



The Richard A. Henson School of Science and Technology

COMMUNICATOR

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Richard A. Henson

From the Dean:

In thinking back on this past academic year, I am humbled by the magnitude of dynamic events that the faculty, staff and students of the Henson School have inspired, participated in and experienced, and I thank everyone for a wonderful year. This newsletter only has the capacity to highlight for you a taste of the many academic and personal challenges and accomplishments seen in this past year within the school. From a year-long intense debate on the pros and cons of a course-based curriculum, to faculty pulling together to cover the courses of an unusually high number of colleagues who were sick or otherwise unable to teach, academic year 2005-2006 was a year that, I think, brought us all closer together.

These times continue to be exciting and challenging for the Henson School. We have grown to 107 full-time faculty, 16 staff, over 1,300 majors, and we are now offering 11 undergraduate degrees, three graduate degrees, and a post-baccalaureate certificate program in middle school mathematics. The administration of one of those three graduate programs is somewhat new to the Henson School. The operation of the Applied Health Physiology (AHP) Program, which is a collaborative program with the Seidel School, became the responsibility of the Henson School, and in particular, the Health Sciences Department, starting in fall 2005 (the Seidel School administered the program for its first five years). Dr. Sid Schneider was appointed as the director of this program, which prepares leaders with the skills necessary to promote health/fitness in a variety of clinical settings. This applied graduate program continues to attract students and is thriving.



HENSON SCHOOL DEAN
Dr. Tom Jones

A hallmark of our School has and continues to be our faculty's research and their efforts to involve undergraduate students in their research. This summer will be the second year of the Guerrieri Undergraduate Research Summer Program. With money from the Guerrieri Endowment, undergraduate student researchers experience state-of-the-art research working with faculty mentors over the summer. Students are paid a competitive stipend, and additional money is available for them to pay for their research supplies. Following all of the research by our faculty and students, they work up their data for presentation at campus symposiums, such as the annual SU Undergraduate Student Research Conference, regional and national presentations at such venues as the National Conference for Undergraduate Research (NCUR) or individual discipline science meetings around the country. And of course the ultimate for their work is in getting it published in refereed scientific journals. Bottom line, Henson faculty and students are conducting meaningful scientific research and transmitting their findings to the world.

As I conclude my introduction to this volume of the *Henson Communicator*, I do so as I started out, with a sense of humbleness and a personal "thank you" to all members of the Henson School. My nine years as dean of the Henson School will be fondly remembered by me for the rest of my life. It's been an honor and a pleasure to have served in this position and to be associated with the School's outstanding faculty, staff and students. As I assume the duties of interim provost, I wish Interim Dean Folkoff the best.

Summer PascGalois Undergraduate Research Retreat



From left, Brian Guarraci, SU alumnus; Michael Bardzell, SU faculty; Tyler Evans, Humbolt State University faculty; and Jonathon Miller, SU senior.

Mathematics professors, Drs. Kathleen Shannon and Michael Bardzell, along with New College faculty member Dr. Eirini Pomenidou, conducted the Summer PascGalois Undergraduate Research Retreat held at New College of Florida, July 6-10, 2005. Aaron Churchill (B.S. mathematics, S06) and Jonathon Miller (B.S. mathematics, S06) participated and two SU alumni, Nicole Miller (B.S. mathematics, S01) and Brian Guarraci (B.S. mathematics with a concentration in computer science, S00) assisted in the delivery. Aaron and Jonathon are mathematics majors with special interests in abstract mathematics. Both plan on beginning Ph.D. programs in mathematics—Jonathon at College Park and Aaron at the University of Delaware in fall 2006.



PascGalois participants investigating mathematical questions.



PascGalois students at the New College of Florida campus.



From left, Brian Guarraci, SU alumnus; Aaron Churchill, SU senior; Jonathon Miller, SU senior; Julian Trezise, Binghamton University-NY; and Nathan Cochran, New College of Florida.

The PascGalois Project uses a model created by Pascal modified with mathematics developed by Galois that allows the visualization of abstract mathematical concepts. Different mathematical operations are used to create patterns in fractal-like pictures, demonstrating various relationships. Undergraduate students from a variety of academic back-

grounds (mathematics, statistics, computer science, secondary education) have completed research projects. Commenting on his experience at the retreat, Jonathon stated: "I feel as if I assisted other people to learn the material and in addition, I had a blast!" Both Aaron and Jonathon will attend the retreat in summer 2006 as teaching assistants.

Henson Students Accepted to Graduate Programs for Fall 2006

Name	Major	Grad Date	Program
Arrington, Daniel	BIOL	12/05	Ross University School of Vet Medicine
Berry, Melissa	GEOG	5/06	University of South Carolina
Choudhary, Amna	BIOL	5/06	Howard University Dental School
Churchill, Aaron	MATH	5/06	University of Delaware
Dix, Andrew	CHEM	5/06	University of California San Diego
Elcik, Stacy	BIOL	5/06	University Medicine/Dentistry New Jersey College of Osteopathic Medicine
Era, Amanda	NURS	5/03	University of MD Nurse Practioner Program
Green, Megan	BIOL	5/06	Towson University MS Environmental Biology
Griebel, Jessica	BIOL	5/06	Coastal Carolina University Coastal Marine/Wetland Studies Program
Kratenstein, Robyn	BIOL/ELED	12/05	Lake Erie College Osteopathic Medicine Bradenton, FL
Larson, Jennifer	MATH	5/06	University of South Carolina
Martini, Kristy	MATH	5/06	Stevens Institute of Technology
McArdle, Suzanne	GEOG	5/06	East Carolina University
Melocik, Christina	MATH	5/06	Georgetown University (MS)
Merkel, Laura	PSYC/BIOL minor	5/06	University of Maryland School of Medicine
Miller, Irene	BIOL	5/06	Auburn University PhD program/Biology
Jonathon Miller	MATH	5/06	University of Maryland, College Park
Parker, Shea Ellis	NURS	5/03	Georgetown University Nurse Anesthesia Program
Rodig, Michael	CHEM	12/05	University of Florida Gainesville PhD program
Sacchetti, Lauren	MDTC	5/06	University of Maryland Pathology Assistant Program
Sewell, Justin	BIOL	5/06	Johns Hopkins University MBA/MS Biotechnology
Shaw, Sanket	BIOL	5/06	Hope Medical Institute Lublin, Poland
Shoemaker, Ivan	BIOL	5/06	Auburn University PhD program/Biology
Sillers, Dana	GEOG	5/06	Clark University
Slagle, Karen	BIOL	5/06	Massachusetts College of Pharmacy
Stansbury, Erin	BIOL	5/06	UMES Doctor of Physical Therapy
Taylor, Michael	CHEM	5/06	University of Delaware
Teffeau, Andrew	BIOL	5/05	Philadelphia College Osteopathic Medicine Georgia Campus
Thomas, Adam	GEOG	5/06	Mississippi State University
Valdivia, Aaron	MATH	5/06	Florida State University
Vernon, Jessica	BIOL/SPAN	12/05	University of Texas San Antonio School of Medicine
Ward, Michael	BIOL	5/06	North Carolina State University PhD program/ Entomology
Wiley, Mike	BIOL	5/06	Virginia Tech University PhD/ Biochemistry
Wirth, Jessica	BIOL	5/06	West Virginia College Osteopathic Medicine

Geography Announces Retirement of Two Professors

The faculty and staff of the Department of Geography and Geosciences are saddened by the retirement of Drs. Calvin Thomas and J. Chapman McGrew Jr., who have taught a combined total of 66 years.

Dr. Thomas joined the Department of Geography at Salisbury State College in fall 1971. He received his B.S. from Indiana University of Pennsylvania and his



Dr. Calvin Thomas

M.S. and Ph.D. from the University of Tennessee. During his tenure, Dr. Thomas served on more than 30 University committees and 12 School of Science committees. He has been a member of numerous professional associations, including the

board of directors of the Pennsylvania Geographical Society, and was named associate chair for the annual meeting of the Middle Atlantic Division of the Association of American Geographers.

Dr. Thomas has a special rapport with the geography alumni and was instrumental in establishing the department's SU Foundation account, enabling alumni to dedicate their donations solely to the Geography Department. In addition to his many accomplishments, his 17-year run, from 1985-2002, as department chair is most notable. Dr. Thomas will be retiring June 30, 2006.

Dr. McGrew joined the department in fall 1975. He received his B.A. from San Diego State University and his M.S. and Ph.D. from the Pennsylvania State University. Dr. McGrew moved up the ranks and was promoted to professor in 1995. In 1993, Dr. McGrew became a published author of his remarkably successful text and accompanying workbook, *An Introduction to Statistical Problem Solving in Geography*. The text has become the book of choice for those teaching geographic quantitative methods courses. Dr. McGrew has had a very diverse and complicated faculty teaching load, due in large measure to his own feelings of responsibility to the students and the



Dr. J. Chapman McGrew Jr.

geography program. He was the faculty sponsor for the International Geographical Honor Society-Gamma Theta Upsilon and served on many committees. Being a member of the Henson Scholarship Board and Henson Seminar Committee was especially important to him. Dr. McGrew will be retiring upon completion of the spring 2006 semester.

The department wishes Dr. McGrew, and his wife Kathy, and Dr. Thomas, and his wife Darla, happy and prosperous retirements and heartfelt thanks and gratitude for their years of service and devotion to the Department of Geography and Geosciences.



Students, faculty and staff give their best wishes to Dr. McGrew and Dr. Thomas at their retirement reception in May 2006.

ESRGC Aids in Land Management and Improvement

The Eastern Shore Regional GIS Cooperative allows the local governments of Caroline, Dorchester, Somerset, Talbot, Wicomico and Worcester counties to collaborate to acquire GIS capabilities. The GIS Cooperative, housed at Salisbury University, provides data and support services to local governments and municipalities on the Middle and Lower Eastern Shore of Maryland. The services include: mapping, spatial data creations, spatial data collection, spatial data analysis and other tasks that support the use and acceptance of GIS technologies by local governments.

During its second year of operation, the ESRGC has completed a

range of projects aimed at supporting local governments and increasing the general mapping capabilities of the region. In particular, an ongoing effort in Denton, MD, has provided the town with a digital parcel, water and sewer layers which will aid the town in its growth planning. Additionally, a traffic impact analysis for the town is being completed using micro-simulation technology, a method that models the predicted behavior of individual vehicles and thus has the potential of creating realistic traffic scenarios.

Other projects this year include: a pilot study for Wicomico County Planning and Zoning in which a digital parcel layer was created for a portion of Salisbury; a flood

vulnerability analysis for the Maryland Department of the Environment; and a partnership with Towson University to provide GIS services to the Maryland Coastal Bays Program. The ESRGC has provided internship services to Wicomico County Planning, Zoning and Community Development, the towns of Ocean City and Denton, the Caroline County Planning and Codes, and the Caroline County Office of Emergency Management.

The ESRGC has aided the University community and private citizens with property location, public land mapping, technical support and spatial analysis questions.

Williams Earns Regents Award

Dr. E. Eugene Williams, of the Biological Sciences Department, recently earned the Regents Award for Excellence in Mentoring. The Regents Awards are the highest faculty honors given by the University System of Maryland.

An associate professor of biology, Williams has not only taught his students, but worked with them one-on-one to produce some of the boldest scientific experimentation ever practiced at SU. In 2005, he and his students partnered with Old Dominion University for SU's first rocket launch at NASA's Wallops Island Flight Facility, testing the metastasizing of cancer cells in zero gravity to advance studies in finding a cure for the disease.

He also recently earned a \$25,000 National Science Foundation grant to study lipid metabolism changes in fish in extreme temperatures, in association with the University of California, Santa Barbara—another experiment

that may help remediate cancer.

In the past two decades, he has published 19 articles and numerous abstracts, and is a highly sought-after speaker for seminars at campuses such as Penn State, Florida Atlantic and Western Michigan universities. However, his main focus is on his students.

"The number of experiments that are carried out each semester in his lab attests to the freedom and encouragement that Dr. Williams gives to our undergraduates," said President Janet Dudley-Eshbach. "... He believes deeply that students not only learn but mature as they apply classroom knowledge and personal curiosity in the research lab."

"This University, and in particular, the Henson School of Science and Technology, prides itself on the education of its students through engaging them in research activities, and no one has done this more or better than Dr. Williams," said Dr. Tom Jones,



Dr. E. Eugene Williams

dean of the Henson School. "... Dr. Williams has rapidly become the most sought-after research advisor in our school."

In addition to his work with biology students, Williams also advises the SU Sailing Club, offering students from many different academic paths a lesson in what he says is the ultimate educational tool: dedication.

Papish and Students Share Research

Dr. Elizabeth Papish and her research students have had a very productive year. They have been trying to design transition metal catalysts to break down phosphotriester pesticides. Phosphotriesters are found in agricultural pesticides and are structurally similar to organophosphorus chemical warfare agents. These compounds are highly toxic and do not decompose on their own, but bacterial enzymes have been shown to react with both pesticides and nerve agents. The Papish group aims to take what is known about the enzyme structure and design a small molecule through organic and inorganic synthesis that hopefully looks and functions like the enzyme. Besides the obvious benefits if the catalyst renders toxic compounds harmless, the research may also lead to a better understanding of how the enzyme works.

After an involved three-step synthesis, they had made an organic molecule called tris(isopropylpyrazolyl) methane sulfonate that was water-soluble and able to bind to metals in a manner similar to the enzyme. Like the enzyme, this molecule binds to zinc, copper, nickel, cobalt, iron and



Dr. Elizabeth Papish's research group 2005, from left, Papish, Robert S. Shawhan, Michael T. Taylor and Finith E. Jernigan III.

manganese as shown by crystal structures determined at the University of Delaware. The complexes proved to be good models for the structure the enzyme, but efforts are currently underway to make bulkier organic molecules that can bind to metals and actually break down pesticides.

The results of their research have been discussed at the Intercollegiate Student Chemists Convention (where Michael Taylor won first place for his presentation), UMBC's Undergraduate Research Symposium, an NSF sponsored Inorganic Chemistry Workshop

and two national American Chemical Society (ACS) meetings. The group's full paper recently appeared in the journal *Inorganic Chemistry*. The student coauthors were Taylor, Finith Jernigan, Michael Rodig and Robert Shawhan. All students did research for credit and the first two authors worked over the summer through the Guerrieri Program. This research was made possible by support from the Henson School and \$35,000 from the ACS's Petroleum Research Fund.

Salisbury
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