

**RE:ACTIONS - Newsletter of
the Department of Chemistry**

MARCH 2005

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LETTER FROM THE CHAIR

The semester is rapidly approaching the mid-way point. Soon mid-term grades will be reported for you in each of your classes. This grade is what you would receive in this course if it were to end at mid-term. Please ask your professor what your mid-term grade is if you do not usually receive it in a timely manner. These grades should serve as either a "pat on the back" for good work so far or as a "wake up call" if you are not satisfied with the reported grade. If you wish to improve this grade make sure that you

make fundamental changes in the way you approach the course. Doing the "same old thing" will almost certainly yield the same result. Please examine your note taking, attendance, study methods, etc. and be sure to take full advantage of the office hours of your instructors and the STARS Tutoring Center. Remember the faculty and staff of the chemistry department are here to help you succeed and your success is our success. Have a safe, productive, and restful Spring Break.



H. Alan Rowe, Ph.D., Chairman, Department of Chemistry - hard at work on your behalf.



The students and faculty of the Chemistry Department extend deepest sympathy to Dr. Rowe and his family on the loss of his Mother, Mrs. Louise Rowe on February 20, 2005.

CONGRATULATIONS TO STUDENTS & FACULTY!

NEWSLETTER IS NOW ON THE WEB

- This is our third newsletter.
 - All newsletters are now available on the chemistry departmental website.
- <http://www.nsu.edu/schools/sciencetech/chemistry/newsletters/>
- Students, Alumni, Faculty - Please contribute stories for your newsletter.

Congratulations to students and faculty who represented NSU at the HBCU-UP Conference at Southern University in New Orleans, February 2005.

Mayen Udoetuk – 1st Place Oral (Reliability of Tethered *E. COLI* Cells as Mechanical Actuators for Micro fluidic Systems)

Taina Cleveland – 2nd Place Oral (Synthesis and Characterization of SF-PPV-I: C₁₀H₂₄ Side Chain)

Sherket Peterson – 1st Place Poster (Optimization of Face Analysis of Cellular GAG Production)



Ebony Hill – 4th Place Poster (Development of a Rapid and Efficient Protocol for the Isolation of Rat Epididymal N-acetyl-b-D-glucosaminidase)

Joseph C. Hall, Ph.D. 2nd Place Award for Outstanding Mentoring of Students at NSU.

NSU shines at 2005 HBCU-UP, Conference at Southern University, New Orleans, Louisiana

PROFILES IN CHEMISTRY - ALUMNUS- BRIAN HARRIS

I was born the younger of two sons of my parents Phyllis and Charles Harris in Portsmouth, VA. I spent my childhood years growing up in Virginia Beach, VA where I attended Tallwood High School. While in high school, I took a liking to the sciences which motivated me to major in chemistry at Norfolk State University. While a student at NSU, I was a Center for Materials Research Scholar and worked as a research assistant in the Scientific Visualization Lab in the area of computational chemistry under the direction of Dr. Suely Black. During the summer of my junior year at NSU, I was selected to be a part of the NASA Langley Aerospace Research Summer Scholars (LARSS) program in Hampton, VA. The research and experience gained during the LARSS program was very influential in my later career choices.

After graduating with honors from NSU, I entered the University of Maryland (UMD), College Park department of Materials Science and Engineering. I applied to and was awarded the Alfred P. Sloan Fellow-

ship and the NASA Harriet G. Jenkins Pre-doctoral Fellowship to assist me financially during my graduate studies. I worked in the Microwaves lab examining the effects of microwaves on the materials properties of ceramics and also assisted my advisor in teaching a freshman level engineering course. While at UMD, I was very active in the National Society of Black Engineers. During the 2001 national conference in Indianapolis, I interviewed and was selected for a position as a co-op for the Materials Engineering Branch at the NASA Goddard Space Flight Center. This afforded me the opportunity to both work and go to school.

After graduation, I accepted a full time position with NASA as a materials engineer. Currently, I am a part of a design team for the Integrated Science Instrument Module (ISIM), which will be used to house infrared detectors on the James Webb Space Telescope (JWST) which is the next generation of Hubble's success. ISIM will be made of a lightweight fiber reinforced composite material to reduce weight

and will work in a super cold environment of 30K (-406°F). My day-to day research is critical to the decisions on what specific materials shall be used to successfully launch JWST in the year 2012. Since being at NASA, I was a founding member of 4 engineers that came together to form an alumni extension chapter of the National Society of Black Engineers.

During the past year, I married Kendra Wilson (NSU, Biology '98) and we had our first child, Kennedy.

I am also taking Ph.D. courses in aerospace engineering at UMD to maybe one day return to NSU to become a professor.

As I sit here and write this bio, I wonder "Wow, that was a lot of stuff", but believe me, time will fly. The key to achieving your dreams is to stay focused and have a game plan. Even if you are not sure what you want to do, you should make it a point to set goals in your life. Also, make the most out of every opportunity because you will never know when that door will open up again.

Brian Harris, Chemistry 2000



Proud Father Brian Harris with daughter Kennedy Amari Harris.

"...make the most out of every opportunity because you will never know when that door will open up again."

YOU'RE INVITED TO CONTRIBUTE

Chemistry majors, I would like this to be your newsletter. Please stop by my office and give me your reactions, your input, suggestions for articles, columns, etc. What would you like to see in your newsletters?

Have you won an award, or been accepted to graduate school, medical school, gotten that job you wanted? Let me know and we can all celebrate your success.

Chemistry Club, what are

you doing? Would you like a column in this paper? Would you like to announce your meeting schedule? Feedback is required if you would like to make this your newsletter. E-mail anything you would like to see included in the publication next month.

Faculty, would you like to highlight your research, or the students that are working with you? Please e-mail an article to me.

Alumni, what is happening in your life? Please keep in touch. Share marriages, births, graduate school, new jobs, or helpful tips for our current students with us.

Re:Actions is now available on-line on the chemistry department's web page. <http://www.nsu.edu/schools/sciencetech/chemistry/newsletters/>

J. Krail, (Rm. 136 WSB)
(jgkrail@nsu.edu)



Brian Harris, M.S., Materials Engineer, NASA - working on the next generation of space telescope.

PROFILES IN CHEMISTRY - FACULTY - DR. ARGY

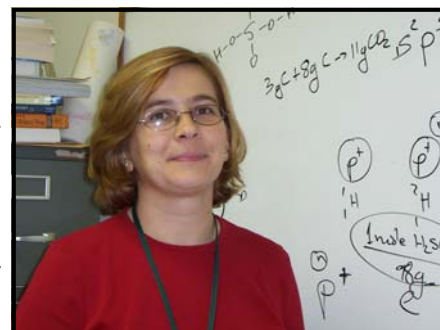
Hi, my name is Argyroula Stamatopoulou and I am an assistant professor of chemistry at NSU. I received my PhD from Purdue University. My thesis focused on evaluating chemical potentials of hard solutes in hard sphere fluids using Monte Carlo simulations and analytical approximations. I then joined the Department of Medicinal Chemistry and Molecular Pharmacology at Purdue as a postdoctoral research associate. My research project was to determine Protein structure using computational and experimental techniques. Information from NMR experiments was used to refine homology derived models. I became familiar with

programs such as: MODEL-
LER, CHARMM, XPLOR and
QUANTA.

My research interests include understanding protein stability, structure and function. My focus is noncovalent protein – protein interactions and I try to address questions such as “what makes a binding site a binding site?” Being able to predict binding sites would both limit the conformational search in drug design and it will facilitate the prediction of protein-protein interactions and may also lead to binding site design. Noncovalent interactions are important in many physiological processes. They play an important role in numerous physiological processes such as signal transduction, regulation, complexation and immune recognition. They are critical components

of many processes such as folding of proteins and nucleic acids, biocatalysis and an essential part of ligand-receptor, drug-target interactions.

I would like to study the energetics of protein-protein interactions and more specifically estimate the changes in the binding free energies when mutations take place in interacting molecules. I will address the question of protein stability by applying the simulation on the denatured as well as the native state and then question the choice of dielectric constant of 1 that was used in previous simulations.



Argyroula Stamatopoulou, Ph.D.,
aka Dr. Argy

“Norfolk State University has offered many opportunities in the area of research ...”

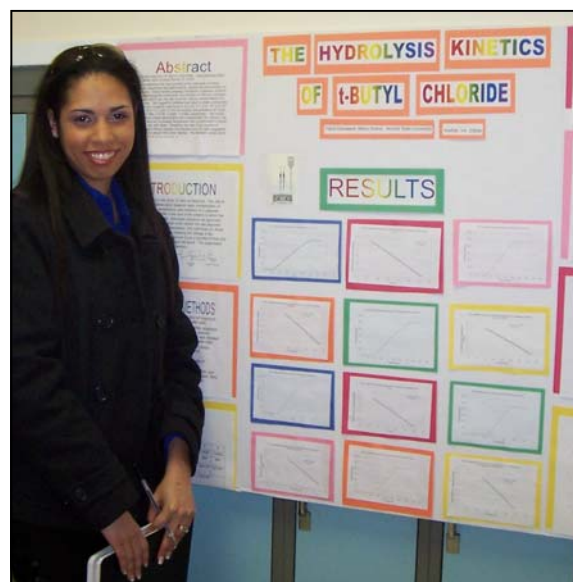
PROFILES IN CHEMISTRY-STUDENT - TAINA CLEVELAND

I was born and raised in San Juan, Puerto Rico and completed my high school studies in May 1999 at the Academia Santa Monica in Santurce, Puerto Rico. Later that same year, I attended the University of Puerto Rico, Río Piedras, majoring in Biology until December 2001. In spring 2002, I transferred to Norfolk State University as a chemistry major. From 2002 through 2003, I was active in research, under the supervision of Dr. Waldo Rodriguez, working with atmospheric science. It was an honor to present my work in regional and national symposiums. But far more important was being recognized with a merit award in the 2002 NASA Summit Pair conference. In spring 2003, I began learning purification, isolation and N-

terminal sequence techniques for the purification of DPP-IV in snake venoms. At the 2003 National Educators conference I had the pleasure of presenting my work, and was recognized with a third place award. I also presented at the 2004 HBCU-UP and received first place. For the past year, I have been learning organic synthesis, purification methods, and characterization for the synthesis of SF-PPV-I. More recently, I had the opportunity of presenting my work on SF-PPV-I and received second place in the 2005 HBCU-UP Conference. Norfolk State University has offered many opportunities in the area of research for which I am grateful. I encourage younger classmates to begin undergraduate research as soon as possible. Be-

sides providing hands on research it also gives you the opportunity to incorporate your classroom learning with your research investigations.

Mrs. Taina D. Cleveland presenting a poster in her physical chemistry laboratory class.





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Norfolk State University (NSU) is a public, state-assisted institution in Norfolk, Virginia. The School of Science and Technology is one of five schools in the University. It has over 1,600 students and presently comprises almost 25% of the University's total enrollment.

The School of Science and Technology has played a pivotal role in the University's 80 year history. Faculty contributions in research, grantsmanship, service, and mentoring are exceptional.

The future for the School of Science and Technology is unlimited. We invite you to join us for a very exciting and eventful academic journey.

The Chemistry Department is committed to preparing students for graduate study in chemistry and related fields, professional schools such as medical, dental and pharmacy school, and careers in the chemical industry. Graduates are now doctors, dentists, lawyers, teachers, university deans and professors, and business men and women serving in industry and government.

CONGRATULATIONS DR. SAM-SHAJING SUN



Dr. Sam Sun at work in the polymer laboratory.

Organic Photovoltaics: Mechanisms, Materials, and Devices, edited by our own Dr. Sun, Professor of Chemistry at NSU and Professor N. Sariciftci of Johannes Kepler University of Linz, Austria has just been published by the CRC Press.

This book provides the knowledge required to develop cleaner, lighter and cheaper renewable energy sources for coming generations.

The book is divided into four sections - Two forwards, one by Nobel Laureate Alan J. Heeger, University of California at Santa Barbara.

The General Overview includes the story of solar cells, information on inorganic photovoltaic materials and devices and a review of molecular and polymeric devices.

Mechanisms and Modeling includes simulations of optical processes in organic photovoltaic devices and optimization of organic solar cells.

Materials and Devices includes a background, current research, and applications of organic and polymeric photovoltaic materials and devices.

Congratulations to Dr. Sun on this important publication in the field of photovoltaics.

To read about Dr. Sun's work at NSU see our Fall 2004 Newsletter.

Organic Photovoltaics

Mechanisms, Materials, and Devices



Sam-Shajing Sun
and
Niyazi Serdar Sariciftci