**PLEASE DO NOT PRINT THIS!**

# CONGRATULATIONS TO OUR SU BIOLOGY AND CHEMISTRY STUDENTS!

**Left to right: Christopher Simms, Dr. Bo Luttrell, Patrick Riley, Katherine Pflaum, Ryan Protzko, Jesse Bowden and Dr. Les Erickson.**

**12th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences**
SU students each won 2nd place in their respective poster sections at the 12th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences held October 10, 2009 at the University of Maryland Baltimore County. Students from all over the United States, including Cal Tech, Harvard, and Johns Hopkins, were judged on how well they presented their research findings. Dr. Peter Agre, who won the Nobel Prize in Chemistry in 2003, was the keynote speaker. SU research advisors were chemistry professor Dr. Bo Luttrell and biology professors Dr. Les Erickson and Dr. Elizabeth Emmert (not pictured).

## ANNOUNCEMENTS AND AWARDS

**Dr. Mark Holland** and **Dr. Eugene Williams** have been elected President and Vice President of Affiliate Affairs for the Washington Academy of Sciences.

**Dr. Ellen Lawler** recently won the G. B. Heron Jeweler's 4th Annual postcard competition with the watercolor painting of a great blue heron.

**Featured Biology Faculty**
Each Newsletter we will be writing a feature article on one of the Biology Faculty members. These articles will provide information about their research, current publications, extracurricular activities at SU and more. Please take the time to learn more about the SU Biology Department. Additional information can be obtained from the Department of Biological Sciences Web site (http://www.salisbury.edu/biology/faculdir.html).

**24th National Conference on Undergraduate Research (NCUR)**
Call for Abstracts – October 12 – December 4, 2009
This years conference will be held at the University of Montana (Missoula, Montana).
The National Conferences on Undergraduate Research (NCUR), established in 1987, is dedicated to promoting undergraduate research, scholarship, and creative activity in all fields of study by sponsoring an annual conference for students. This gathering of young scholars welcomes presenters from all institutions of higher learning and from all corners of the academic curriculum. Through this annual conference, NCUR provides models of exemplary research and scholarship, and helps to improve the state of undergraduate education. Now in existence for over twenty years, the conference regularly hosts 2,000 students and their faculty mentors to present their research through posters, oral presentations, visual arts and performances. Visit the conference Web site for more information (www.umt.edu/ncur2010).

**Phi Kappa Phi Fellowships**
Every year, the honor society of Phi Kappa Phi awards 57 fellowships of $5,000 each and three at $15,000 each to members entering the first year of graduate or professional study. Each Phi Kappa Phi chapter may select one candidate from among its local applicants to compete for the society-wide awards. All Phi Kappa Phi members with current dues paid are eligible to apply. The deadline to apply to the SU chapter is February 3, 2010. Application forms and much more can be found at http://www.phikappaphi.org/Web/Awards/Fellowship.html. For more information contact Dr. E. Eugene Williams, SU PKP president, at eewilliams@salsibury.edu or 410-548-2062.

**Student Research Call for Submissions**
The ninth annual SU Student Research Conference (SUSRC) is 1-7:30 p.m. Friday, April 23, 2010. Students from all four of SU's academic schools are invited to submit their original work for consideration for presentations and poster sessions. The SUSRC celebrates student scholarship, artistic merit and professional achievement. Presentations are organized into themed sessions ranging from molecular biology to music composition, from education to economics. This year there is a new submission process involving three required steps. First, students must submit their intent by March 12. Second, the student's faculty mentor must approve the student's work. And third, students must submit final abstracts and faculty mentor nominations by midnight Thursday, April 1. The conference is free and the public is invited. For more information visit http://www.salisbury.edu/susrc.

**SU's Biology Department has started a Relay For Life team.**
Our team will camp out overnight and take turns walking around the track to raise money and awareness to help the American Cancer Society save more lives from cancer. By joining our team, you will be a part of a life-changing event that gives everyone in the community a chance to celebrate the lives of people who have battled cancer, remember loved ones lost, and fight back against a disease that takes too much. The invitation is open to faculty, students, family members, friends, and alumni. Please go to the following site to learn more about Relay for Life.
http://main.acsevents.org/site/TR?pg=team&fr_id=24366&team_id=577584

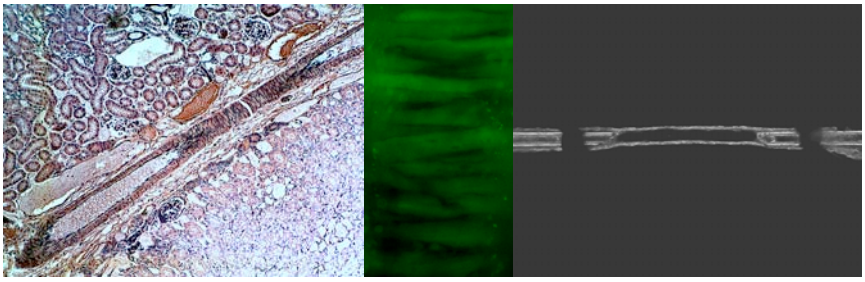
**The Fall 2009 Biology Seminar Series is posted:**
http://faculty.salisbury.edu/~rlgutberlet/biology_seminars.html

## OPPORTUNITIES

**Boston University - Summer Undergraduate Research Fellowships (SURF)**
**E**-mail: urop@bu.edu; Web Site: http://www.bu.edu/urop/
Program URL: http://www.bu.edu/urop/surf/about/
The sponsor provides ten to twenty $4,500 awards for a ten-week research experience that supports undergraduate students for the summer. Fellowships are offered to promote access to graduate education to talented undergraduate students, especially among underrepresented minorities.
Deadline: 02/05/2010. Link to full program description:
http://www.infoed.org/new_spin/spin_prog.asp?75088

**Harvard Medical School - Summer Honors Undergraduate Research Program (SHURP)**
E-mail: SHURP@hms.harvard.edu
Web Site: http://www.hms.harvard.edu/dms/diversity/shurpintro.html
Program URL: http://www.hms.harvard.edu/dms/diversity/documents/2010_app_form.pdf
The sponsor provides a ten-week summer research program primarily for college students belonging to minority groups that are under-represented in the sciences. The Program is offered for currently enrolled undergraduates who are considering careers in biological or biomedical research sciences.
Deadline: February 1, 2010. Link to full program description:
**http://www.infoed.org/new_spin/spin_prog.asp?75690**

# FEATURED FACULTY – DR. VICTOR MIRIEL



My research interests have been focused on vascular physiology and the cell biology of vascular smooth muscle cells and endothelial cells. My current research interests include:
1) mechanotransduction in vascular smooth muscle cells 2) vascular cell responses to oxidative stress
3) Cell-to-cell communication in the vascular wall 4) Gene delivery to vascular cells

***Examples of the technical approaches used in my research include:***
**1)** Fluorescence microscopy and image analysis of intracellular calcium, nitric oxide production, gene expression, and protein colocalization. **2)** Intravital microsopy for the study of the intact microcirculation *in vivo*. **3)** *In vitro* models of vascular function include the classical techniques of measuring isometric force production, or measuring the diameter of cannulated arterioles less than 200 microns in diameter. The latter model is particularly useful because it allows the measurement of vasomotor responses to changes in intravascular pressure, flow, and pharmacological agents. **4)** Cell culture and transfection of vascular cells as well as various cell lines used for the production of viral vectors. **5)** Recombinant DNA techniques for the production of Adenovirus and Adeno Associated Virus (AAV). An emphasis over the last several years has been to develop more efficient gene delivery techniques to alter the physiology and pathophysiology of the vascular wall.

***Future Research:*** My future plans include continuing to study vascular function and dysfunction in genetically altered animal models of human disease.

***Recent Publications:***
Thengchaisri N, **Miriel VA**, Rivers RJ. 2009. Multiple receptor subtypes and multiple mechanisms of dilation are involved in vascular network dilation caused by adenosine. Microvasc Res. 77(3): 356-63.

**Miriel VA**, Chen Y, Rivers RJ. Microvasc Res. 2009. The involvement of CGRP, adrenomedullin, and sensory nerves in remote vasomotor responses within the hamster cheek pouch microcirculation. Microvasc Res. 77(2): 192-7.

Lim HK, Lim HK, Ryoo S, Benjo A, Shuleri K, **Miriel V**, Baraban E, Camara A, Soucy K, Nyhan D, Shoukas A, Berkowitz DE. 2007. Mitochondrial arginase II constrains endothelial NOS-3 activity. Am J Physiol Heart Circ Physiol. 293(6): H3317-24.

Santhanam L, Lim HK, Lim HK, **Miriel V**, Brown T, Patel M, Balanson S, Ryoo S, Anderson M, Irani K, Khanday F, Di Costanzo L, Nyhan D, Hare JM, Christianson DW, Rivers R, Shoukas A, Berkowitz DE. 2007. Inducible NO synthase dependent S-nitrosylation and activation of arginase1 contribute to age related endothelial dysfunction. Circ Res. 101(7): 692-702.

# SWEET SORGHUM FOR ETHANOL

This Fall, a very successful field tour attended by Maryland Delegates Addie Eckardt, Jim Mathias, Rudy Cane, and Norm Conway (not pictured), SU Biology Professors Sam Geleta and Chris Briand (pictured below), and Karen Olmstead the SU Dean of the Henson School of Science and Technology, was held at the farm of local physician Jeff Benner, a partner in the sweet sorghum for ethanol project.

**Left:** Research students Hoa Nguyen, Kay Pennerman, and Brian Knepper.

**Right:** Dr. Chris Briand discussing the benefits of *Sorghum bicolor* L. as a potential crop for bioenergy.


Drs. Geleta and Briand along with their research students Kristen King, Brian Knepper, Hoa Nguyen, Kay Pennerman, and Steven Weschler completed their first year of field trials of sweet sorghum (*Sorghum bicolor* L.) as a potential crop for bioenergy production in the Delmarva Peninsula of Maryland and the greater Chesapeake Bay Watershed. The work was funded by the Grain Producers and Utilization Board of Maryland. Sweet sorghum concentrates sucrose in its stalk like sugar cane, is a drought tolerant species, requiring less than half of the water needed for corn. Sweet sorghum can grow well on marginal, non-irrigated land as far north as southern Canada. It has been dubbed by the Food and Agriculture Organization (FAO) as the "camel among crops" due to its resistance to drought. Its nutrient input cost is less than half of that required for corn and it has a short crop cycle. Growing sweet sorghum for ethanol has a direct advantage in that it eliminates the "food versus fuel" conflict since its production is mainly for biomass as a feedstock for ethanol and also produces feed grain. Sweet sorghum has been grown for syrup production in the US for many years. Until recently, it has been largely overlooked as a source of renewable energy in the US. Recently, however, universities in Oklahoma and Texas have begun experimenting with sweet sorghum as a source of biofuel. Countries such as India and China have extensive research programs to develop sweet sorghum as an ethanol crop.

**SU Biologists are Incorporating Molecular Genetics into a Conservation Expedition to Indonesia**
This summer Drs. Kim and Richard Hunter and Shelby Smith from the SU Biology Department went to Southeast Sulawesi, Indonesia. The goal of the trip was to start a field DNA lab at Hoga Island Marine Research Station in the Wakatobi National Park. The non-profit group Operation Wallacea leads conservation expeditions to regions of high biodiversity. Unfortunately, these regions are under pressure of human use and many species are threatened. Operation Wallacea monitors and records species diversity to document the health of the ecosystem and to change human use policies and practices in remote locales. The expeditions are coordinated by conservation biologists, but are funded by volunteer scientists to prevent the loss of rare habitats. The application of modern molecular genetics to conservation field biology offers nondestructive methods to evaluate genetic diversity of potentially rare species.

It took four days to reach the research station at Hoga Island: airplane to Jakarta, airplane to Sulawesi, speed boat to Bau Bau, overnight "slave boat" to Hoga. This very remote island offered an excellent experience for conservation. The organisms seen below include: 1) blue button jellyfish (*Porpita porpita*), 2) a monitor lizard (*Varanus* sp.), and 3) a hard coral (*Goniastrea aspera*). This was an amazing opportunity for SU faculty and an undergraduate student.

## MEETINGS AND PRESENTATIONS

Judith Stribling will be traveling with students Michele Thiess, Michelle Meininger, Laura Hundy, and Lauren Brenneman to the Maritime Institute, North Linthicum, MD on December 3 for the 15th Annual Water Monitoring Conference: Water Quality Success Stories: it Ain't All Doom and Gloom. Michele and Michelle will be presenting a poster on the Wicomico Creekwatcher Program.

Dr. Gutberlet presented a seminar to the Tri-County Bird Club on 26 October 2009
"Maryland Big Year 2009: All the Birds We Could Find"

## PUBLICATION/ARTICLES/ABSTRACTS
## (*Undergraduate, **Masters Student)

****Jadin, R.C., R.L. Gutberlet, Jr., and E.N. Smith.** In press. Phylogeny, evolutionary morphology, and hemipenis descriptions of the Middle American jumping pitvipers (Serpentes: Crotalinae: Atropoides). Journal of Zoological Systematics and Evolutionary Research.

## OPEN HIVE DEMONSTRATION

Dr. Price's Entomology (Biology 316) class took a field trip to Pemberton Park to meet Dean Burroughs, the past president of the Maryland Beekeepers Association and SU faculty emeritus of the Physical Education Department. Burroughs provided information regarding the keeping of bees and their importance as pollinators.

## ALUMNI NEWS

Erin Baldwin (2002 graduate) was accepted to Harvard's Graduate School of Education and began this fall in the Mind, Brain and Education Masters Program.

Amanda (Wilson) Ely (BS Biology and Chemistry) recently received her MD degree from Penn State and had a baby! She will be pursuing a specialization in ophthalmology.

Kimberly Jones (2007 graduate) recently graduated from The George Washington University with a Masters of Forensic Science. She is currently working at the Armed Forced DNA Identification Laboratory (AFDIL) in Rockville, MD.

Carrie Mokar (BS Biology '09) has taken a position as a research technician in a neurobiology laboratory at Johns Hopkins.

Christopher Overbaugh (2004 graduate) has obtained a permanent, year-round job as a Lead Biological Science Technician (7/9 grade level) in the Resource Management Division of Yellowstone. It is a diverse position encompassing vegetation and wildlife management that Chris describes as a "dream job".

Chris Snow (1996 graduate) is the new Chesapeake Bay Stewardship Coordinator in Maryland's Department of Natural Resources.

Jon Sobus (Environmental Health Science 2002 graduate) received his Ph.D. last year from University of North Carolina at Chapel Hill. Jon worked with the EPA while pursuing his degree and has been employed with that agency since graduation. Jon was an undergraduate researcher at SU and presented his research in environmental radioactivity at SU's undergraduate research conference. Jon has agreed to participate in our seminar series next spring 2010.

**If you have announcements to add or general comments regarding the Newsletter, please contact Dr. Dana Price: dlprice@salisbury.edu**
**Your opinion matters!**