out essential functions that are normally performed by graduate students and postdoctoral***

state and out-of-state. Andrea was an invaluable asset to my laboratory and I depended on her more and more to carry out essential functions that are normally performed by graduate students and postdoctoral fellows. I am confident that as she continues in her studies at Johns Hopkins, she is well-equipped to make significant contributions to basic research projects aimed at improving public health."

Andrea graduated a semester early in December 2008 and will be starting gradu-



Andrea Hodgson at the SURF summer retreat 2008

ate school at Johns Hopkins Bloomberg School of Public Health in September 2009. She will be enrolled in the Molecular Microbiology and Immunology Ph.D. program and hopes to get into a lab working on HIV and immune reactions in the host. Currently Andrea is working for Clean Harbors, an environmental testing company, at the Bristol Myers Squibb facility in Princeton, NJ as a microbiology lab technician making media and testing water samples.



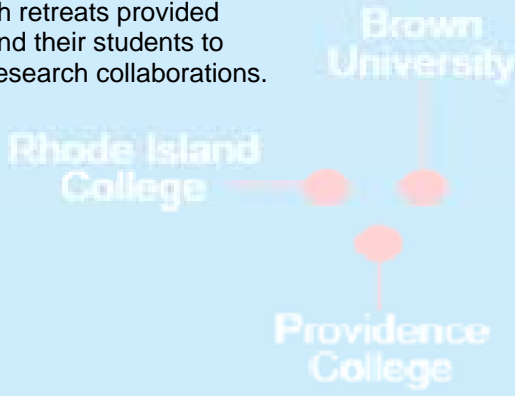
Dr. Matthew Stoner, Andrea Hodgson, Laura Hamel and Julie blah blha of URI

Biomedical Researchers Hold Winter Retreat at Roger Williams University

BRISTOL - More than 100 researchers who are part of Rhode Island's Idea Network of Biomedical Research Excellence (INBRE), a collaboration of the state's higher education institutions, held their annual winter retreat at Roger Williams University on January 30, 2009. Graduate and undergraduate students, scientists, investigators, administrators and faculty representing Roger Williams University, Salve Regina University, the University of Rhode Island, Brown University; Rhode Island College; and Providence College attended the retreat. A total of 100 individuals participated in this event and 42 posters were presented by students and faculty. Both retreats provided opportunities for the investigators and their students to share research findings and foster research collaborations.



Colleen Krause, SRU



Mary Beth Stromberg and Edwin Mutanga, SRU



Drs. Daniel Udvary and Bongsup Cho, URI



Nicole Gadbois and Liam Burke, RIC



Breton Roussel, PC

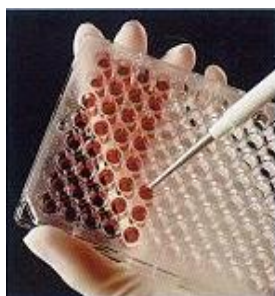


Lines Millord, SRU and Dr. John Williams, RIC

Winter Retreat at Roger Williams University



Students at the 2009 Winter Retreat at RWU



Blanaalkdikkjdl and Nate



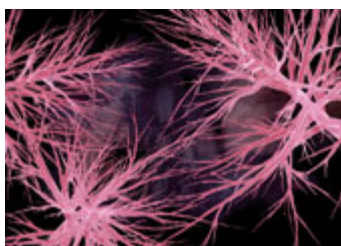
Xiulong Song, URI



Dr. Steven Symington, SRU



Dr. George Lenz, EAC



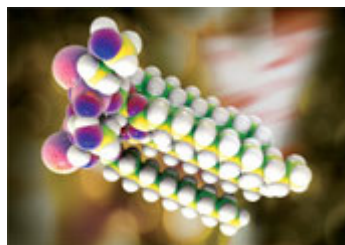
Mary Beth Stromberg, SRU



Laura Hamel and Dr. Steve Irving, URI

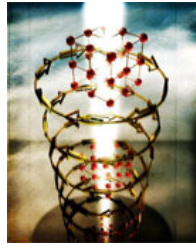


Vijay More and Dr. Nial Howlett, URI



Serena Kankash, Nicole Gadbois and Dr. Sarah Spinette, RIC





*Drs. Robert Rodgers, Bongsup Cho and Roy Okuda*



*Drs. Rebeka Merson, Deborah Britt and Avelina Espinosa*

## Mark your calendar

**Northeast Regional IDEa Meeting  
Burlington, VT  
August 15-17, 2009**

**RI-INBRE Main Office  
305 Fogarty Hall  
College of Pharmacy  
41 Lower College Road  
Kingston, RI 02881**

RETURN SERVICE REQUESTED

**The Mount Desert Biological Laboratory  
P.O. Box 35  
Old Bar Harbor Road  
Salisbury Cove, ME 04672**

### **REMEMBER TO CITE THE GRANT!**

Published Abstract: At the end of the text, add in parentheses:

"(This publication (or the project described) was made possible by RI-INBRE (or RI-BRIN) Grant # P20RR016457 from NCRR, NIH)"

Journal/Book Publication: Depending on the format used by the publisher, either as a footnote or in the Acknowledgement section, add: "This publication (or the project described) was made possible by RI-INBRE (or RI-BRIN) Grant # P20RR016457 from the National Center for Research Resources (NCRR), a component of the National Institutes of Health (NIH)." and "Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NCRR or NIH."

