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Chemical Bond Newsletter

Armstrong College of Science & Technology

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Fall 2004

## The ArmStrong Chemical Bond

Armstrong Atlantic State University

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# The ArmStrong Chemical Bond

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## The Link Between Faculty, Alumni and Friends of the Pirate Chemist

### The AASU Chemistry Newsletter

Friends,

Welcome to the first edition of the new Armstrong Atlantic State University Chemistry Newsletter!

As the number of alumni and friends have grown tremendously over the years, now is the time to communicate formally and on a regular basis with each of you! This newsletter will provide information that will keep you abreast of the great things happening in our department, as well as help you reconnect with old friends. We will strive to provide a newsletter in hardcopy, via email and on

our department website at least twice a year. Dr. Delana Nivens ([nivensde@mail.armstrong.edu](mailto:nivensde@mail.armstrong.edu)) and Dr. Will Lynch ([lynchwil@mail.armstrong.edu](mailto:lynchwil@mail.armstrong.edu)) have agreed to serve as co-editors. We would love to know where you are living or working or if you have had a major life change such as a wedding, a new job or a birth. Please visit the website ([www.chemistry.armstrong.edu](http://www.chemistry.armstrong.edu)).

At the web-site, click on the link to the newsletter and follow the directions to submit changes in mailing address or changes in your email address. You can also

use the same link to provide Alumni News for an upcoming issue of the newsletter. If you do not have internet access please call Gladys McBrayer at 912-927-5304 to provide your updated information. In all correspondence, please give your full name, email address and/or phone number and semester and year of your graduation from Armstrong Atlantic.



### Message from the Department Head

Allow me to add a word of welcome to the first chemistry newsletter. I hope it will become a tradition for many years to come. There is so much to tell you about, it won't fit into one column. Many of you are recent graduates of Armstrong Atlantic State University; many graduated before I arrived at Armstrong State College. You can be sure that the chemistry program is growing and getting stronger each year. I would like to point out some of the highlights of the last few years. In June 2002 we moved into a new state-of-the-art facility. If you have not been on campus lately, come by and see the new home of chemistry and physics. In addition to two

general chemistry labs and an organic lab, we now have labs dedicated to every discipline. An impressive array of instrumentation has been acquired through grants, donations from local industries, and the chemistry endowment fund. Students now get hands-on experience with infrared, atomic absorption, fluorescence, and proton and multi-nuclear NMR spectroscopy; liquid and gas chromatography; thermogravimetric analysis, scanning calorimetry, electron microscopy, and electrophoresis. The department will soon add particle size analysis to our capabilities. Besides being used in undergraduate laboratories, this equipment plays an important part in our growing number of undergradu-

ate research projects. Enrollment is growing exponentially. Since 2002, the number of students taking general chemistry has increased 35%, while the number taking organic chemistry has increased a whopping 107%. I'm sure you all remember organic with fondness, and can understand the enthusiasm! The Student Affiliates continue to be active, and to receive recognition from the national ACS.

I guess I've gone on long enough, but remember: once an Armstrong Chemist, always an Armstrong Chemist. We would love to hear from each of you. Visit our website, or better yet, visit us in person. You're always welcome at your chemistry home.—Todd J. Hizer

Fall 2004

Volume 1, Issue 1

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# Pre-Pharmacy Program Takes Off

AASU's Pre-Pharmacy Program was forever changed in the Fall of 2003. The matriculation of the first 68 students in South University's School of Pharmacy expanded both the number of AASU pre-pharmacy majors and the professional options open to them. Over the past two years, the AASU pre-pharmacy advisors (Ms. Carpenter and Dr. Hizer) have been inundated with calls from prospective pre-pharmacy students as well as major changes among existing AASU students. South University joined Mercer University's Southern School of Pharmacy and UGA's College of Pharmacy in offering the Doctor of Pharmacy (Pharm. D.)

degree—the ultimate goal of AASU's pre-pharmacy majors. South's program is

**“Accommodating the increased demand for the General Chemistry, Organic Chemistry and Physics sequences has been a challenge for the faculty of the Department of Chemistry and Physics but it is one they are (so far) able to meet.”**

unique among its competitors in that it is a 3-year program (the others are four years) and South's pre-pharmacy curriculum includes a few additional courses. Accommodating the increased demand for the general chemistry, organic chemistry and physics sequences

has been a challenge for the faculty of the Department of Chemistry and Physics but it is one they are (so far) able to meet. The growth in the pre-pharmacy program benefits both AASU and its students. AASU students find that not only does the pre-pharmacy program prepare them to apply to pharmacy school but it also places them well on their way to a chemistry degree. If you or someone you know is interested in the two-year AASU pre-pharmacy program, please call Ms. Suzy Carpenter at 912-921-5654 or email her at [carpensu@mail.armstrong.edu](mailto:carpensu@mail.armstrong.edu)

## \$100,000 NSF Grant for Nanotechnology in Undergraduate Education

In 2003, Drs. Nivens, Lynch and Williams received a grant entitled “Vertical threads for Nanotechnology in the Chemistry Curriculum” from the National Science Foundation Division of Chemistry to explore new laboratory experiments and undergraduate research experiments in the growing field of nanotechnology. We have implemented nanoparticle synthesis labs in general chemistry and inorganic chemistry. Students have synthesized magnetite ( $\text{Fe}_3\text{O}_4$ ), ZnS, CdS and  $\text{MoS}_2$  nanoparticles. Physical chemistry students have studied the spectroscopic properties of nanoparticles while students in instrumental analysis and biochemistry have used coated or functionalized nanoparticles to perform separations and extractions. For example, students in instrumental analysis use hydrophobic magnetite nanoparticles to mimic an environmental clean-up by removing a hydrocarbon spill from a water sample. Students in advanced analytical chemistry worked as a team to photochemically degrade organic pollutants, such as pentachlorophenol, at the surface of semi-conductor nanoparticles. The samples were analyzed for less chlorinated products via

GC/MS. This grant has thus far produced 1 publication, 7 presentations at national and regional meetings with two more publications in preparation. Six students received stipends and sup-

**“This NSF grant has resulted in cutting edge curriculum changes and a reinvigorated undergraduate research program at AASU”**

plies for summer research projects in the summers of 2003 and 2004. The grant has been extended through December 2004 to allow students to continue pursuing experiments. In addition, two high school students from Groves High School participated in the nanotechnology initiative through generous support of International Paper, The College of Arts and Sciences and Project SEED, an American Chemical Society program for economically disadvantaged high school students. The NSF grant, coupled with a University System of Georgia Matching Funds Grant, allowed the department to purchase 15 Spectronic Genesys 20's, 2 diode array spectrometers, a scanning tunneling microscope and an epifluo-

rescence microscope. However, this grant has provided more than just money and equipment. This NSF grant has resulted in cutting edge curriculum changes and a reinvigorated undergraduate research program at AASU. Participation in the nanotechnology project has been high and the students involved have presented posters at meetings including SERMACS in Atlanta in November 2003 and at the annual AASU Student Research and Scholarship Symposium held in April 2004.

Mark your calendar for Friday, February 11, 2005 when Drs. Lynch and Nivens will present a faculty lecture entitled “It's a Small World Afterall: Nanotechnology: The Next Big Thing” in University Hall room 156 at 12:15 pm.

Publication:  
Lynch, Will E.; Nivens, Delana A.; Helmly, Brian C.; Richardson, Monica and Williams, Ronald R. “Luminescent Properties of Doped Nanoparticles. Preparation of ZnS with Manganese, Copper and Silver Dopants,” *Chemical Educator*, 2004, 9, 1-4.

## Faculty Profile-Dr. Catherine MacGowan

Dr. Cathy MacGowan or Dr. Mac as students know her, is beginning her twelfth academic year at Armstrong Atlantic State University. She has a doctorate in Science Education from the University of Akron, a master's degree in Chemistry from the University of Colorado and a bachelor's degree in biochemistry from the University of Michigan. Prior to entering the science education field, Cathy worked several years as an analytical chemist at Ford Motor Company's Central Laboratories in Dearborn, Michigan. Currently she is serving as the Coastal Georgia ACS local section treasurer/secretary and Chemistry Olympiad Chair.

Dr. MacGowan's research interests revolve around curriculum development and student learning. She has presented her work at both the national and regional level, has been the recipient of several grants, has reviewed manuscripts for the *Journal of College Science Teaching* and the *Journal of Chemical Education*. Dr. Mac is also a member of the National ACS Examination Board writing committee for the 2006 General, Organic and Biochemistry Exam. At AASU

Dr. MacGowan, along with Ms. Donna Mullenax, coordinates the department's P-12 outreach program. This program works with the area's K-12 schools (private & public). With the help of the student affiliates and physics clubs, the program invites both students and teachers to visit the AASU campus to perform science experiments and participate in the "Fun with Science" demonstrations/lecture series. Response to the program is overwhelming – schools as far as Claxton and Wayne County have brought their classes to AASU.

As of Fall 2003, Cathy is a PRISM co-facilitator/associate for AASU, one of the four PRISM sites in the state of Georgia. PRISM (Partnership for Reform In Science and Mathematics) is a statewide NSF (National Science Foundation) initiative to improve science and math education across the state of Georgia. PRISM's goals include not only improving K-16 student learning in mathematics and the sciences, but to strengthening the relationship and interactions between College of Arts and Science faculty with



local K-12 teachers. As part of the PRISM initiative this past summer term, Cathy and Mr. Christopher Schuberth

(geology/education) developed a chemistry/geology course for K-12 teachers. The course was a great success and will hopefully be funded next year. To quote, Cathy, "Working with area K-12 instructors whether it is a part of the PRISM initiative or as part of our department's outreach program is not only a great learning experience for students and teachers but also for me. You never know what questions students will ask or on what projects teachers will need your help. It is a lot of hard work, but it is worth the effort when you see students and teachers alike learning science and having a great time."

## Upcoming Events

The Fall Semester began August 16th 2004.

Nuclear Chemistry Symposium- October 1st 2004 in conjunction with the American Chemical Society Coastal Georgia and Savannah River Local Sections. Topics include the history and environmental impact of the Savannah River Site and current advances in nuclear chemistry and medicine. The event will be held from 12 noon -6 pm in SC 1407 with a dinner to follow downtown. Contact Will Lynch at [lynchwil@mail.armstrong.edu](mailto:lynchwil@mail.armstrong.edu) or 912-921-2337 for more information.

Celebrate AASU Day will be October 6th 2004 beginning at 10 am in the quad. Visit the Student Affiliates, Physics and Astronomy Club Booths and help support our students. Children are welcome as they always have free food and games.

The Student Affiliates will host their first Halloween Party on October 29th, 2004 in room SC 2302. All alumni are welcome and costumes are required! Come have fun!

Student Seminars in Chemistry 4500 will be held on December 1st. SC 1407, 12:10 pm. If you want to see what our graduating seniors are up to,

please come.

If you are in the area of Columbia, SC Dr. Nivens will be presenting the alumni seminar at the University of South Carolina November 19th at 4:00 pm. The talk will focus on the Nanotechnology Initiative at AASU.

Mark your calendars for "It's a Small World After All: Nanotechnology the Next Big thing," a Faculty Lecture by Dr. Nivens and Dr. Lynch, February 11, 2005 in University Hall room 156, 12:15.



## In Memoriam– Dr. Robert Alan Kolodny

With sadness, we report the untimely death of Dr. Robert Kolodny. A member of our department for the last seventeen years, Dr. Kolodny interacted with several thousand students. Many of you took at least one class with him. He was active in recruiting students, raising money for scholarships, and helping majors find jobs in local industry. He was strongly devoted to the best interests of our students. In 1996, he received the

H. Dean Propst Award, recognizing his prominent role in teaching, counseling and supporting students.

A native of Brooklyn, N.Y. Dr. Kolodny received his B.S. in chemistry from Queens College, and his Ph.D. in inorganic chemistry from the University of Georgia in 1971. He moved to Savannah in 1974 and founded Chatham Chemical Company.

At the personal request of Drs. Henry Harris and John Brewer, the Harris-

Brewer Scholarship will be re-named the Robert Kolodny Memorial Scholarship. Memorials may be made to this fund (#333)

Dr. Kolodny's passing leaves a void in our department, and we shall miss him.



Dr. Kolodny passed away August 1st 2004

## Current Student News

**Marquit'a Bullock (Spring 2005)** was chosen by the ACS Scholars Program to receive a scholarship for the 2004-2005 school year. Marquit'a is pursuing an ACS certified degree in chemistry. She recently completed a summer internship at the Skidaway Institute of Oceanography with Dr. Stuart Wakeham, on lipid analysis from water samples from the Black Sea. Marquit'a serves the department of Chemistry as a laboratory assistant and is treasurer of SAACS. She is a member and officer of Delta Sigma Theta, Tau Alpha Chapter, and a member of National Organization for the Professional Advancement of Black

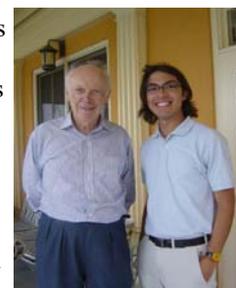


Marquit'a Bullock

Chemists and Chemical Engineers. Marquit'a is planning on attending graduate school and pursuing her interests in forensic chemistry.

**Juan Aragon (Spring 2005)** recently completed a summer internship in Greg Hannon's laboratory at Cold Spring Harbor, NY. His research focused on the biochemical activities and interactions between the RNA-induced silencing Complex (RISC) and the short interfering RNA (siRNA). Juan is a native of Cali, Co-

lombia and will graduate with honors in Biology and Chemistry in Spring 2005. He is active on campus as President of the Student Affiliates of the ACS, member of the Student Government and Campus Union Board and a community leader at Compass Point. He plans on pursuing a PhD in biochemistry.



Juan Aragon meets James D. Watson, Winner of the Nobel Prize in Medicine in 1962 for discovery of structure of DNA

## Alumni News

**Dr. Clint Brooks (AASU Spring 1996)** completed his PhD in the lab of Dan Cummins at North Carolina State University and a post-doc in the lab of Dr. Barry Trost at Stanford University. He is currently a Senior Scientist II in the Oncology group in Medicinal Chemistry at Novartis in Cambridge MA.

**Brandon Quillian (AASU Spring 2003)** received the Kenneth W. Whitten Award for outstanding teaching assistant at the University of Georgia. Brandon is a second year graduate student at the University of Georgia. He is working in the lab of Gregory H. Robinson in or-

ganometallics. He has had one paper accepted entitled "New Pb-Pb bonds: synthesis and molecular structures of hexabiphenyldiplumbane and tri(trisbiphenylplumbyl)plumbate" in *Chemical Communications* and one more submitted to *JACS*.

## Contact Us Anytime!

We'd love to hear from you! The chemistry faculty at AASU are interested in keeping in contact with all our friends and alumni, maybe we can even talk science! All emails listed in parenthesis have the extension "@mail.armstrong.edu"

Dr. Todd Hizer, Associate Professor and Interim Department Head, Physical and General Chemistry (hizertod)

Dr. Richard Wallace, Professor, Organic Chemistry, (wallacri)

Dr. Sabitra Brush, Associate Professor, General Chemistry, Chemistry for P-12 Educators, (brushsab)

Dr. Jim Byrd, Associate Professor, General and Analytical Chemistry, Oceanography, (byrdjim)

Ms. Suzy Carpenter, Associate Professor, Organic Chemistry, Pre-pharmacy advisor, (carpensu)

Dr. Will Lynch, Associate Professor, Inorganic, General, Physical Chemistry, (lynchwil)

Dr. Pete Zipperer, Associate Professor, Nursing Chemistry, Physical Science, Pre-medical Advisor, (zipperwc)

Dr. Catherine MacGowan, Assistant Professor, General and Nursing

Chemistry, non-majors courses, (macgowca)

Dr. Delana Nivens, Assistant Professor, Analytical Chemistry and Biochemistry, (nivensde)

Dr. Curt Woolever, Temporary Assistant Professor, (woolevcu)

Dr. Maria V. Schiza, Temporary Assistant Professor, (schizama)

Mrs. Lynn Kennedy, Laboratory Instructor, General Chemistry, (kennedly)

Mrs. Yvonne Hizer, Laboratory Instructor, General and Organic Chemistry, (hizeryvo)

## Annual Giving

The Department of Chemistry and Physics maintains accounts within the non-profit Armstrong Atlantic State University Foundation, Inc. If you are considering a donation to the university, please keep us in mind. The Department relies on foundation monies for the maintenance and upkeep of instrumentation, travel, the annual banquet, undergraduate and faculty research, the student affiliates and outreach programs. If interested visit <http://www.external-affairs.armstrong.edu/pledge.htm> or contact Gail Rountree, Coordinator of Annual Fund, Office of External Affairs 11935 Abercorn Street, Savannah, GA 31419, (912) 927-5208, (912) 921-5740 (Fax).

Please designate your gift to Chemistry/Physics (189) so that you will have the biggest impact on our students and faculty.



Our instrument lab is one of the many beneficiaries of contributions to the foundation.

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Phone: 912-927-5304

Fax: 912-961-3226

Email: [nivensde@mail.armstrong.edu](mailto:nivensde@mail.armstrong.edu)



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## Medical School Acceptance At All-Time High

Once again this year AASU put more students in medical schools than any other 4 year public university in the state. We sent freshman medical students to the Medical College of Georgia, Mercer University, Uniformed Services and the Medical College of New England. We had acceptances to Emory, Ohio State University Medical School and University of Virginia Medical School. AASU has the only public university post baccalaureate pre-med program in

Georgia. It is a small but high quality program. Every student that has completed the program and applied to medical school has been accepted. Also we were invited this year to join the Medical College of



Georgia's Pre-Medical Honors Corp for under represented minority and disadvantaged students. We are proud of all our student's accom-

plishments. If you or someone you know is interested in the AASU pre-medical program or the post-baccalaureate pre-medical program, please contact Dr. Pete Zipperer at 912-921-5660 or [zipperwc@mail.armstrong.edu](mailto:zipperwc@mail.armstrong.edu)

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