Winter 2013 NEWSLETTER

Rhode Island INBRE

IDeA Networks for Biomedical Research Excellence

NEWS AND EVENTS

2012 Summer Undergraduate Research Fellows Conference

The 11th Annual Summer Undergraduate Research Fellowship (SURF) Conference was held in collaboration with the RI EPSCoR Program on Friday, July 27, 2012 at the Center for Biotechnology and Life Sciences on the University of Rhode Island's Kingston Campus. The majority of the 300 plus participants consisted of students, faculty, and administrators representing the University of Rhode Island, Brown University, Providence College, Rhode Island College, Rhode Island School of Design, Roger Williams University, Salve Regina University, the Community College of Rhode Island, and Bryant University. Welcoming remarks were given by the Governor of the State of Rhode Island, Lincoln Chaffee, University of Rhode Island President David Dooley, Dr. Zahir Shaikh (Director of RI-INBRE), and, Dr. Peter Alfonso (Director of RI EPSCoR and the University of Rhode Island's Vice President for Research). Also recognized at the conference were the students that were awarded special fellowships as part of the 2012 RI-INBRE SURF Program. Madeleine Suits, Kevin Northup, and Annalisa Sharkey, all undergraduate students at URI's College of Pharmacy, were awarded the URI College of Pharmacy Dean's Fellowships. Holly Tran, a URI undergraduate majoring in the Biological Sciences, was awarded the URI Provost's Fellowship and Kevin Sun, a URI undergraduate majoring in Microbiology, was awarded the Rhode Island Science and Technology Advisory Council's Carcieri Fellowship. A total of 134 scientific posters were presented, of which 78 were by the 88 RI-INBRE undergraduate and graduate Fellows.

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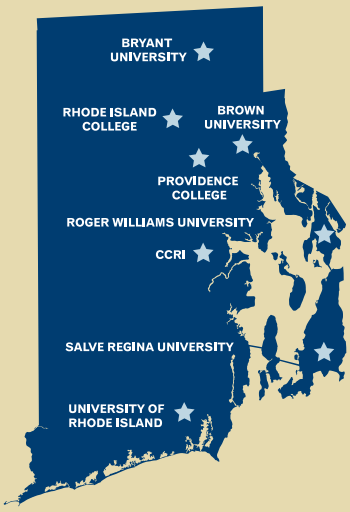
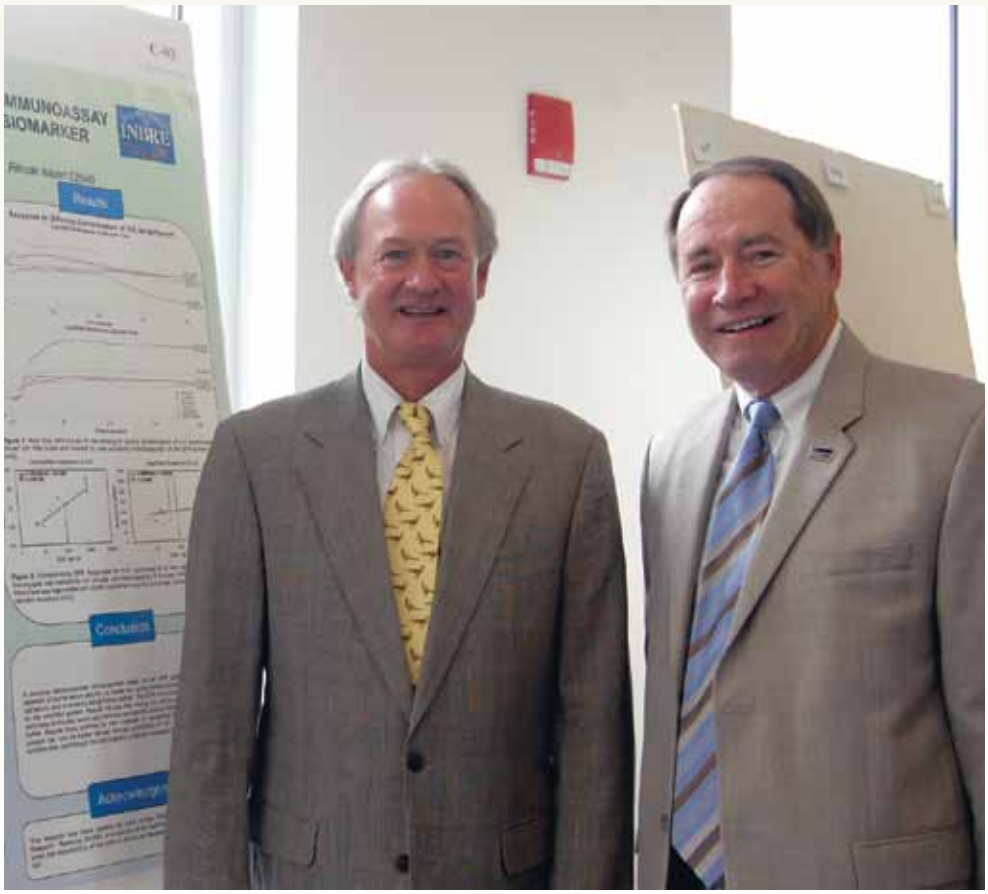
In this Issue

OUR MISSION

The Rhode Island network, one of the 24 INBRE networks nationwide, seeks to support and develop talented scientists, especially junior investigators, and build a productive multi-site program for collaborative research in molecular toxicology, cell biology, and behavioral science.





Governor Lincoln Chaffee and URI President, Dr. David Dooley

FROM THE DIRECTOR

A number of important changes have occurred since our last Newsletter was published about a year ago. We welcomed a number of newcomers to our community. In February 2012, Dr. Timothy Ford, Dean of Graduate Studies and Public Health at the University of New England, joined our External Advisory Committee. Dr. Ford brings a wealth of pertinent experience to the Committee as he was formerly Program Director for the Montana INBRE. With the reintroduction of Bryant University to our network, Dr. Gaytha Langlois, Chair of the Science and Technology Department, now represents this institution on our Steering Committee. The biggest change occurred in June when Dr. Keykavous Parang, Professor of Biomedical and Pharmaceutical Sciences at the University of Rhode Island (URI), became our Program Coordinator. He is not new to the program, however, as he was a sub-project investigator during the BRIN phase and had remained involved with the RI-INBRE activities since his graduation from the program. He replaced Dr. Bongsup Cho who became the Associate Dean for Graduate Studies and Research at URI's College of Pharmacy after providing many years of dedicated service to the RI-BRIN/INBRE program. In August 2012 Dr. Hany Alashwal joined us as the Bioinformatics Core Coordinator. He is experienced in educating and guiding the researchers in the use of bioinformatics tools for analyzing research data. Our only loss occurred in December when Nathan Nous, Research Associate in the Centralized Research Facility Core, decided to retire. We wish Nate the best in his golden years.

The administrative office of the RI-INBRE Program, along with the Centralized Research Facility Core and the Bioinformatics Core moved to the fourth floor of new College of Pharmacy building in September. Patricia Murray, our Fiscal Coordinator, couldn't be happier as she is surrounded by glass and enjoys unobstructed views of the greenhouses. Jeff Ulricksen, our Program Assistant, on the other hand would rather keep his shades down and concentrate on attending to all other matters of the day with assistance from our student helper, Suzie McDonald.

> The past year was a banner year for our investigators in terms of submitting their independent research grant applications to NIH.

I am happy to report the inclusion of several new investigators to the RI-INBRE program. Dr. Xiaoqun Dong (Assistant Professor of Biomedical and Pharmaceutical Sciences, URI) and Dr. Emily Cook (Assistant Professor of Psychology, Rhode Island College) are the Faculty Development Program awardees. Dr. JD Swanson (Assistant Professor of Biology and Biomedical Sciences, Salve Regina University) and Dr. Jennifer Van Reet (Assistant Professor of Psychology, Providence College) are the Student Training Program awardees. There are also 2 new Student Training Pilot Project awardees (Dr. Susan Meschwitz, Assistant Professor of Chemistry, Salve Regina University and Dr. Thomas Meedel, Professor of Biology, Rhode Island College) and 2 new Proposal Development Pilot Project awardees (Dr. Elena Oancea, Assistant Professor of Medical Science, Brown University and Dr. Nicolas Fawzi, Assistant Professor of Biology, Brown University). We welcome these colleagues to RI-INBRE and wish them all great success in their research and student training activities.

Dr. Zahir Shaikh

Our Winter Retreat, which is held at a different network institution on a rotating basis, was held on February 3rd at Rhode Island College (RIC). Dr. Ronald Pitt, Vice President for Academic Affairs, provided the welcoming remarks. The program consisted of platform presentations by Dr. Thomas Malloy (Professor of Psychology, RIC), Dr. Christopher Reid (Assistant Professor of Science and Technology, Bryant University), and Dr, Wei Lu (Assistant Professor of Biomedical and Pharmaceutical Sciences, URI). The other investigators in attendance presented posters. Additionally, participants were apprised of program updates, upcoming events, and other programmatic issues.

For the fourth time, our 2012 Summer Undergraduate Research Fellows (SURF) Program was organized in collaboration with RI EPSCoR. A total of 88 students at all the network institutions were supported by RI-INBRE and other sources of funding. The summer research program culminated with the 11th Annual SURF Conference on July 27th at URI's Center for Biotechnology & Life Sciences. Governor Lincoln Chafee, URI President David Dooley, and Vice President for Research and Economic Development Peter Alfonso gave welcoming remarks. A number of administrators from the network institutions also attended the occasion. More information about the SURF Program and Conference is provided in an accompanying article in this issue.

The past year was a banner year for our investigators in terms of submitting their independent research grant applications to NIH. A total of 9 AREA grant applications (R15) were submitted. Based on the reviews received, revised applications are being prepared for resubmission in 2013. To improve their chances of success, a grant writing workshop and one-on-one counseling sessions with consultants will be held at the upcoming Winter Retreat which is scheduled at Bryant University on Friday, February 8.

As many of you know, the National Center for Research Resources, which provided funding for the IDeA Program, was disbanded in January 2012 and the IDeA Program was assigned to the National Institute of General Medical Sciences at the NIH. A number of key staff members moved with the Program, so the transition was seamless. Our current grant funding is good until April, 2014 and we are planning for our next 5-year competitive renewal. This grant application is due in June, 2013 and preparations will keep us all very busy.

PROGRAM UPDATES

Parang Seeks Input For Program Needs

Keykavous Parang, Pharm. D., Ph.D., the new Program Coordinator for RI-INBRE, has experienced for himself how the program can help a young researcher's career. "About a year after I was hired at the University of Rhode Island, when I was a junior investigator, INBRE helped me a lot because I didn't have a lot of start-up funding," Dr. Parang recalls. "The INBRE core facility provided access to a lot of equipment that I wasn't able to purchase myself. Eventually, I was a principal investigator, and then I was able to obtain external funding from the National Institutes of Health. I was graduated from INBRE support."

That's exactly how the program is designed to work, Dr. Parang says. "You should become independent and make space for new faculty," he says. But that didn't end his participation in INBRE. For several years, Dr. Parang coordinated the seminar series and also helped to manage the summer program. After he was promoted to full professor, INBRE Director Dr. Zahir Shaikh asked him to take on the role of program coordinator. "My job now is to be a liaison between the lead institution and our partners to ensure our programs are successful and productive," says Dr. Parang. "I also will ensure that we follow all the required guidelines in the grant criteria."

Dr. Parang already has lots of ideas for how to help support researchers in his new position. "My initial goal is to visit and listen to investigators, and come up with new ideas," he said. He'll also be working to improve the mentor program. He already is planning to offer a seminar on how to craft successful grant proposals, in response to input from researchers. He also plans to track the success of students who have been supported during summer programs, to generate a database that will help support future grant requests.

Dr. Keykavous Parang, RI-INBRE Program Coordinator

"The most important thing," he said, "is the communication between me and the investigators. I am hoping they will also feel the same and will provide feedback and communicate with me." Dr. Parang can be reached at kparang@uri.edu or 401-874-4471.

Alashwal Takes Over Bioinformatics Core

Dr. Hany Alashwal, RI-INBRE Bioinformatics Core Coordinator

When researchers delve into genome sequence analysis, they are soon wading in huge amounts of information -- gigabytes and terabytes of data. Finding the proper strategies and software to analyze and organize all that research is crucial to ensuring the best results. That's the job of Hany Alashwal, Ph.D., the new Bioinformatics Core coordinator for RI-INBRE.

"I can advise the researchers what is the best way to annotate their information," says Dr. Alashwal. "There are many software options to choose from, so I try to find the best software to do the job." He can also find open-source software and customize it to the needs of specific research problems. The Bioinformatics Core also offers access to a high-performance computing center at Brown University, as well as two local servers running a variety of software applications such as Sequencher, DS Gene, The Wisconsin Package, and AutoDock.

The Bioinformatics Core plans to organize seminars and workshops where researchers can learn from experts in the field about utilizing the bioinformatics tools in advancing their research. "We are also exploring the possibility of organizing a symposium in the near future", said Dr. Alashwal.

Dr. Alashwal earned a Ph.D. in computer science from the Universiti Teknologi Malaysia, where he studied both bioinformatics and artificial intelligence. Recent postdoctoral research in genomic and epigenomic data analysis and teaching experiences at the University of Rhode Island have further expanded his understanding of biological processes and how best to communicate with the biomedical researchers in solving complex problems.

Dr. Alashwal joined the RI-INBRE Program in July and holds a Research Assistant Professor appointment in URI's Department of Biomedical and Pharmaceutical Sciences. Researchers can contact Dr. Alashwal at hany@uri.edu or 401-874-9862 or visit http://www.uri.edu/inbre/bioinfo/ to learn more about how the Bioinformatics Core can assist in analyzing genomics and proteomics data, as well as modeling of protein structure and protein-ligand docking. Programming support will also be available for some research projects if needed.

FEATURED INVESTIGATORS

Dr. JD Swanson, Salve Regina University

A life-changing summer

Alyssa Guarracino, a junior at Salve Regina majoring in biology, was planning to go on to medical school, but her experience working on Dr. Swanson's INBRE project has convinced her to earn a Ph.D. and continue doing research in search of cancer cures. Over the summer, "I was back and forth to Brown University, culturing gastric cancer cells," she said. "That was really interesting, I'd never done anything like that before. It was a steep learning curve in the beginning." She used an incubator at Brown to grow the cells. "It was cool to watch under the microscopes how quickly they grew," she said. "I'd never seen anything like it." The team then exposed the cancer cells to gallic acid, from raspberries, to see if it would stop the cells from dividing. "We did see an effect, the growth of the cancer cells was arrested," said Ms. Guarracino. More research is needed to understand how the compound works, she said, but in the meantime, she offers some advice: "Eat your raspberries!"

Mentorship Key To Salve's Research Success

At the scenic campus of Salve Regina University in Newport, overlooking the famous Cliff Walk where crashing surf meets rocky shore, JD Swanson, Ph.D., doesn't mind that the window of his tiny office lacks an ocean view -- he has the view he's always wanted, a crowded and busy lab where he can work with eager young students and lead them in cutting-edge research. His latest project, marshalling a cadre of undergraduates in search of a cancer cure, "has the potential to be really groundbreaking," he says.

Dr. Swanson and his students are investigating compounds derived from raspberries to see if they affect the growth of cancer cells. "We're trying to understand the actual mechanisms behind how these compounds work, using the most advanced technology out there, and cooperating with the smartest people out there," says Dr. Swanson. INBRE support has been crucial, he said, not only to fund the student researchers but also to connect him with mentors, Dr. Steven Moss, at Brown University, and Dr. Marie Chow, at the University of Arkansas.

"Whenever I have some sort of hare-brained idea, I'll call Marie, and she really helps me," Dr. Swanson says. "She's kind of a sounding board." Dr. Chow also helped him with grant writing, he said, spending time to go over with him every page of his proposal. "She bought into me," says Dr. Swanson, "and that was neat. I always know she's just a phone call away, and that makes such a difference."

Mentorship has been crucial to Dr. Swanson throughout his career. "I was a bad undergraduate," he recalls. Born in New Zealand, he was the first in his family to go to college, and a little uncertain where it would lead. He was inspired to pursue science by a professor who hired him for a summer job. He went on to earn a master's degree, then took a job in the U.S. as a lab technician. "I was working in this academic setting, at Penn State University, and finally I came to this epiphany that what I really wanted was a professor's job," he recalls. He went on to earn his doctorate in plant physiology at Penn, then taught at Bryn Mawr College and the University of Central Arkansas before moving to Salve last year.

Over the summer, INBRE supported three of Dr. Swanson's students -- Alyssa Guarracino, Kelsey Stafstrom, and Ally Bierce -- who used lab resources at Brown University to advance their study of the raspberry compounds. "INBRE makes it possible to offer that experiential learning, so we can get students out of the classroom and into the lab, actually doing cutting-edge science," says Dr. Swanson. "Those three students will now become team leaders during the fall semester. They'll also be reaching out to high schools to talk about their research and get that next generation inspired. These students see it as their mission to go out to these schools."

The project was carefully designed to be manageable by student researchers. "The cool thing is, we can break down this massive project into small bite-size pieces, and create a hierarchy of work for freshmen through seniors, so they each have their own chunk," says Dr. Swanson. Besides gaining hands-on research experience, he said, each student learns about responsibility, mentorship, and time management, important skills for anyone in a science career.

Dr. Swanson also teaches useful skills in another setting -- he offers karate classes at Brown and Salve. "Karate shows you how life works, that with effort and perseverance, you can do so much more than you ever thought you could," he says. It's a lesson Dr. Swanson knows from his own life story. "Karate is such a great microcosm," he says. "It's neat to be able to pass that on to students."

At RIC, Students Examine Adolescent Risk Behavior

It's not easy to get through adolescence without a certain amount of stress, but some children weather it while others respond with high-risk behaviors such as delinquency and substance abuse. What factors determine those outcomes? Emily Cook, Ph.D., who was hired as an assistant professor at Rhode Island College just over a year ago, hopes her INBRE-funded research will shed light on that question, by studying how adolescents cope with stressful situations.


Dr. Emily Cook, Rhode Island College

"My background is in human development," she said in her office at RIC this summer. "After I got my Ph.D., at the University of North Carolina, I went for a post-doctoral appointment at Yale that was geared toward training people in prevention. That started me thinking about the implications of the work I do, in terms of the effectiveness of programs." When her post-doctoral appointment ended, "I really wanted a position where I could do both teaching and research," she said. "So, RIC appealed to me." RIC was looking for an applied developmental psychologist -- someone doing research in the community, as opposed to in the lab -- and that suited her, too.

Soon after arriving at RIC, she heard about INBRE and found support for her research. "I had this idea to expand the work I had done on how parenting affects stress, and integrate how adolescents respond to stress by measuring things like cortisol and blood pressure," she said. "There hasn't been a lot of research on how kids handle stress and how in turn those underlying physiological responses then affect risk behavior." Her goal is to examine the interaction of three variables -- family impacts, dysregulated stress response (such as, when someone gets overly excited, or can't calm themselves after the stressor is gone, or fails to respond at all -- a blunted or numb response), and risky behavior.

Over the summer, Cook and her students started to design the study and recruit a pool of test subjects. "We have three great undergraduates who were part of INBRE's SURF [Summer Undergraduate Research Fellowship] program," Dr. Cook said. Kristen Wilkinson, Kyle Fernandes, and Kayla Flynn worked on all aspects of the research. "We've been doing a lot of practice in the lab, and refining how the data collection process will work," Cook said. The students also help with recruitment, seeking out families at community events, and posting flyers. Each student will formulate a research question of their own over the course of the project, Dr. Cook said, and in the end each will write a literature review and a complete research report.

A graduate student, Amanda Welch, joined the project in the fall. Working together, the team plans to collect data from 100 adolescents between ages 14 and 16, and their mothers. "We'll ask the mom and the teenager to do an interaction task," says Dr. Cook. "They pick an issue of conflict and discuss it -- so that is a stressor. We also get a bunch of different physiological measures from the adolescent, before, during, and after this conflict. We take their blood pressure, collect saliva -- to measure cortisol, an indicator of stress -- and then we ask them to fill out a survey about risky behavior."

In the end, Dr. Cook hopes her work will help to create more effective strategies to prevent risky behavior in adolescents. And along the way, she is training the next generation of researchers, who will be ready to tackle the next generation of social problems.

KidThink Research Explores Value Of Pretending

Children have to learn a lot to succeed in our complex society, and one of the most useful skills they can master early is "inhibitory control" -- that's the ability to resist an inclination to act and instead choose to exercise restraint. "People with really good inhibitory control are better able to stick to a budget and a workout, anything that involves willpower," says Jennifer Van Reet, Ph.D., a developmental psychologist at Providence College. Mastering inhibitory control leads to good educational outcomes and good health. "Really getting those skills at age 4 seems to be key to setting you off on a good path," says Dr. Van Reet.


Dr. Jennifer Van Reet, Providence College

In her KidThink lab at PC, Dr. Van Reet and her students are exploring how young minds develop inhibitory control, especially in relation to pretending. "I think pretense is one of the most amazing cognitive processes we have as humans," says Dr. Van Reet. "It requires you to know about the real world, but also requires you to create an alternative to that real world, and to keep in your mind that one is real and one is not, and maintain a boundary between those two worlds. It's really an amazing ability, yet kids even as young as 1 and 2 can pretend, and they don't get confused -- they are able to keep real and pretend separate."

Dr. Van Reet suspects that children who are good at pretending, are also good at inhibitory control. Her research centers on exploring the relationship between those skills, and how that relationship changes as children grow. This summer, with INBRE support, Dr. Van Reet and her students conducted research on inhibitory control in children of various ages. "We're looking at kids in preschool, 3rd to 5th grade levels, and also undergraduates to see how certain mental processes change over 15

Continued on page 7

NEWS AND EVENTS CONTINUED

2012 Winter Faculty Retreat

The 8th Annual Winter Retreat was held from noon to 5:00 PM on Friday, February 3rd at the Student Union in the Ballroom on Rhode Island College's Providence Campus. Welcoming remarks were provided by Dr. Ronald Pitt, Vice President for Academic Affairs of Rhode Island College. Dr. Thomas Malloy of Rhode Island College, Dr. Christopher Reid of Bryant University, and Dr. Wei Lu of the University of Rhode Island gave oral presentations about their research accomplishments. There were a total of 62 attendees and 17 poster abstracts were also presented. The oral and poster presentations were followed by Program Updates.

NIH, NIGMS Fourth Biennial National IDeA Symposium of Biomedical Research Excellence

Brian Somba,
Salve Regina University

The NIH, NIGMS Fourth Biennial National IDeA Symposium of Biomedical Research Excellence was held at the Omni Shoreham Hotel in Washington, DC on June 25 – 27, 2012. In addition to the RI-INBRE program staff, Dr. Christopher Reid from Bryant University, Drs. Mindy Levine and Wei Lu from the University of Rhode Island, Dr. Deborah Britt from Rhode Island College, Drs. Bernard Munge and Steven Symington from Salve Regina University, Dr. Jennifer Van Reet from Providence College, and a number of their RI-INBRE-supported students participated in this meeting. Together, this group of faculty and students presented 11 posters. Dr. Wei Lu's poster entitled "Photothermal-chemotherapy of melanoma with hollow gold nanospheres" was selected as a Highlighted Poster for the Bioengineering, Biotechnology and Nanotechnology session while the posters presented by Morgan Smith and Brian Somba, undergraduate research fellows from Dr. Munge's laboratory at Salve Regina University, were both chosen as Highlighted Posters for the Cancer session. The titles of their posters were "Novel Multi-Labeled Magnetic Beads with Polymer Brushes for Ultra-Sensitivity Electrochemical Detection of Protein Cancer Biomarkers" and "Multiplex Electrochemical Immunosensor for Protein Cancer Biomarkers using Nanostructured Electrode Arrays" respectively.

Dr. Timothy Ford

Dr. Timothy Ford Joins the External Advisory Committee

In January 2012, Dr. Timothy Ford, Dean of Graduate Studies and Public Health at the University of New England, joined the RI-INBRE External Advisory Committee. His previous academic appointments included Professor and Head of the Microbiology Department at Montana State University in Bozeman, MT. During his academic career, he has served as the Montana INBRE Principal Investigator and, as an environmental microbiologist, has worked both nationally and internationally on water and health projects.

IMPORTANT DATES & ANNOUNCEMENTS

New date to be announced soon – Annual RI-INBRE Winter Retreat, Bryant University, Smithfield, RI

2/21/2013 – "Practical Cloud Computing for Bioinformatics" presented by James Vincent, Ph.D., Bioinformatics Core Director, Vermont Genetics Network, University of Vermont

3/1/2013 – SURF Program Application Deadline for the University of Rhode Island

3/22/2013 – "RNA computational toolbox: Algorithms and web servers to solve problems related with RNA secondary structure" presented by Peter Clote, Ph.D., Biology Department, Boston College

8/2/2013 – RI SURF Conference, University of Rhode Island, Kingston, RI

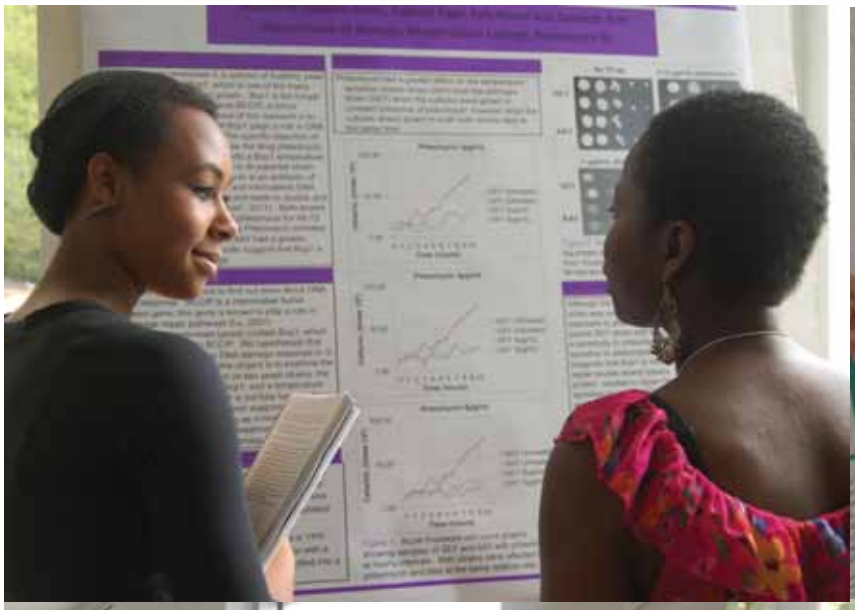
8/14-16/2013 – 5th Northeast Regional IDeA Meeting, University of Delaware, Newark, DE

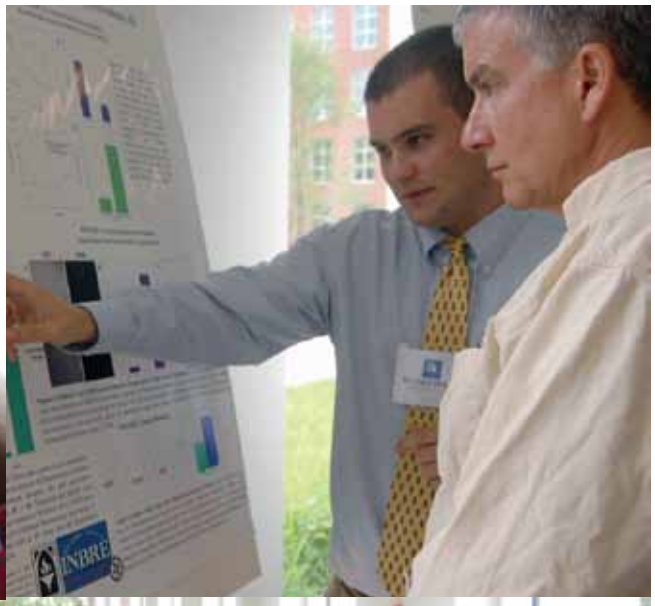
2/25, 6/25, & 10/25/2013 – NIH R15 Submission Deadlines

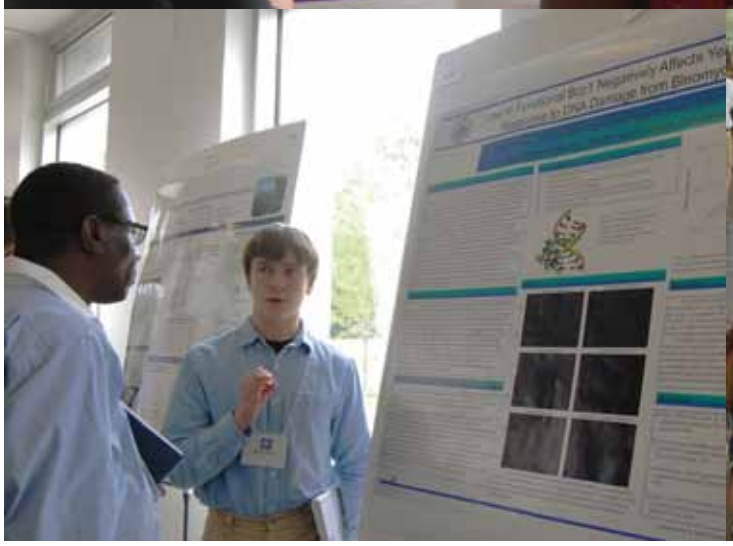
NIH Public Access Policy

The NIH Public Access Policy ensures that the public has access to the published results of NIH funded research. It requires scientists to submit final peer-reviewed journal manuscripts that arise from NIH funds to the digital archive PubMed Central upon acceptance for publication. To help advance science and improve human health, the Policy requires that these papers are accessible to the public on PubMed Central no later than 12 months after publication. For more information about NIH's Public Access Policy, please visit http://publicaccess.nih.gov/.

2012 Rhode Island Summer Undergraduate Research Fellows Conference







KidThink Research Explores Value Of Pretending *continued*

years," she said. "The whole goal of my field is to chart the development of cognition over a long time span."

The researchers test the subjects' reactions to various questions, using a sophisticated computer-based protocol. "We'll tell them a story, then ask questions about it, and measure their response in fractions of a second," Dr. Van Reet said. "The INBRE funding has enabled me to buy some of the software I needed to do these really precise measurements."

Already the team has preliminary results that show a difference in response at different ages. "We had a really productive summer," Dr. Van Reet said. Four undergraduates, supported by INBRE funding, worked in the KidThink lab -- Christina Lavigne, Alex Male, Cristina Taylor, and Katie McNulty. "They essentially run the lab," says Dr. Van Reet. "They schedule, they test the kids, they work with the data, and they analyze the data. We also go to the Providence Children's Museum once a week and conduct tests there. We go to farmers markets and fairs and talk to parents, to recruit participants for our study. We look for a diverse sample of normally developing kids. It gives students a great experience about what research is."

Dr. Van Reet joined the PC faculty, an assistant professor, in 2008, after earning her doctorate in developmental psychology at the University of Virginia. Last year, she was funded with a one-year pilot grant from INBRE, and in May she was awarded two years of research support. "I started working in a research lab as a sophomore in college. That lab was run by a female scientist, who was a great mentor to me. That's how I got bitten by the science bug, and that's why I'm really glad to be working with undergrads," she says. "I was lucky to start in research so young, and I just never stopped. Every question you answer raises about 10 more. It's never stopped being fun."

AWARDS and RECOGNITIONS

University of Rhode Island

Dr. Wei Lu's poster presentation at the NIH, NIGMS Fourth Biennial National IDeA Symposium of Biomedical Research Excellence was selected as a Highlighted Poster for the Bioengineering, Biotechnology and Nanotechnology session.

Bryant University

Dr. Christopher Reid received a Merit Award from Bryant University in August 2012.

Providence College

Dr. Brett Pellock published an article entitled "Shewanella oneidensis Hfq promotes exponential phase growth, stationary phase culture density, and cell survival" in BMC Microbiology.

Rhode Island College

Dr. Karen Almeida was featured in the Spring 2012 issue of the Rhode Island College Alumni Magazine

Roger Williams University

Mitchell Andrew, one of Dr. Avelina Espinosa's undergraduate students, received an Undergraduate Research Fellowship from the American Society for Microbiology. Only 8 of the 56 fellowships awarded went to students performing research at undergraduate institutions.

Salve Regina University

Posters presented by Morgan Smith and Brian Somba, both undergraduate students of Dr. Bernard Munge, were chosen as Highlighted Posters for the Cancer session at the NIH, NIGMS Fourth Biennial National IDeA Symposium of Biomedical Research Excellence.

Rhode Island INBRE

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