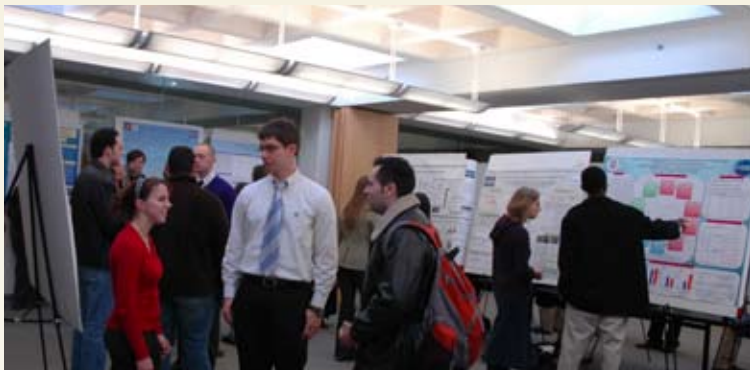


# Rhode Island INBRE

IDeA Networks for Biomedical Research Excellence

## NEWS AND EVENTS



2010 Winter Retreat at Providence College

### 2010 Winter Research Fellows Meeting & Faculty Retreat

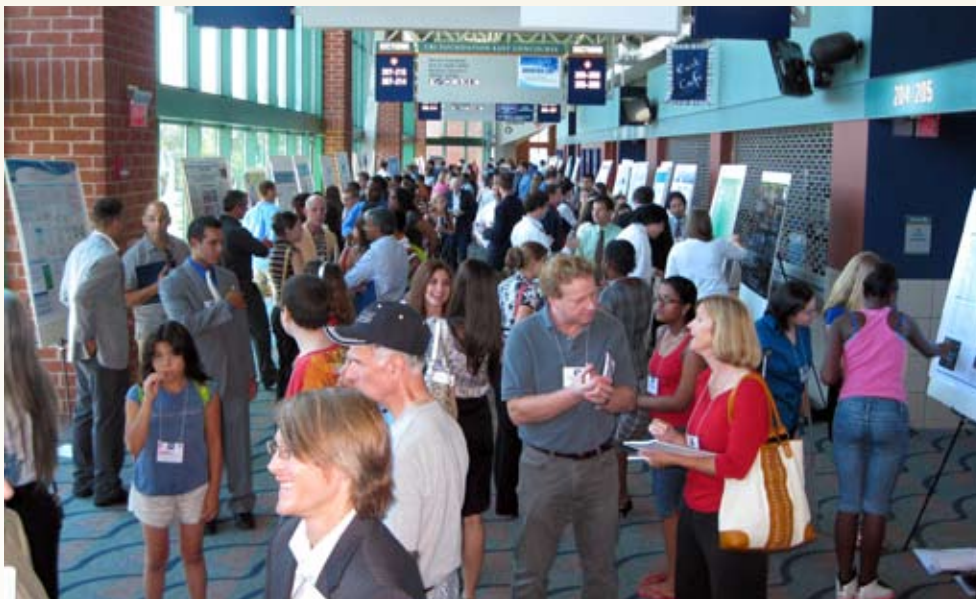
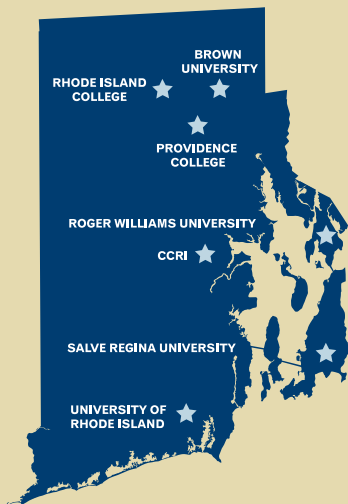
The event was held on Friday, January 29 at the Slavin Center of Providence College. Welcoming remarks were given by Dr. Sheila M. Adamus Liotta, Dean of the School of Arts and Sciences at Providence College. During the event, Dr. Christopher Bloom of Providence College, Dr. Niall Howlett of URI, and Dr. Rebeka Merson of Rhode Island College presented platform talks. There were a total of 115 attendees and 27 posters were presented. The Faculty Retreat included a discussion of the AAAS report.

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### 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.



2010 SURF Conference at URI's Ryan Center

### 2010 Summer Undergraduate Research Fellows (SURF) Conference

The 9th Annual SURF Conference was held on Friday, July 30, 2010 at URI's Ryan Center. It was a collaborative event with the RI EPSCoR Program. There were more than 275 participants from URI, Brown University, Providence College, Rhode Island College, Roger Williams University, Salve Regina University, the Community College of Rhode Island, and Bryant University. Welcoming remarks were given by the Lieutenant Governor Elizabeth Roberts, Amgen's Dr. Vinny Browning, and URI Provost Dr. Donald DeHayes. A total of 95 posters were presented, of which 64 were by the 85 undergraduate and graduate students, and high school teachers who received Summer Research Fellowships from RI-INBRE.

*News and Events continued on page 7*

## FROM THE DIRECTOR

Welcome to the Winter 2010-2011 issue of our Newsletter. There are many exciting items to report since our last issue. Four of our investigators have received independent research grants. Dr. Niall Howlett (University of Rhode Island), Dr. Abraham Kovoor (University of Rhode Island), and Dr. Nicanor Austriaco (Providence College) received grants from NIH (see related stories on Drs. Howlett, Kovoor, and Austriaco in this issue). Additionally, Dr. Marcia Marston (Roger Williams University) received a grant from NSF (see Honors and Awards section). Although these investigators either already have or will soon graduate from the RI-INBRE program, they will remain involved with the program in training students and other activities. I am also happy to report the inclusion of three new investigators to the RI-INBRE program. Dr. Brett Pellock (Assistant Professor of Biology, Providence College) and Dr. Wei Lu (Assistant Professor of Biomedical Sciences, University of Rhode Island) are the Faculty Development Program awardees and Dr. Beverly Goldfield (Professor of Psychology, Rhode Island College) a Student Training Program awardee. There were also six Pilot Project Award recipients: Dr. John Williams (Professor of Chemistry, Rhode Island College), Dr. Alison Shakarian (Associate Professor of Biology, Salve Regina University), Dr. Sandor Kadar (Associate Professor of Chemistry, Salve Regina University), Dr. Kirsten Antonelli (Assistant Professor of Science and Technology, Bryant University), Dr. Christopher Lane (Assistant Professor of Biological Sciences, University of Rhode Island), and Dr. Erica Larschan (Assistant Professor of Biology, Brown University).



Dr. Zahir Shaikh

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*The Carcieri Fellowship will provide a summer stipend, research supplies, and housing for a Rhode Island student participating in the SURF Program.*

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site visit. Overall, the program received a favorable review. Specific recommendations and suggestions to further improve certain aspects of the program were incorporated into our action plan and many of these initiatives have already been implemented. The review panel would continue to monitor the progress of the program on a biannual basis in future years.

The upcoming events include our Winter Retreat on February 4 at the Salve Regina University. This Retreat will have a forum on research mentoring. Also, on August 10-12 we will host the Biannual Northeast Regional IDEa Meeting. This event will also be held at the Salve Regina University. We are looking forward to welcoming the NCRR, NIH program staff as well as our INBRE and COBRE colleagues from the northeast states at this event. Please visit our website ([www.uri.edu/inbre](http://www.uri.edu/inbre)) for periodic updates on both events.

Please keep sending us your comments, suggestions, and accomplishments for the next issue of the Newsletter.

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*Four of our investigators have received independent research grants.*

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We are excited that the Rhode Island Science and Technology Advisory Council, which is part of the Rhode Island Economic Development Corporation, has announced that it will support a \$6,500 Fellowship in honor of the outgoing Governor, Donald Carcieri. The Carcieri Fellowship will provide a summer stipend, research supplies, and housing for a Rhode Island student participating in the SURF Program.

In March, the RI-INBRE program was evaluated by the Research Competitiveness Service of the American Association for the Advancement of Sciences through a

## PROGRAM UPDATES



The Centralized Research Core Facility houses about \$3 million worth of equipment for genomics, proteomics, and chemical analyses.

### Centralized Research Core Facility Updates

#### Seminars and Outreach

The Centralized Research Core Facility staff has been involved in campus visits, seminars, and outreach activities for the participating RI-INBRE undergraduate institutions. On July 22, as part of the outreach initiative, Dr. Aftab Ahmed, the Facility Coordinator, and Nathan Nous, Research Associate, met with Salve Regina University faculty and students supported by RI-INBRE. Dr. Ahmed presented a seminar entitled "Technologies Available for Biomedical Research in the State of Rhode Island through the RI-INBRE Centralized Research Core Facility." On October 7, students in Dr. Avelina Espinosa's Biotechnology class at Roger Williams University visited the Facility. Dr. Ahmed and Mr. Nous gave a talk and demonstrated some of the key instruments used in biotechnology research.

#### Workshops

On January 5-6, 2011, the Core Facility staff conducted a workshop on the use of HPLC and FPLC for protein purification. Lectures and hands-on experience were provided to students and faculty from the University of Rhode Island and Salve Regina University.

The next workshop on basic mass spectrometry (LC/MS) will be offered in July. Further details will be sent via e-mail to the RI-INBRE community.



Dr. Aftab Ahmed, RI-INBRE Centralized Research Core Facility Coordinator

#### New Equipment and Software

The SELDI-TOF ProteinChip System is being replaced with a new MALDI-TOF/TOF system with both MALDI/SELDI capabilities. The AXIMA Performance Mass Spectrometer from Shimadzu with MS and MS/MS will broaden research efforts in proteomics, SELDI biomarker discovery, oligonucleotide mass analysis, and sequencing projects. Installation and training is expected in April. Other instruments and software recently added to the Facility include: SpectraMax-M2 Microplate Reader, NanoDrop ND2000 UV/VIS Spectrometer, Thermo Multifuge Centrifuge, GraphPad Prism scientific graphing and Canvas 12 technical illustration and data visualization software.



Dr. Avelina Espinosa and students from Roger Williams University visit the Centralized Research Core Facility

## FEATURED INVESTIGATORS

### Dr. Niall Howlett, University of Rhode Island

**The Link Between a Rare Genetic Disease and Breast Cancer**  
by Sam Costello



While most people have never heard of Fanconi anemia, a genetic disease affecting 300-400 U.S. children, nearly everyone has had some exposure to breast cancer. Because of a genetic link between the diseases, breakthroughs in one could help in the diagnosis and treatment of the other.

The University of Rhode Island is hoping to drive breakthroughs, but the required capacity involves expensive infrastructure and faculty investments. RI-INBRE continues to augment university funds to attract and establish new researchers.

Niall Howlett, an assistant professor of Cell and Molecular Biology, is one such researcher. When he joined the university in 2007, RI-INBRE provided the majority of Howlett's start-up funds, enabling him to establish his lab and research.

Howlett's research focus is Fanconi anemia (FA), which results from an inability to repair damaged DNA.

"Our DNA is subject to damage all the time. Even as we're sitting here, there's damage occurring," Howlett says. Our bodies contain repair systems, but they aren't foolproof.

"The older we get, the more damage we're exposed to and the less efficient those repair mechanisms become. Eventually that damage is just going to overwhelm the system's capacity to repair it. That's when cancer starts arising," he says.

Children get the disease when they inherit two defective FA genes from their parents. While not common—it strikes about 1 in 400,000—FA patients have defective DNA repair systems, making them susceptible to birth defects, bone marrow failure before age 10, and unusually early onset cancers.

For instance, the average age for developing acute myeloid leukemia, a cancer common to FA sufferers, is 65 in the general population. For those with FA, the average age is 14.

The FA genes create proteins that work together in a cellular pathway to repair DNA damage. In FA patients, this repair pathway doesn't function properly. Howlett's research focuses on how this pathway works, and why it sometimes doesn't.

"The more we can understand how this pathway is regulated, and how it functions, the more we can come up with therapeutic ways to fix it," he says.

Since FA and breast cancer share a number of genes, fixing it for Fanconi anemia may help those at risk for hereditary breast cancer. Of the thirteen FA genes discovered so far, four are also familial breast cancer susceptibility genes. (Despite shared genes, FA patients don't have higher breast cancer rates; they often don't live to ages when breast cancer develops.)

Due to the start-up funding and RI-INBRE's other efforts to enhance the state's biomedical research environment, Howlett has generated data that has secured roughly \$2 million from NIH, the Leukemia Research Foundation, and the Department of Defense.

"In all likelihood, this would not have been possible without RI-INBRE," Howlett says.

"I previously worked at Harvard School of Public Health, the Dana Farber Cancer Institute, and the University of Michigan, where the research facilities and infrastructure are second to none ... the facilities (at URI) were one concern: am I going to have the resources to do what I need to do? INBRE and EPSCoR-funded research facilities at URI have greatly facilitated the research progress that we have made," he says.

With these resources in place, hopefully Howlett's research will continue to advance diagnostic and therapeutic approaches to both FA and hereditary breast cancer.

### Dr. Abraham Kovoov, University of Rhode Island

**Cell Communication in Drug Discovery and Development**  
by Sam Costello

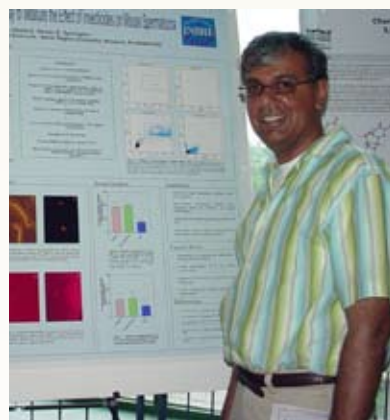
Enhancing the biomedical sciences in Rhode Island requires sufficient infrastructure, nurturing homegrown talent, and recruiting outside scientists.

Researchers need start-up funds to establish their labs and work, but colleges and universities don't always have the necessary funds. That's where RI-INBRE steps in.

RI-INBRE support brought to the University of Rhode Island Dr. Abraham Kovoov, who studies ways to reduce the side effects of medicines used to treat brain disorders.

"The URI position would not have been possible without INBRE funding," he says. "Without the INBRE funding I would not have been able to establish my research laboratory."

At URI, Kovoov studies cellular receptors. Cells communicate by secreting molecules. The molecules are collected by receptors, proteins on the outside of cells that translate communication into actions.



Dr. Abraham Kovoov

Without this communication, our bodies would not function.

"As far as multicellular organisms are concerned, there are few classes of proteins more important than these receptors," says Kovoov, whose research focuses on G protein-coupled receptors, or GPCRs.

GPCRs help coordinate the actions of the different cells that make up our bodies and enable our most fundamental processes, including thinking, seeing, and smelling.

Modern pharmaceuticals target GPCRs more than any other type of receptors, according to Kovoov, citing common drugs like Zantac, Pepcid, Claritin, and Plavix. Because of their prominent role in pharmaceuticals, Kovoov's research may aid the development of more-effective drugs that also have fewer side effects.

"Once we understand more completely how GPCRs produce signals," Kovoov says, "we can understand how the drugs function. Once we understand how the drugs function, we can come up with better drugs."

While he studies GPCRs generally since they have such broad applicability, one aspect of his research may hold promise for those suffering with schizophrenia and Parkinson's disease.

Kovoov is studying RGS9, a molecule involved in rapidly turning on and off GPCR signals in the striatum, a part of the brain that controls locomotion. Uncontrollable or spastic movements are common side effects of drugs that treat Parkinson's (Kovoov points out that Michael J. Fox's jerky movements are a side effect of his Parkinson's medication) and schizophrenia.

The neurotransmitter dopamine is a common factor in both diseases. RGS9 helps increase the rate at which dopamine signals are turned on and off in the striatum. As a result, research into RGS9 could lead to a better understanding of how some drugs function and, eventually, fewer drug-related locomotion side effects for Parkinson's and schizophrenia patients, he says.

Kovoov credits RI-INBRE, which he has participated in since 2007, for supporting his work.

"They've effectively been responsible for helping me to start up all my research here at URI," he says. "It has been the cornerstone on which my research has been built."

Having that seed capital and support is crucial, since it allowed him to begin producing research to attract outside funding. That research has produced several research articles that are at various stages of publication, and a \$350,000 grant from the National Institute of Health.

"People don't give you money based on your promise or potential alone," says Kovoov. "They give you money based on what you've done."

What Abraham Kovoov is doing not only has the potential to deepen our understanding of how the human body functions, but also lighten the burden on people with some serious diseases.

### Dr. Nicanor Austriaco, Providence College

**Peer Teaching in Cancer Research**  
by Sam Costello

Most of us view peeling skin from a sunburn as a side effect of too much time in the sun with too little protection. But to scientists, peeling skin isn't just uncomfortable. It's a mass suicide.

That's because peeling skin is the result of cells whose DNA has been irreparably damaged killing themselves en masse, a process called apoptosis, or programmed cell death.

When a cell's DNA is damaged—by exposure to harmful factors or mutation—the body attempts a repair. In some cases, the DNA can be fixed. In others, the damage is so severe that apoptosis occurs.

But sometimes apoptosis fails and damaged cells don't die. Instead, they replicate their damaged DNA. The result? Cancer.

Understanding why some damaged cells obey apoptosis while others don't is important to developing drugs to fight cancer, according to Rev. Nicanor Austriaco, a Dominican priest and assistant professor of biology at Providence College.



Dr. Nicanor Austriaco and Students

Over the years, a number of RI-INBRE-supported researchers at the University of Rhode Island and Brown University, the state's two doctoral degree granting institutions, have completed the program and graduated. Austriaco, though, is unique among RI-INBRE graduates because he works exclusively with undergraduates.

He oversees a lab of 15 undergraduates studying apoptosis in two types of yeast: one used in making bread, the other that causes infection in humans.

"Yeast is well suited for undergraduates," says Austriaco. Since his students are learning the fundamentals of research, mistakes happen. That could be a serious setback for some research projects, but since yeast is inexpensive and can be grown quickly, students "can learn and mess up and recover in a day."

Besides research, Austriaco works with undergraduates to help them develop into scientists. "Becoming a scientist is more than just bench work," he says. It's "a matter of becoming a special kind of person."

To that end, Austriaco uses a peer-mentoring system in which upperclassmen mentor younger students. When those students become juniors and seniors they help train the new class of freshmen and sophomores. This process creates "a community of people helping each other," he says.

Austriaco cites RI-INBRE, which he's been involved with for five years, as

*continued on page 6*

## FEATURED INVESTIGATORS

### *Peer Teaching in Cancer Research Continued*

a key element in his students' development.

"My students go to all the INBRE events," he says. "It's part of their training to learn how to present their findings and to debate with colleagues," adding that "it's the networking and opportunities that my students share through INBRE that I appreciate the most."

"INBRE has been crucial to the development of the lab," he says. "It was INBRE support over the last four years that allowed my lab to generate enough data to put into a [\$250,000] R15 grant proposal submitted to the National Institute of General Medical Sciences" that was awarded by NIH in late summer.

With that grant and the peer-learning system, Austriaco has leveraged the RI-INBRE program to ensure that students truly understand their subject before progressing to advanced study or the workforce since, as he says, "you don't really know if you know your stuff until you can teach it to someone."

### **Dr. Beverly Goldfield, Rhode Island College**

#### *Baby's First Language Comprehension Study* by Sam Costello

Building a modern biomedical research infrastructure requires more than core facilities and statewide programs. It also involves acquiring smaller, but no less strategic, equipment useful to many researchers.

A Rhode Island College professor and her students are using one such item, and other researchers are eyeing it for their work.

A child's first words cause great excitement for parents. They also excite researchers, since they allow them to "start using (observations of language) as a basis for theorizing about how kids actually learn to talk," says Beverly Goldfield, a developmental psychology professor at RIC.

Not all language is acquired at the same speed. In English-speaking countries, babies tend to learn nouns before verbs, Goldfield says.

"As English speakers, we want our kids to produce nouns, but so much of our language pushes kids to understand verbs: 'Throw it to mommy,' 'Give me the ball,' 'Do you want to see grandma?' We expect that they're going to understand verbs months before they're producing them," Goldfield says. "The problem is how do we test for comprehension?"

RI-INBRE funding supported the purchase of a nearly \$50,000 Tobii eye-tracking system that enables Goldfield and three undergraduates—Katie Cilento, Lauren Whittle, Renata Veiga—to test infants' language comprehension.

The eye-tracker, which looks like an HDTV, is attached to a computer and positioned in front of a high chair. To test noun comprehension, babies are

shown two pictures of objects. The objects are removed from the screen and one is named. Both objects reappear and the target object is named again. By tracking whether the baby looks longer at the correct image the second time, the team determines comprehension. The process is repeated for verbs, using videos instead of still images.

The research may help parents and pediatricians better assess whether infants are appropriately developing language.

"There are a lot of kids who don't start talking until they're two years of age. Those kids have very worried parents. However, if children are comprehending language," Goldfield says, "there's a better chance that ... their production will catch up."

The eye-tracking system has made research more efficient, according to Goldfield. In the past, such studies were performed using a video camera and manual data coding, which often required 2-3 hours to plot eye movements from just two minutes of footage.

The eye-tracker's software automatically compiles data, allowing the researchers to more efficiently test babies and, since it more precisely locates where the baby looks, get more accurate data.

Equipment of this caliber isn't common in undergraduate settings, Goldfield says. "As undergraduates at Rhode Island College, [students are] being introduced to cutting-edge technology, which is really exciting."

Goldfield's team won't be the only ones excited about using the eye-tracker. RIC Profs. Thomas Malloy and Robin Montvilo, and their students, have also been trained and are designing research that will employ the system, meaning that one small piece of equipment will serve numerous researchers and students.

Goldfield and her team are seeking babies aged 14, 16, and 18 months to participate in their study. Interested families should email [childresearchlab@ric.edu](mailto:childresearchlab@ric.edu).

## FEATURED RESEARCH FELLOW

### **Simon Sarkisian, University of Rhode Island**

#### *Using Plants to Battle Drug-Resistant Bacteria* by Sam Costello

A key mission for RI-INBRE is developing a larger population of students in Rhode Island pursuing biomedical sciences, and retaining those students at the state's higher-education institutions.

Through his research into drug-resistant bacteria, graduate student Simon Sarkisian is proving the success of those efforts.

Close to 100,000 people were infected with Methicillin-resistant Staphylococcus aureus, or MRSA, during hospital stays in 2005, according to the CDC. Nearly 20,000 deaths were related to the infection.

Patients are increasingly acquiring MRSA and other bacterial infections during hospitalizations. Though there are many causes, a crucial one is that these bacteria, after long being treated with antibiotics, have developed drug resistance, making them much tougher to fight.

Sarkisian, now a Master's student in Pharmaceutical Sciences at the University of Rhode Island, has spent the past two years, including two summers in RI-INBRE's Summer Undergraduate Research Fellowship (SURF) Program, researching methods of treating drug-resistant bacteria using chemicals derived from plants.



Simon Sarkisian

When bacteria develop drug resistance, they often produce a biofilm that protects them from antibiotics. To bypass that resistance, Sarkisian and his professors are investigating the antimicrobial properties of a subspecies of Hypericum, a plant from the same family as St. John's Wort, which may be useful in attacking infections.

Sarkisian and his professors, Dr. Kerry LaPlante and Dr. David Rowley, hypothesize that using Hypericum-derived chemicals to prevent biofilm formation can make bacteria vulnerable to traditional antibiotics.

Given that these infections are most common, and most difficult, to treat in hospitals, it's fitting that Sarkisian conducts his research at Providence's VA Medical Center, under the supervision of Dr. LaPlante. That real-world setting allows Sarkisian to work with bacteria that come from patients.

Though he doesn't have direct patient contact, Sarkisian says "it's pretty significant to work on finding treatments for the diseases that are the most common in a hospital setting."

To test the effectiveness of the plant chemicals, Sarkisian grows bacteria in Petri dishes, and then introduces them to a nutrient-rich broth that, to simulate the human body, contains many of the sugars and ions present in human tissues and blood. Once there, he treats the bacteria with the plant-based chemicals from the Rowley lab at the University of Rhode Island.

While therapies to treat drug-resistant bacteria are limited, Sarkisian hopes that his work leads to "drugs that have some significance and go to clinical trials" in coming years.

Sarkisian exemplifies RI-INBRE's pipeline-development efforts: Besides his two summers in the SURF program, he earned a Bachelor of Science in Biology at Providence College and credits RI-INBRE with influencing him to stay in Rhode Island for graduate school.

"The INBRE program definitely helped pique my interest in research. Since I worked so closely with the professors here, and I was accustomed to working in the labs here ... I saw (URI) as a perfect fit."

As a native Rhode Islander, Sarkisian hopes to see RI-INBRE continue to support student researchers in developing Rhode Island's biomedical research strengths.

"Hopefully (RI-INBRE) allows native Rhode islanders to stay in Rhode Island and keep doing their research in the state. Whatever discoveries or contributions to science that they make, Rhode Island also benefits," he says.

After he finishes his MS at the University of Rhode Island next summer, Sarkisian will start medical school at Touro University in California.

## NEWS & EVENTS continued

### *In Memoriam*

We are sad to report that Dr. George Fuller, former Chair of the EAC and former Dean of the Wayne State College of Pharmacy and Allied Health Sciences, passed away on September 23, 2010. He was an enthusiastic supporter of our program and had strong ties with the University of Rhode Island, where he was formerly a Professor of Pharmacology and Toxicology. Dr. Fuller stepped down as chair of our External Advisory Committee in January 2010 after serving for more than eight years. We will miss him immensely and offer our sympathies to his family.



### **External Advisory Committee Chair**



Dr. Steven Cohen,  
Chair, External  
Advisory Committee

As of January 2010, Dr. Steven Cohen has been named as the new Chair of the External Advisory Committee. Steve is the Chair of the Department of Pharmaceutical Sciences at the Massachusetts College of Pharmacy and Allied Health Sciences-Worcester/Manchester and is also a charter member of the External Advisory Committee. He has played an active role in shaping the RI-INBRE Program since its inception and we thank him for graciously taking on this new responsibility.

### **Third Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE)**

The NISBRE was held on June 16-18, 2010 at the Marriott Bethesda North Hotel & Conference Center in Bethesda, MD. The RI-INBRE investigators and students were well-represented at this event. In all, 47 RI-INBRE faculty and students attended NISBRE and presented 33 posters.



Rhode Island College students  
from the Montvilo Laboratory at  
NISBRE, Bethesda, MD

### **Important Dates & Announcements**

**2/4/11** – RI-INBRE Winter Retreat, Salve Regina University, Newport, RI

**3/1/11** – SURF Program Application Deadline

**7/29/11** – RI SURF Conference & Faculty Retreat

**8/10/11 - 8/12/11** – Northeast Regional IDeA Meeting, Salve Regina University, Newport, RI

**Upcoming seminars have been posted at [www.uru.edu/inbre/](http://www.uru.edu/inbre/)**

**Join us on facebook at [RI Inbre Research Fellows](http://RI Inbre Research Fellows)**

## AWARDS and RECOGNITIONS

### Total Extramural Grant Awards (2001 – 2010)

Our investigators have received 13 R01, 2 R21, 2 RO3, 2 R15, and 2 K awards from NIH. An additional 28 awards were received from NSF and other external funding agencies. The total extramural funding received by the RI-INBRE investigators is more than \$21 million thus far.

#### University of Rhode Island

**Dr. Niall Howlett** was awarded an R21 grant (\$335,250) from the National Heart, Lung, and Blood Institute, NIH in April. This multi-year award is entitled "Searching for a New Fanconi Anemia-BRCA Pathway Gene on Chromosome 11P". Recently, he also received a multi-year New Investigator Award (\$533,494) entitled "De Novo Chromosome Copy Number Variation in Fanconi Anemia-Associated Hematopoietic Defects" from the Bone Marrow Failure Research Program at the Department of Defense.

**Dr. Abraham Kovoov** received an R15 grant award (\$367,585) from the National Institute of Mental Health, NIH. This multi-year award is entitled "Development of a Novel Animal Model of Tardive Dyskinesia".

#### Providence College

**Dr. Nicanor Austriaco** was awarded an R15 grant from the National Institute of General Medicine, NIH. His multi-year award is entitled "Genetic Identification of Sulforaphane's Mechanism of Action in Yeast Cell Death". This grant is the first of its kind awarded to an RI-INBRE supported investigator at one of the primarily undergraduate institutions in the Network. Additionally, Dr. Austriaco, and **Drs. Charles Toth** and **Joseph DeGiorgis**, were awarded a Major Research Instrumentation grant by the NSF's Division of Biological Infrastructure. This grant was for the acquisition of a laser scanning confocal microscope for research and training in biology.

#### Rhode Island College

**Dr. Rebeka Merson** was granted tenure and promoted to Associate Professor of Biology. Honors received by Dr. Merson's RI-INBRE Undergraduate Research Fellows included the Christina Carlson Prize for

Excellence in Biology to **Liam Burke**, and several scholarships for study abroad in Australia to **Daniel Reeves**.

**Dr. Robin Montvilo** was awarded a one-year grant (\$32,500) entitled "HIV Prevention Support, Addiction and Recovery Strategic Planning" by the Rhode Island Department of Health.

#### Roger Williams University

**Dr. David Taylor** received a Faculty Merit Review Committee Award and a Foundation Fund Based Research Grant from Roger Williams University. Dr. Taylor and **Nichole Ares** presented a Highlighted Poster at NISBRE. In addition, **Carissa Gervasi** was honored by the Southern New England Chapter of the American Fisheries Society for Best Student Paper and also won the Best Student Poster Award at the 4th Biology New England South Meeting. RI-INBRE Undergraduate Research Fellows Nichole, Carissa, and **Jennifer Linehan** were also awarded the Provost's Fund for Undergraduate Research at Roger Williams University.

**Dr. Marcia Marston** received a multi-year grant from NSF's Division of Ocean Sciences to advance her RI-INBRE research project. This was a collaborative research grant with Dr. Jennifer Martiny of the University of California – Irvine and was entitled "Evolutionary Ecology of Marine Cyanophages".

#### Salve Regina University

Two of **Dr. Bernard Munge's** RI-INBRE Undergraduate Research Fellows recently received recognition for their research efforts. **Richard Dowd** earned a Poster Award for Significant Research Contribution at the 4th Biology New England South Meeting at Roger Williams University, and **Michael Sullivan** was given a Student Travel Award and a Young Investigator Award from NISBRE.

In **Dr. Steven Symington's** laboratory, three RI-INBRE Undergraduate Research Fellows earned awards. **Mandy Letourneau** was recognized as the Undergraduate Poster Competition Winner at the 4th Biology New England South Meeting; **Priscilla Perez** received the Glenna Kohl Scholarship Award from Salve Regina University; and **Edwin Mutanguha** took the Best Poster Award at the Annual Meeting of the Northeast Society of Toxicology held at the University of Connecticut, Storrs, CT. Edwin was also the first undergraduate to ever win this award at this meeting.



Rhode Island INBRE, Center for Molecular Toxicology, College of Pharmacy  
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