

NSF DEPUTY DIRECTOR - DR. JOSEPH BORDOGNA

SPEAKS AT 13TH CONFERENCE ON CURRENT TRENDS IN COMPUTATIONAL CHEMISTRY

Dr. Joseph Bordogna was the featured speaker and honored guest at the 13th Conference on Current Trends in Computational Chemistry, hosted by Jackson State University on November 12 & 13, 2004. He is the Deputy Director and Chief Operating Officer of the National Science Foundation (*see sidebar for more information.*)

Dr. Bordogna spent time meeting with JSU faculty and students during his attendance at the conference and addressed the assembly at its concluding banquet on November 13th. He spoke forthrightly about progress at JSU and about the challenges facing the scientific workforce. Here is an excerpt of what he said about JSU:

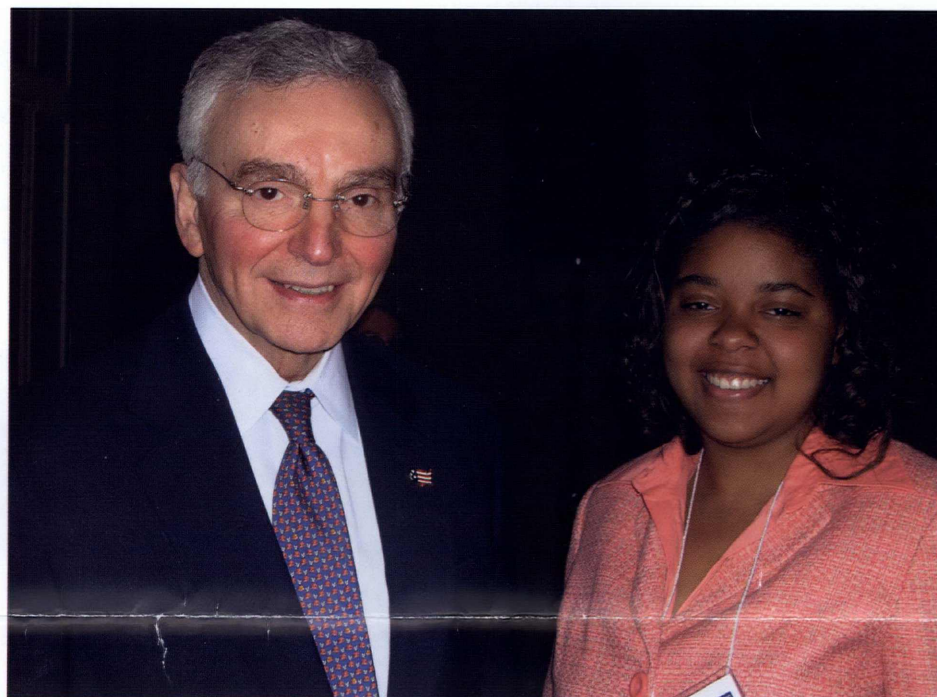
“This morning, I had a chance to meet faculty and students. My discussions with them reinforce my impression of the intellectually integrative, cross-boundary strength of Jackson State’s journey into the future.

Here at JSU, what I have seen adds to my impression that its dynamic computational chemistry center ranks among the leading centers in NSF’s CREST program – the Centers for Research Excellence in Science and Technology.

The work here at the Center personifies all three strategies applied in creating NSF’s investment portfolio: investment in intellectual capital, integration of education and research and promotion of partnerships.

Achievements include bringing state-of-the-art computational tools to campus, encompassing undergraduates to post-doctorates, and establishment of a Ph.D. program. With respect to CREST partnerships specifically, Jackson State excels. Its international linkages among many countries provide the global orientation our nation’s students so vitally need.

Speaking broadly, viewing our nation as a whole, we need



Dr. Bordogna and Bridge to the Doctorate Student, Jelani Griffin

to integrate our educational strategies at all levels. Jackson State University has been able to integrate various types of support available across NSF, to take programs aimed at various levels of education, and at individuals and institutions, and to make them into holistic activities.

One of these programs, about which I am unabashedly passionate, is the Louis Stokes Alliances for Minority Participation (LSAMP.) LSAMP now includes what is called the “Bridge to the Doctorate,” which begins to focus on what happens to the students after baccalaureate graduation. An increasing number of students are taking the step onto this “bridge” – and I would like to congratulate those here at Jackson State who are among that accomplished crowd.”

Dr. Bordogna went on to comment on the need for diversity in the scientific and engineering workforce. He said, “We often note that diversity is a nation’s

competitive advantage. NSF is committed to the belief that a nation’s future can be assured only by integrating ideas from all segments of its population. We need to focus our vision and energies on drawing into the engineering and science workforce a larger proportion of women, underrepresented minorities, and persons with disabilities. Such diverse participation in a nation’s workforce will ensure that it has the extraordinary capabilities to sustain its progress and competitive acumen.”

In concluding his remarks, Dr. Bordogna added, “I’ve been asked many times to explain how minority-serving institutions fit into this new century and how their role has evolved. The answer is not in the “fitting in” – the answer is rather, given the ever-evolving changes in our nation and across our globe, we are turning to Jackson State as part of a new wave of leadership institutions which will take us ahead in this increasingly complex and diverse world.”

DR. JOSEPH BORDOGNA

Dr. Joseph Bordogna is Deputy Director and Chief Operating Officer of the National Science Foundation (NSF). Previously, he served as head of NSF’s Directorate for Engineering and is currently a member of the President’s Management Council.

After having received the BSEE and Ph.D. degrees from the University of Pennsylvania, he served as a line officer in the U.S. Navy, a practicing engineer in industry and as a professor before coming to NSF.

Prior to appointment at NSF, he served at the University of Pennsylvania as Alfred Fitler Moore Professor of Engineering, Director of the Moore School of Electrical Engineering, Dean of the School of Engineering and Applied Science, and Faculty Master of Stouffer College House, a living-learning residence at the University.

Dr. Bordogna has made contributions to the engineering profession in a variety of areas including early laser communication systems, holographic television playback systems and early space capsule recovery. He is also the founder of PRIME (Philadelphia Regional Introduction for Minorities to Engineering.)

He is a Fellow of the American Association for the Advancement of Science (AAAS), the American Society for Engineering Education (ASEE), the Institute of Electrical and Electronics Engineers (IEEE), where he served as President, and the International Engineering Consortium.

CSET WELCOMES NEW FACULTY

BIOLOGY DEPARTMENT

Dr. Wellington Ayensu:

Assistant Professor: M.D. Universidad Central del Este, San Pedro de Macoris, RD., 2000, PostDoc experience at University of North Carolina, Chapel Hill. *Research Areas:* Special interest in clinical research and molecular mechanisms underlying diseases: Environmental Immunotoxicology.



Dr. Raphael Isokpehi:

Assistant Professor: Ph.D., University of Lagos, Nigeria, 2000, PostDoc experience at the South African National Bioinformatic Institute, *Research Areas:* Medical Microbiology, comparative transcriptomics of protozoan parasites



Dr. Dwayne Sutton:

Assistant Professor: Ph.D., Jackson State University, 2003, PostDoc experience at JSU in Biology, *Research Areas:* Toxicology and Cytotoxicity.



Dr. Hyun Jung Cho:

Assistant Professor: Ph.D., University of New Orleans, 2003, Post Doc at the University of New Orleans, *Research Areas:* Ecology of Aquatic Vegetation, Limnology and coastal ecology, Remote Sensing/GIS for biological studies

Dr. Anita Patlolla:

Research Assistant Professor
Ph.D., Jackson State University, 1997, Post Doc at JSU, *Research Areas:* Genotoxic, Toxicokinetics, and Histopathology effects of Heavy metals in animal model.



Dr. Dmitri Sobolev:

Assistant Professor
Ph.D., University of Alabama, 2001, *Research Areas:* Environmental molecular biology/biogeochemistry, nitrogen cycle in the environment, metal-nutrient interaction.

CHEMISTRY DEPARTMENT



Dr. Zikri Arslan:

Assistant Professor: Ph.D., University of Massachusetts Amherst, 2000, Post Doc at James J. Howard Marice Science Lab (NOAA.), *Research Areas:* Analytical/Environmental Chemistry

Dr. Naomi Campbell:

Associate Professor
Ph.D., University of Southern Mississippi, *Research Areas:* environmental genome.



Dr. Ruomei Gao:

Assistant Professor: Ph.D., University of Sci and Tech of China, 1998, Post Doc at Cal State University, LA. *Research Areas:* Photo-induced energy and electron transfer reactions



Dr. Blake Hill:

Assistant Professor
Ph.D., Jackson State University, 2003, Post Doc at University of California, Berkeley.. *Research Areas:* Theoretical/Computational Chemistry

MATHEMATICS DEPARTMENT



Dr. Bassirou Diatta:

Assistant Professor
Ph.D., Howard University, 1995, *Research Areas:* Differential, Symplectic and Algebraic Geometry, Quantum Groups

Dr. Zhenbu Zhang:

Assistant Professor
Ph.D., Tulane University, 2002. PostDoc experience at the University of Connecticut. *Research Areas:* Nonlinear Elliptic and Parabolic Equations, Phase Transitions



Dr. Raghu R. Gompa:

Professor
Ph.D., The University of Toledo, 1987. *Research Areas:* Quantum Mechanical Time Evolution.



Dr. Vijaya L. Gompa:

Associate Professor
Ph.D., The University of Toledo, 1992. *Research Areas:* Topographical Algebra

COMPUTER ENGINEERING DEPARTMENT

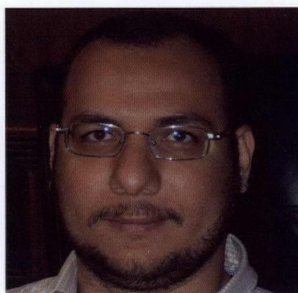


Dr. Kamal S. Ali:

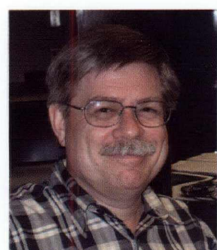
Professor
Ph.D., Reading University, UK, *Research Areas:* Microprocessor/Embedded Systems. Neural Networks

Dr. Abdelnasser A. Eldek:

Assistant Professor,
Ph.D., University of Mississippi, 2004, Post Doc experience at University of Mississippi. *Research Areas:* Electromagnetic Theory, Finite Difference Time Domain Method, Antenna Design, and Phased Arrays



Dr. Shahrouz Aliabadi: *Northrop Grumman Professor of Engineering,* Ph.D., The University of Minnesota, 1994, Post Doc at University of Minnesota.. *Research Areas:* high performance computing, computational aerodynamics, free-Surface flows, dispersion of chemical and biological agents, computational fluid dynamics (CFD), parallel processing (PP), finite element method (FEM), finite volume method (FVM), mesh generation and flow visualization



Dr. Gordon Skelton:

Associate Professor,
Ph.D., University of South Africa, *Research Areas:* Software Engineering, Wireless Application Development, Wireless Sensor Networks, Embedded Software Development, Software Testing and Quality Assurance

Dr. Tadesse Ghirmai:

Assistant Professor, Ph.D., Stony Brook University, 2004; Post Doc at Stony Brook University. *Research Areas:* Signal processing for communication including Monte Carlo methods



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ACROSS THE BRIDGE TO THE DOCTORATE

COHORT ONE SCORES 100% IN DOCTORAL PROGRAM PLACEMENT

The goal of the Bridge to the Doctorate program is to bridge LSAMP students who have received a baccalaureate degree in a STEM area into a STEM doctoral program. JSU's program was the first to place all of its Bridge Fellows in doctoral programs.

The program funds the initial two years of graduate study. This activity broadens participation through the attraction of underrepresented minority students in science, technology, engineering and mathematics (STEM) disciplines. Additionally, the program seeks to remove minority students' hesitancy about entering graduate school, and the fear of creating additional financial indebtedness associated with initial graduate education.

The two year program provides living stipends, full graduate tuition and fees, mentoring assistance, academic enrichment, academic year research experiences, summer research experiences, travel to conferences and workshop/seminars/speakers series.

The first cohort of students, who are listed below, served summer research internships with the following mentors: Dr. Priscilla Cooper, Senior Staff Scientist; Dr. Janice Pluth, Life Sciences Division; Dr. Scott Taylor, Staff Scientist; Dr. Henry Van Brocklin, Staff Scientist; and Dr. John Shalf, Computer Scientist; , Lawrence Berkeley National Lab; Dr. Jose Centeno, Senior Research Scientist and Chief of the Division of Biophysical Toxicology, The Armed Forces Institute of Pathology; Dr. Martin Head-Gordon Professor of Chemistry UC Berkeley; Dr. Tobias Hollerer, Visualization Laboratory, University of California at Santa Barbara; Dr. Ana Robles, the National Institutes of Health; Dr. Jerome Karle, Nobel Prize Laureate, the Office of Naval Research ;

To be eligible, applicants must have the following: a B.S. degree in Science, Technology, Engineering or Mathematics; minimum GPA of 3.0; participation in an undergraduate LSAMP Program; a commitment to pursuing a doctoral degree; acceptance into Jackson State University Graduate School; meet the requirements of a JSU STEM Graduate Department or Program and U.S. citizenship.

Najealicka Armstrong
Environmental Toxicology/
Molecular Toxicology



Research Director at JSU: Dr. Paul Tchounwou, Chair, Biology Department

Masters Thesis Title: Potassium Dichromate-Induced Biochemical and Genotoxic Effects in Male Sprague-Dawley Rats. **Accepted to Howard University Doctoral Program in Biochemistry and Molecular Biology**

Eric McClendon
Chemistry - Organic Synthesis



Research Director at JSU: Dr. Ashton Hamme, Assistant Professor of Chemistry

Masters Thesis Title: 1,3-Dipolar Cycloaddition Reactions Toward Spiroisoxazoline Compounds. **Accepted to Jackson State University Doctoral Program in Chemistry**

Charity Mosley
Chemistry-Toxicology



Research Director at JSU: Dr. Hongtao Yu, Chair of the Chemistry Department

Masters Thesis Title: Phototoxicity of a Hair Dye, 4-Chloro-1,2-Phenylenediamine and a Sunscreen Agent, 2-Phenylbenzimidazole. **Accepted to Jackson State University Doctoral Program in Chemistry; Honorable Mention National Science Foundation Graduate Fellowship 2005**

Brian Napolion
Computational- Physical Chemistry



Research Director at JSU: Dr. John Watts, Associate Professor of Chemistry. *Research Title:* Computational Studies of Sulfur Oxygen Radicals. *Masters Thesis Title:* Theoretical Studies of Prototypical Thiyl Peroxyl, Sulfonyl and Sulfonyl Peroxyl Radicals **Accepted to Jackson State University Doctoral Program in Chemistry**

Kylie Nash
Computer Science



Research Director at JSU: Dr. Loretta Moore, Chair, Computer Science

Master Thesis Title: Navigation in 3D Virtual Environments Using Path Optimization Algorithms; **Accepted to the Doctoral program at Mississippi State University in Computer Science**

Mekel Richardson
Molecular Biology



Research Director at JSU: Dr. Ernest Izevbigie, Assistant Professor of Biology

Masters Thesis Title: Short Hairpin-mediated Silencing of the p53 Tumor Suppressor Gene in Human Cancer Cell Lines and Its Impact on Survival in Response to Chemotherapy. **Accepted to the Doctoral Program**

at the University of Tennessee, Memphis in Molecular Biology and to the University of Texas - Houston in Cancer Biology

Tomekia Simeon
Computational Chemistry

(Pictured with Dr. Glake Hill)



Research Director at JSU: Dr. Jerzy Leszczynski, Professor of Chemistry *Masters Thesis Title:* Nanostructured Materials with Adaptive Properties- Ab Initio Quantum Chemistry Studies of Fullerene Molecules with Substitutes. **Accepted to Jackson State University Doctoral Program in Chemistry**

Isi Tolliver
Molecular Biology/Oncology



Research Director at JSU: Dr. Ernest Izevbigie, Assistant Professor of Biology

Master Thesis Title: Structure and Properties of Modified Fullerene Substituted Effects. **Accepted to the Doctoral programs at Vanderbilt University-Molecular Biology, University of Mississippi-Biochemistry and The University of California, Davis, in Molecular Biology and Biochemistry**

Cornelius Toole, Jr.
Computer Science



Research Director at JSU: Dr. Loretta Moore, Chair of the Computer Science

Master's Thesis Title: Brokering Grid Services for Remote Distributed Visualization. **Accepted to the Doctoral Programs at Louisiana State University-Computer Sciences; University of Illinois, Chicago-Computer Science; Mississippi State University-Computer Science and University of Kentucky- Computer Science Honorable Mention National Science Foundation Graduate Fellowship 2005 Honorable Mention Ford Foundation Fellowship 2005**

Tyisha Traylor
Biology



Research Directors at JSU: Dr. Paul Tchounwou, Chair of Biology; Director of Environmental Science Ph.D. Program, and Dr. Yiming Liu, Associate Professor of Analytical Chemistry

Masters Thesis Title: Effects of Agmatine on Extracellular Levels of Excitatory Amino Acids. **Accepted to the Doctoral Program at Albany Medical College in Neuropharmacology & Neuroscience**

These students are the first cohort of the NSF LSMAMP Bridge to the Doctorate Fellows. We salute their accomplishments and will continue to support them on the pathway to the doctorate.

LSMAMP and Bridge to the Doctorate are supported by the National Science Foundation through Grant # HRD 0115807 and adheres to all standards of the EEO Act.

For information about the program contact
James Perkins, Ph.D., Program Director, 601-979-2024
james.perkins@jsums.edu

Production of Ph.D.s in the Environmental Science Program at JSU: A Success Story

The Ph.D. degree in Environmental Science is an interdisciplinary program involving faculty from all of the departments in the College of Science, Engineering and Technology (CSET.) The mission is to produce highly skilled environmental scholars who are capable of addressing current and future environmental challenges in a cost-effective manner, and who are able to provide policy makers and the general public with relevant scientific information to further the understanding and commitment to environmental stewardship. Over the years, a significant number of research centers such as the NIH RCMI Center for Environmental Health have been established in the JSU CSET to provide opportunities to graduate students and the faculty to develop and implement important environmental science research programs. Currently 28 students enrolled in the program. *This program is supported by the U.S. Department of Education Title III Graduate Education Program (grant # P031B04010), and the NIH RCMI Center for Environmental Health (Grant # 1G12RR13459.)*

DOCTORAL STUDENT	AWARD DATE	DISSERTATION RESEARCH	CURRENT POSITION
Patlolla, Babu	May 1997	Effects of Three Chlorinated Hydrocarbons on Growth and Genetic End-Points in Plant and Animal Systems.	Chair/Assoc. Prof., Biology Dept., Alcorn State Univ., Lorman, MS
Chuckwuma, Franklin	August 1997	Bioaccumulation of Cadmium and Lead in Turnips, <i>Brassica campestris rapifera</i> .	Associate Professor, Alcorn State Univ., Lorman, Mississippi
Lawson, Kathia D	August 1997	The Effects of Methyl-Mercuric Chloride Intoxication on the Cerebellum of the Rat Brain.	Research Fellow, University of Mississippi Medical Center, Jackson, MS.
Mbonifor, John N	August 1997	Polyamine Protection Against Chemically-Induced Hepatotoxicity	Associate Prof/Director of Env. Science Program, St. Paul College, Lawrenceville, VA
Patlolla, Anita K	August 1997	Effects of Wastewater Pollutants on Genetic End-Points in <i>Vicia faba</i> .	Research Assistant Professor, Jackson State Univ.
Rush, Barbara O.- Showi, Francis	August 1997 May 1998	Effects of Elevated Carbon Dioxide and Water Deficit on Cotton Plant. Model Analysis of Ground Water Nitrate Contamination in the Mississippi Delta.	Environ. Scientist - Energy Division MS-DECD Associate Professor, Mississippi Valley State University, Itta Bena, Mississippi
Williams, Voletta	May 1998.	Evaluation of the Effects of Dioxin On the Survival, Nuclear DNA, Protein Synthesis, and Photo Synthetic Activity of <i>Chlorella vulgaris</i> .	Associate Professor, Alcorn State University, Lorman, Mississippi
Wilson, Frederick	May 1998	Use of GIS and Remote Sensing to Study the Effects of Land Use/Land Cover Change on the Environment of the Mississippi Gulf Coast.	Research Scientist, NASA Research Project, Morgan State University.
Leggett, Sophia	August 1998.	Effects of Osmoregulation on the Physiology of 3 Microalgal Species.	Assistant Professor, Jackson State University,
Poovala, Vandan	August 1998.	Effects of Organophosphate Insecticides Acephate and Bidrin at the Cellular and Genetic Levels	Study Director, Toxikon Corporation, Bedford, Massachusetts
Boles, Raymond E	May 1999	Developing a Community-Based Rapid Watershed Assessment Protocol Focusing on the Sibun River Watershed in Belize as a Case Study	Associate Professor, University of Belize
K a m b h a m p a t y , Murty	May 1999	Phytoremediation of Lead-Contaminated Soils using Morning Glory (<i>Ipomoea lacunosa L.</i>)	Associate Professor, Southern University of New Orleans, Louisiana
Butler, Margarete	August 1999	Relationship of Soil-Lead to House Dust Lead in 2 City Neighborhood in Jackson	Environmental Specialist, City of Jackson, Mississippi
Ghosh, Susmita	May 2000	A Search for Lead Hyperaccumulating Plants and Laboratory Investigations Toward Enhancing Lead Uptake	Post Doctoral Research Associate, Carnegie Mellon University, Pittsburgh, PA
Spencer, Hattie	May 2000	The Effects of Tetrachloroethylene on the Growth and Development of Early Life Stages of the Japanese Medaka (<i>Oryzias latipes</i>)	Assistant Professor, Department of Natural Sciences, Mississippi Valley State University
Dorsey, Wanneene	August 2002	Endocrine-Disrupting Activity and Molecular Responses in Channel Catfish (<i>Ictalurus punctatus</i>) Hepatocytes, and Human Liver Carcinoma Cells Exposed to Pentachlorophenol	Associate Professor, and Director of Environmental Biology Program, Grambling State University, LA
E v a n s - G r a h a m , Barbara	May 2003	Cellular and Molecular Mechanisms of Action of Arsenic Trioxide on Skin Cell	Post-Doctoral Research Associate, Stem Cell Research, Purdue University Medical Center, IN
Ndebele, Kenneth	May 2003	Modulation of Immune System by Xenoestrogens: Mechanisms of Coumestrol-, Bisphenol-A-, DDT-, and TCDD-Induced Toxicity in Jurkat T Cells	Post-Doctoral Research Associate, Cancer Immunology Research, Harvard University Medical Center
Yates, David	May 2003.	A Field Analysis of 3 Types of HVAC Filters to Determine Filter Efficiencies for Respirable and Total Particulates.	Environmental Safety Officer, NASA Stennis Space Center, Mississippi
Sutton, Dwayne	August 2003	Cellular and Molecular Mechanisms of Toxicity, Mitogenicity, and Carcinogenicity of Mercury in Human Liver Carcinoma Cells.	Assistant Professor, Biology Department, Jackson State University, Mississippi
Forde, Gareth	August 2003	Computational Studies of Methylation in Isolated and Paired Nucleic Acid Bases	Post-Doc Research Associate, Comp. Chemistry Research, Mont Sinai Medical Center, New York
Washington, Teresa	May 2004.	The Cellular and Molecular Mechanisms of Iprodione Toxicity in Human Liver Carcinoma Cells	Post Doctoral Research Associate, John Hopkins Medical Center, Baltimore, MD.
Shumaker, Ketia	May 2004.	Heavy Metal Uptake: Translocation and Bioaccumulation Studies of Three Potential Phytoaccumulators in Contaminated Dredged Material.	Assistant Professor, Western Alabama University, Lexington, AL
Hill, Dagne	August 2004	The influence of Non-Point Source Pollution and Animal Waste on Water Quality and Human Health	Assistant Professor, Grambling State University, Grambling, Louisiana
McPherson, Dorris	May 2005	QHazard Assessment of Computer e-Waste	

CHEMICAL MATERIALS COMPUTATIONAL MODELING (CMCM) PROGRAM NETS HUGE IMPACT

gaining DoD funding in August, 2004, including establishing a collaborative, multi-disciplined and integrated research and education program, focusing on biomolecular and computational studies of warfare agents and structurally-related compounds.

CMCM provides a stimulating research program for faculty and students to understand how science enhances the performance,

economic detoxification and binding systems of harmful biological/chemical agents. The key focus is on the quality and breath of the faculty, academic programs and scientific research. Strong emphasis is on activities which support professional networking. Three faculty members receive support to implement research projects- Dr. Jerzy Leszczynski of the Chemistry Department and environmental scientists Dr.

Paul Tchounwou and Dr. Huey-Min Hwang.

Another major focus of the project is student development. Academic enrichment activities, research participation, science/career awareness forums and national laboratory appointments have been implemented. Support is also provided for three Ph.D. candidates
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IMPACT OF THE COMPUTATIONAL CENTER FOR MOLECULAR STRUCTURE AND INTERACTIONS (CCMSI) AT JSU



Dr. Jerzy Leszczynski with Nobel Laureate and research collaborator Dr. Jerome Karle

In 1998, the Computational Center for Molecular Structure and Interaction (CCMSI) was established at JSU. It has been supported through the Centers for Research Excellence in Science and Technology (CREST) program, which is funded by NSF. Eight faculty members from three Departments and two Universities (JSU and University of California at Berkeley) are currently involved in the Center's project.

The research covers many areas of computational chemistry ranging from development of new methods to applications in molecular biology and material science. The existence of the CCMSI has influenced many areas of research and education in Mississippi. Among the accomplishments of the CCMSI are the fostering of collaboration among faculty members from different universities, high scientific output, and international recognition. More than 20 international scientists and undergraduate and graduate students visit members of the CCMSI each year. There are at least 20 research papers published every year as a result of interactions between international researchers and JSU scientists.

The CCMSI has organized a series (13 meetings) of international annual conferences on Current Trends in Computational Chemistry (CCTCC), which attract almost two hundred participants each year from around the globe. In addition, in March of 2001, the CCTCC initiated the First Southern School on Computational Chemistry (SSCC) which included formal lectures from two experts in computational chemistry from the University of California at Berkeley



Nobel Laureate and JSU CREST external advisory board member Dr. Herbert Hauptman at a CCMSI annual conference.

and Michigan State University. Shorter talks were given by CCC scientists and other senior researchers from the southeastern part of the US as well as poster presentations by students. Five successful Schools have been organized since 2001.

From 1998 to the present, the Center has been cooperatively involved in the organization of a number of international conferences including a workshop on Large-Scale Scientific Computation in 1999 in Bulgaria, the First and Second Southern Conference on Computing (1998 and 2000 in Hattiesburg, MS), the International Conference on Elementary Processes in Molecule-Metal Surface Interactions (San Juan, Puerto Rico) in 2000 and 2003, Polish-American workshop "Introduction to Molecular Modeling" hosted (May 2002) in Wroclaw, Poland, the workshop on "Modeling Interaction in Biomolecules" September 15-20, 2003 in Nove Hradky, Czech Republic, and Modeling and Design of Molecular Materials in Wroclaw, Poland.

Two JSU Ph.D. students attended the Polish-American workshop in 2002, six students (three from JSU and three from other HBCU institutions) attended the Czech workshop in 2003 and also six students participated in the conference organized in 2004 in Poland. During the last three years six JSU Ph.D. students spent four weeks each at the Technical University of Wroclaw, Poland, and two spent an additional week at the Charles University in Prague, Czech Republic.

The Center maintains international visibility by its involvement in editorial activities. It includes a book series: *Computational Chemistry: Reviews of Current Trends*, special *THEOCHEM* and *The International Journal of Quantum Chemistry* issues are devoted to the CCTCC conferences and *SSCC* issues of the *Structural Chemistry*. In addition, for four years (2000-2003) the center maintained the editing of the *International Journal of Molecular Sciences*, a WEB-based journal established in 2000. Currently the Center has established a new book series: *Challenges and Advances in Computational Chemistry (Plenum)* and in 2004 started editorial activities of *Structural Chemistry*.

Education is a big part of the efforts of the CCMSI. Almost all of the graduate students enrolled in the JSU Ph.D. program since 1999 are using computational chemistry as their research tool and several undergraduates are involved in computational chemistry research as well. Five students supported by the Center obtained Ph.D. degrees, and currently more than ten Ph.D. students are advised by the Center's faculty. Many of the CCMSI students

received national and international awards including two awards to participate in the Nobel Laureates' meetings in Germany in 2002 and 2004. Some of this research is being done in collaboration with the CCMSI members from other institutions. This creates a unique opportunity for students from JSU to be involved in a variety of projects and to be trained by a larger group of faculty with diverse backgrounds.

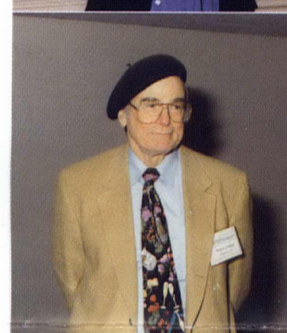
CCMSI members are also working closely with undergraduate students and faculty members from Tougaloo College, and at least four of these students are involved in collaborative projects and year-around research activities. Therefore, the Center significantly contributes to the education of minority students at both the graduate and the undergraduate levels.

The impact of the Computational Chemistry Center goes far beyond Mississippi. An annual Summer Institute in Computational Chemistry was established at JSU in 1999. It brings to Mississippi 12-16 students and faculty members from undergraduate minority institutions in the USA and allows them to learn computational chemistry techniques and to apply advanced computational methods in collaborative research projects. Every year a group of international researchers, graduate and undergraduate students visits members of the CCMSI to participate in the Center's research and training activities. Such activities add an international dimension to the Center's program.

The Center has been recognized as a national and international leader in computational chemistry. Over the last four years the members of the Center published 50-60 papers per year in the leading international peer-reviewed journals (For 2003-2004, 64 research papers and 101 conference presentations) in addition to over 50-90 presentations at national and international conferences. International recognition for the research performed at JSU is supported by the fact that the papers published by the members of the Center are cited in the scientific literature about 1000 times per year. Many of these papers and presentations are coauthored by undergraduate and graduate students. Seven books and ten special issues of international journals have been edited by the CCMSI faculty. Additionally, 21 grants (\$1.9 Million), in addition to \$900,000 per year NSF Center's support was secured in 2003-2004.

The CREST Center is funded by the National Science Foundation, Grant # HRD-0318519. Dr. Jerzy Leszczynski, President's Distinguished Professor of

Chemistry, is the Project Director for the Center. For Further information, contact the Center Manager, Ms. Shonda Allen, at 601-979-3723.



Distinguished presenters at CREST sponsored conferences: (From the top: Dr. William Miller, University of California Berkeley; Dr. Peter Rossky, University of Texas at Austin; Dr. William Goddard, Charles and Mary Ferkel Professor of Chemistry, Materials Science, and Applied Physics, California Institute of Technology; Dr. Andrzej Sadlej, Nicholas Copernicus University, Poland; Dr. David Buckingham, Cambridge University; Dr. Okamoto, Institute for Molecular Science, Japan.

NATIONAL INSTITUTES OF HEALTH RCMI-CENTER FOR ENVIRONMENTAL HEALTH

A CATALYST FOR BIOMEDICAL RESEARCH EXCELLENCE AT JSU

In recent years, financial support from the National Institutes of Health through the RCMI-Center for Environmental Health has had a tremendous impact on the development of biomedical research and training at Jackson State University (JSU). Initiated in July 1998, the RCMI Program at JSU has received continuous support from the NIH and has served as the impetus for development of the excellent biomedical research infrastructure and training of biomedical scientists and human resources at JSU. The primary goal of the RCMI Center is to foster biomedical research and to increase the research competitiveness of the faculty.

The most important success of the RCMI-Center for Environmental Health has been the commitment to develop biomedical research programs at JSU. This has translated into a substantial institutional investment of resources in recruitment and development of faculty, support for biomedical research expansion,

and improvement of academic offerings. JSU is now classified as a doctoral research-intensive university by the Carnegie Classification, and offers nine doctoral programs. Two (Chemistry and Environmental Science) are in the College of Science, Engineering and Technology (CSET).

Over the years, the Center has helped tremendously to foster an enhanced biomedical research infrastructure and to serve as a conduit for maintaining a substantial pool of highly-skilled professionals in biomedical research.

The Center has developed several multi-user core research facilities, including the Cellular and Molecular Biology Core Laboratory, Analytical Core Laboratory, Animal Research Core Facility, Radioactive Materials Core Facility, Molecular Magnetic Resonance Core Laboratory, and Biostatistical Support Unit. These laboratories have been equipped with specialized equip-

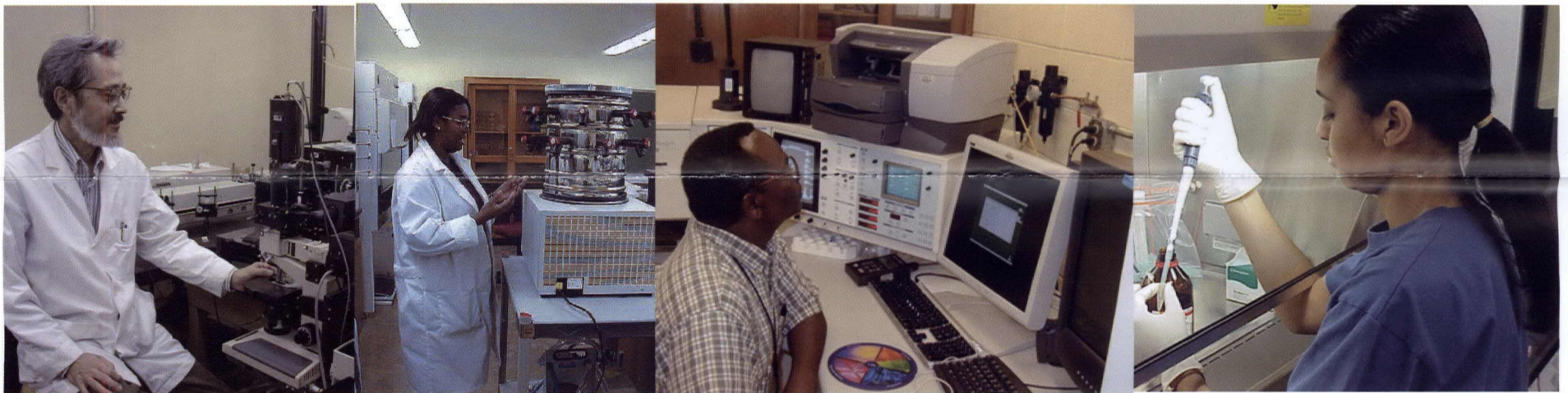
ment for biomedical research and serve as a venue to strengthen multidisciplinary biomedical research collaborations among JSU faculty and scientists from other institutions of higher learning. RCMI-supported resources from NIH and other federal agencies have also leveraged additional core facilities including the Cellomics and Toxicogenomics Research Laboratory, Computational Sciences Core Laboratory, and the Transmission Electron Microscopy Laboratory.

In human resources, the Center has helped to recruit three junior faculty, two of whom have recently been promoted to the rank of associate professor. Research conducted at the Center has also provided an excellent opportunity for biomedical research training to a significant number of undergraduate and graduate students. Ph.D. students trained through the Center have gone on to obtain post-doctoral research positions at prestigious institutions, including Harvard University Medical

School, Boston, MA; John Hopkins Medical School, Baltimore, MD; Mount Sinai Medical School, New-York, NY; and Perdue University Medical School, Indianapolis, IN.

Overall faculty productivity has increased by almost 200% in the relevant areas of grantsmanship and biomedical research publications in peer-reviewed journals. "As the program progresses, faculty are more and more prepared to compete for grants, publications, honors, and to become involved in the planning and implementation of major biomedically-related scientific meetings," says Deputy Director, Dr. Paul Tchounwou.

The RCMI Center for Environmental Health is funded by the National Institutes of Health National Center for Research Resources Research Centers in Minority Institutions grant number G12RR13459. For further information, contact Ms. Carolyn Fletcher, Program Manager, at 601-979-3448.



Specialized multiuser core research facilities are accessed by student and faculty researchers.

HIGH PERFORMANCE COMPUTING VISUALIZATION INITIATIVE (HPCVI) HAS MAJOR IMPACT IN STRENGTHENING JSU RESEARCH INFRASTRUCTURE

The DoD High Performance Computing Modernization Program (HPCMP) has invested significant resources in the infrastructure at two Major Shared Resource Centers (MSRC). These include scientific visualization, high speed networks, distance learning and technology transfer through academic partnerships.

The HPCVI addresses DoD challenges of the future and pays huge dividends in numerous ways: increased knowledge in science and engineering disciplines; the enhancement of the research infrastructure at JSU; the diversity of the workforce; research publication in peer-reviewed journals; presentation of research results at national and international conferences; research training for minority students at DoD laboratories; and collaboration among JSU researchers and scientists at DoD laboratories.

The primary focus of HPCVI is to align academic resources and expertise at the three participating institutions--Jackson State University, Mississippi State University and the University of Southern Mississippi--with DoD research and training needs in the areas of: Architectures, Infrastructure and Methodologies for Advanced Computation Environments; Architectures, Infrastructure, and Methodologies for Management and Analysis of Distributed Data; Domain-Specific Data Analysis; Domain-Specific Computation and Modeling; and Human Factors and Usability Issues in Computation and Data-Rich Environments.

Major emphasis is on faculty and student development including upgrading the quality and breath of the faculty to enhance academic programs and to foster scientific research. Five faculty members are supported to implement research

projects. They are: Dr. M. Manzoul, Computer Engineering; Dr. Heping Liu, Physics, Atmospheric Science & General Sciences; Dr. Jerzy Leszczynski, Chemistry; Dr. Qutaibah Malluhi, Computer Science; and, Dr. Cynthia Ford-Hardy, Psychology.

Academic enrichment activities, research participation, science/career awareness forums and national laboratory appointments have been implemented. Two Ph.D. candidates, five M.S. candidates

and nine undergraduate students receive HPCVI support to assist with faculty research.

HPCVI is supported by a \$1,900,000 grant from the U.S. Department of Defense through the U.S. Army Engineering, Research and Development Center. Dr. Abdul Mohamed is the Principal Investigator for this Initiative. For more information contact Shelton Swanier, Project Manager at sswanier@jsums.edu.



A Staff member demonstrates the JSU's virtual reality system known as the Rave cave.

CSET INCREASES CORPORATE INVOLVEMENT

Jackson State University (JSU) and the Northrop Grumman Corporation signed a memorandum of understanding (MOU) Monday, Dec. 6, 2004. The agreement affords JSU students career development and employment opportunities through programs such as engineering, business, computer science, accounting, psychology, human resource management, information technology, quality assurance and logistics. It also includes the involvement of JSU faculty in mutually acceptable cooperative research and summer employment programs, scholarship opportunities, and more.

In the School of Engineering, a Northrop Grumman Professor of Engineering position and a scholarship fund have been established. Dr. Shahrouz Aliabadi was appointed to the Professor of Engineering position

in January of 2005 and he will serve as Director of the JSU Center for High Performance Computing of Ship Systems Engineering which is being established at the Mississippi e-Center at JSU.

Both JSU President Ronald Mason and Philip A. Dur, President of Northrop Grumman Ship Systems had strong words of praise for the agreement. "This MOU is a partnership between the largest employer in the state and the largest university in the metropolitan capital city area," said JSU President Ronald Mason, Jr. "Its potential for both knowledge and workforce development is unlimited. It is a true effort at forming the kind of partnerships that will move Mississippi forward."

"Fostering opportunities within Mississippi's higher-education system builds partnerships that can



JSU President Dr. Ronald Mason, Jr. and Northrop Grumman Ship Systems President Philip A. Dur shake hands after signing a memorandum of understanding

lead to success on many levels," said Philip A. Dur, president of Northrop Grumman Ship Systems.

Dr. James Perkins, Director of the CSET Office of Research, Industrial, and Community Relations serves

as the Cooperative Agreement Program Manager (CAPM). He can be contacted at 601-979-2024 or james.perkins@jsu.edu.

JSU PARTNERS WITH GAS TECHNOLOGY INSTITUTE (GTI)

The Gas Technology Institute (GTI) entered a Memorandum of Understanding with Jackson State University and other minority institutions (Alcorn State University, CA State University-Fullerton, CA State University-San Bernardino, Dillard University, Fisk University, Florida International University, North Carolina Central University, South Carolina State University, Tennessee State University, and Tuskegee University) in 2003.

The purpose of the collaboration is to enhance educational and research opportunities among students, faculty and alumni of minority colleges and universities in

energy-related fields of interest to the natural gas industry. GTI and partner institutions are working to increase the number of qualified, eligible candidates seeking scientific and engineering employment opportunities in the natural gas and related energy industries.

GTI offers a 10-week Energy Industry Internship at its Des Plaines, IL facility beginning in June and ending in August of each summer. Students selected to participate in the program are paid between \$10 and \$14 per hour. In addition, selected JSU students receive a \$500 travel stipend if they are not residents of the Chicago area. Included

are free housing accommodations and daily transportation to and from GTI's Des Plaines, IL facility. During an annual summer workshop, students share their accomplishments with university, government and industry representatives via oral and poster research presentations.

GTI research areas include: Distribution and Pipeline Technology; Gasification and Gas Processing; Energy Utilization; Distributed Energy Applications; Hydrogen Energy Systems; and, Exploration and Production.

With approximately \$500,000 financial support provided by GTI, 32 undergraduate and graduate stu-



JSU student intern at GTI

dents (12 in 2003 and 20 in 2004) received invaluable research experiences relevant to the natural gas industry.

Contacts: Shelton Swanier, JSU, 601-979-2312 Paul Reneau, GTI, 847-768-0780

PHYSICS, ATMOSPHERIC SCIENCES AND GENERAL SCIENCES



Chairman Williams (far left); Dr. Heping Liu (second from left) and other members of the Department join Dr. Fadavi (far Right) in viewing the new telescope.

With a grant from the U.S. Department of Education, JSU upgraded the observatory by purchasing a Celestron 14" telescope with automated capability synchronized with the 360 degree dome and a STL-1001E-CCD camera to record digital images.

A companion program, Project NGTN—Next Generation Tele-

scope Network—will provide a state-of-the art system of software, servers, SML protocols and network middleware connecting the large array of robotic telescopes to one another and linking them to the National Virtual Observatory.

The underlying goal of the NGTN is to broaden the quality of NSF astronomical research, par-

ticularly among traditionally underserved populations.

The state-of-the-art observatory will network with others all over the world: Australia, South Africa, England, France, Chile, Ireland and China, as well as the US. In the first test, Dr. Fadavi requested an image by contacting an Australian counterpart. This marked the first time that Mississippi had access to the southern hemisphere exactly as the Southerners experience it. "Within two or three minutes, we were connected live to the skies of the southern hemisphere," said Dr. Fadavi. "There is no border, just access to everything," she enthusiastically concluded.

The new observatory has even more exciting possibilities for secondary students. "What I would like to have happen when we have it in place is to bring students here from all over the state and have them see both the daytime and the nighttime

sky. This, she says, will get them interested in science. One of Mississippi's major goals is improving science literacy.

The JSU program is on target to become part of the Hands-on Universe, a national collaboration. JSU will also become part of SkyCalls, a group of collaborators from Florida and California, who work together preparing lesson plans that are distributed to teachers and others. These collaborations involve parents, students and teachers."

The program will also include an Astronomy Café. The café, located in Just Hall of Science, will be connected to the observatory and will feed astronomical knowledge to students in a café atmosphere. It will provide models, instructional materials and programs for teachers, students and community members.

JSU PLAYS A MAJOR ROLE IN THE SUCCESS OF THE ARMY HIGH PERFORMANCE COMPUTING RESEARCH CENTER (AHPERC)

The Army High Performance Computing Research Center (AHPERC) is a Government-University-Industry partnership committed to helping maintain the Army's lead in HPC research and providing future generations with the advanced tools and training they will need. Funding of the AHPERC is provided by the U.S. Army, with funding for major equipment provided by the DoD High Performance Computing Modernization Program. (The AHPERC partners include Clark Atlanta, Florida A&M, Howard and Jackson State Universities, the University of Minnesota, the University of North Dakota and Network Computing Services, Inc.)

The objectives of the Center are to provide training in the use of high performance computing (HPC) and to prepare students for graduate studies in technology areas dependent upon HPC.

JSU has played an important role in the success of the Center since

joining the AHPERC team in 1989. Currently five JSU faculty members, along with research fellows, graduate and undergraduate students, are involved in research projects in the following topic areas:

Fine Scale Modeling and Product Generation for Visualization of Dynamics and Phenomena

Chemical/Biological Defense

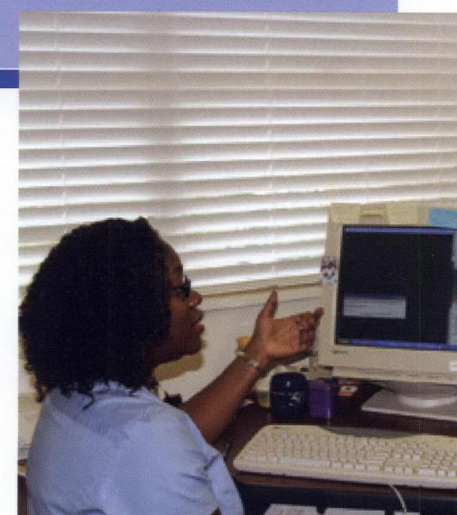
Environmental Quality Modeling

Nanotechnology

During the period 1997-2001, Dr. Leszczynski was a Team Coordinator for the Environmental Science program at AHPERC. He led an interdisciplinary group of researchers from Clark Atlanta, Florida A&M, Jackson State University, the University of Minnesota and the University of North Dakota. They devoted their research activities to computational simulations important for national defense.

Among the research projects carried out in this portfolio are: simulations of properties and structures of nerve agents and their interactions with soil and proteins. Quantum chemical calculations of reactions of nerve agents with nano-size particles of metal oxides allow researchers to propose efficient processes for their decomposition. In addition, computer models were used to predict propagation of chemical and biological agents in atmosphere.

AHPERC facilities at JSU include a computer laboratory consisting of NT workstations, an IBM RS/6000 SP, and a CRAY SV1ex. In addition, JSU AHPERC researchers have direct access to other AHPERC resources including a CRAY T3E-1200E and other IBM RS/6000 SPs. The AHPERC computational facilities are being constantly upgraded so that team members and students always have access to the state-of-the-art computational



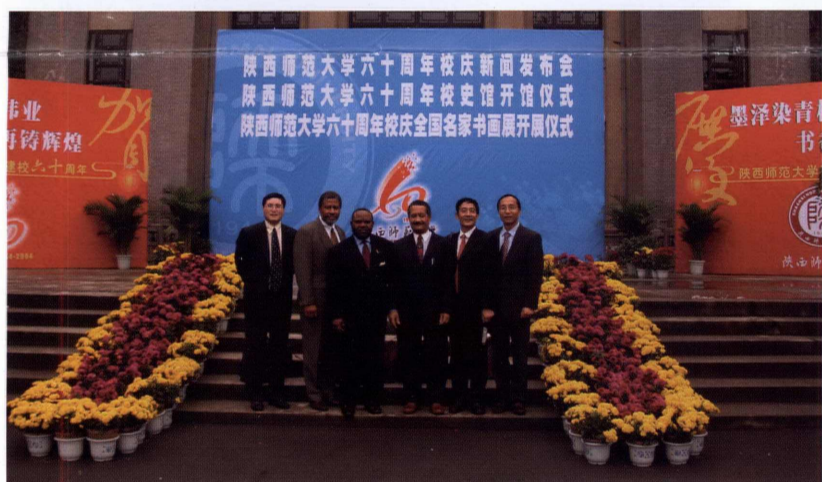
Doctoral Candidate Rasheem goes over work plans for the AHPERC

equipment. Undergraduate science and engineering students from JSU have the opportunity to participate in an annual Summer Institutes at Minneapolis. They obtain training in programming and high performance computing. In addition, they are involved in research projects of the participating faculty members. After graduation from the Summer Institute, the students carry out their research projects at JSU.

Funding for AHPERC is provided by U.S. Army Contract #DAAD19-03-D-0001

CSET INTERNATIONAL COLLABORATIONS

CSET CHINA VISIT RESULTS IN MOU



JSU delegates with the Dean (second from right) of the Chemistry Faculty of the host institution (Shaanxi Normal University.)

A delegation of CSET scientists, led by JSU Vice President for Research, Dr. Felix Okojie, recently spent three weeks in China in a successful effort to build partnerships with five Chinese institutions of higher learning.

In addition to Dr. Okojie, the delegation included CSET Dean, Dr. Abdul Mohamed; Office of Research Director, Dr. James Perkins; Chemistry Department Chair, Dr.

Hongtao Yu; and Shelton Swanier, Director of the Office of Strategic Initiatives - CSET.

The institutions visited were: Central University for Nationalities; Beijing University for Post and Telecommunications; Shaanxi Normal University; Guangxi Normal University and Guangxi University.

Memoranda of Understanding were signed between JSU and each



At Shaanxi Normal University, JSU delegates discuss future working relationships with officials of the host institution.

of the five institutions; however, CSET has the longest standing relationship with Guangxi Normal University. One of the chemistry professors received his training at Jackson State. Following the formal MOU signing, JSU Chemistry Department Chair, Dr. Hongtao Yu, gave a research seminar to approximately 100 students. The MOU creates faculty exchange in chemistry and other sciences; graduate stu-

dent training; joint proposal development and possible collaborative research projects.

"This is a significant MOU for us and for the Chinese institutions," said Dean Mohamed, "because we are building their capacity as research institutions and strengthening their administrative capacity, while building our own capacity as an international resource."

JSU SPONSORS INTERNATIONAL MODELING WORKSHOP IN POLAND

JSU recently co-organized a Modeling and Design of Molecular Materials workshop with Wroclaw University of Technology (WUT) in Wroclaw, Poland, and Charles University of Prague, Czech Republic.

This meeting was attended by 97 participants from 12 countries (Czech Republic, Finland, France, Italy, Japan, Mexico, Poland, Russia, Slovakia, Ukraine, UK and USA) and was devoted to modeling,

design and synthesis, and testing of new molecular materials using molecular biology, medicinal chemistry, materials science and nanotechnology techniques. Four students, previously distinguished at JSU's 2004 Summer Institute, were in attendance: Ilsa Cordova-Saez, Jason Ford-Green, Tiffany Holmes, Mary La'Frances-Williams. Two JSU graduate students (Teri Robinson and Tomekia Simeon) went to

Wroclaw to engage in research and training. The concluding lecture was delivered by Dr. Glake Hill of the JSU Department of Chemistry.

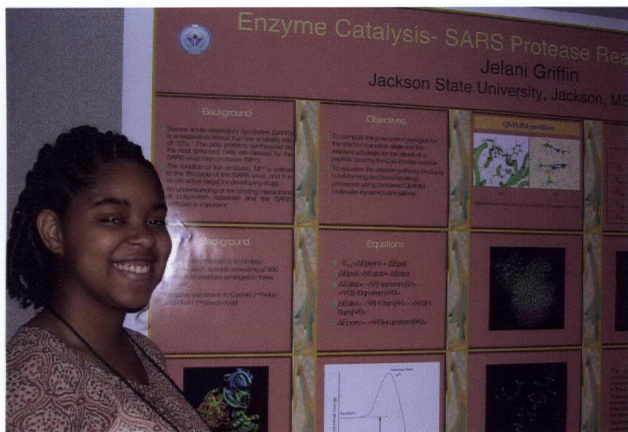
Undergraduate and graduate students participated in poster contests where 15 presentations were awarded prizes and distinctions. Winners included Teri Robinson, Tomekia Simeon and Mary La'Frances Williams from JSU.

The conference was sponsored by WUT and JSU's Office of Research and Development and Support and Federal Relations and was held from September 16-20, 2004.

A detailed conference program, list of posters and photographs from the meeting may be retrieved from the website at <http://mml.ch.pwr.wroc.pl/workshop/gal>

CONFERENCES

LSMAMP HOLDS FIRST STATEWIDE RESEARCH SYMPOSIUM



Cohort Two Bridge to the Doctorate student, Jelani Griffin, gives her poster presentation



Cohort One Bridge to the Doctorate student, Tomekia Simeon, receives the award for best Oral Presentation from National Director, Dr. A. James Hicks

The Louis Stokes Mississippi Alliance for Minority Participation program held its first statewide research symposium October 22 and 23, 2004. The major objective of the symposium was "to showcase faculty- mentored undergraduate student research and the Bridge to the Doctorate students and to foster the leadership and professional development of LSMAMP students, staff and other professionals to positively impact the workforce and academic pipeline," according to Dr. James Perkins, director of the statewide program and coordinator of the symposium.

The 10 JSU Bridge to the Doctorate students showcased their research in the form of both oral and poster presentations at the two-day event. "Presenting at conferences such as

this gives us confidence to present in any arena," said Bridge scholar Charity Mosley. Students were also able to interact with professional scientists during the event.

The conference included special presentations by LSAMP Program Director, Dr. A. James Hicks and noted cell biologist, Dr. Eloy Rodriguez, who delivered an inspirational keynote address with anecdotes about the many minority students he has mentored. He has spent his entire career mentoring young minority students in science. Dr. Rodriguez is the James A. Perkins endowed Professor of Chemical Biology and Tropical Drug Discoverer from Cornell University in Ithaca, New York.

Over 300 students and mentors from across the state attended the

event held at the Jackson State University e-Center.

Co-sponsors of the symposium included the Research Initiative for Scientific Enhancement (RISE) and Science and Technology Access to Research and Graduate Education (STARAGE). The RISE program is funded by the National Institutes of Health and both STARAGE (HBCU-UP) and LSMAMP are supported by the National Science Foundation.

Dr. Perkins said, "The conference was an important vehicle for all of the state's students. We were very pleased with the conference, the quality of the student presentations and the level of participation and networking. We will continue to do this annually.

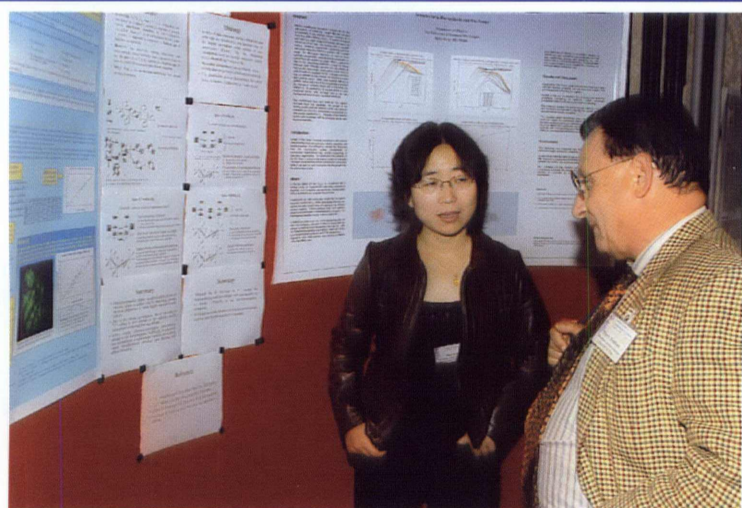
The Bridge to the Doctorate Program is funded by NSF through grant #HRD 0115807



Cohort Two Bridge to the Doctorate student, Shaneka Simmons, goes over her poster with fellow Bridge student, Mekel Richardson

The 2nd annual Research Symposium will be held on October 20-22, 2005. Call 601-979-2024 for more information.

13TH CONFERENCE ON CURRENT TRENDS IN COMPUTATIONAL CHEMISTRY



Dr. Pierre Bonifassi of the Laboratoire Synthese Organique, France, listens to a poster presentation.

For the thirteenth time, Jackson State University (JSU), in collaboration with the Engineer Research and Development Center (ERDC), held a Conference on Current Trends in Computational Chemistry (CCTCC). The CCTCC took place on November 12-13, 2004, in Jackson, MS at the Hilton Hotel. It has become an important international event. Jerzy Leszczynski (JSU), Chairman of the Organizing Committee and a leader of the

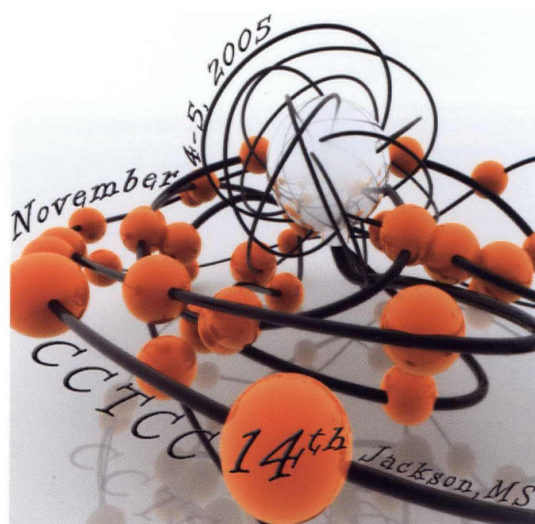
AHPCRC Environmental Sciences Research Team, has been organizing this event since it was initiated in 1991; and he has seen it grow from a small workshop to a major international conference attended in 2004 by over 250 scholars from nineteen different countries.

During the conference proceedings, there were three poster sessions and over 10 talks from various distinguished lecturers.

Speakers included Peter Pulay, University of Arkansas, USA; Grzegorz Chalasiński, University of Warsaw, Poland; and Lars G.M. Pettersson, University of Stockholm, Sweden.

The major thrust of the conference is to bring together researchers working in the rapidly changing

field of computational chemistry and to allow for the exchange of new scientific ideas. The 13th CCTCC included scientific presentations that reported results and ideas of contemporary research from major international and computational quantum chemistry groups.



The 14th annual CCTCC will be held on November 3-4, 2005, at the Jackson Hilton Hotel, Jackson, Mississippi. For more information visit <http://cctcc.ccmsi.us/>.

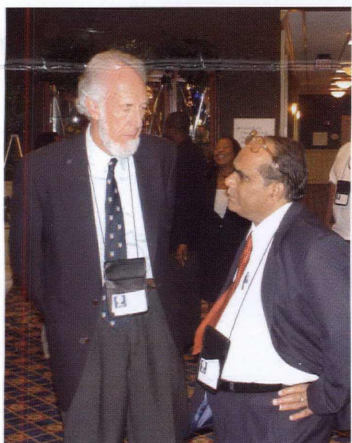
CONFERENCES

First International Symposium on Recent Advances in Environmental Health Research



Dean Abdul Mohamed (left); Dr. Sidney McNairy-Associate Director of the NIH-NCRR and Dr. Paul Tchounwou, Professor and Symposium Chair.

Jackson State University (JSU) hosted the "First International Symposium on Recent Advances in Environmental Health Research" at the Marriott Hotel in Jackson, Mississippi, from September 19 through September 22, 2004. This important event was the first World Congress held in Jackson, MS, USA, on important issues related to environmental quality and human health. Its overarching objective was to promote interdisciplinary discussions and international scientific collaborations, as well as to



Dr. Ian Falconer (left), Prof. at the Univ. of Adelaide Medical School, Australia and Dr. Yerramilli, Director of the Institute for Science and Technology, India.

advance the participants' understanding of local, regional and global environmental issues as they relate to the quality of life and human health. In an attempt to contribute global solutions to these environmental challenges, scientists around the world have become more and more involved in bioenvironmental research, in studying the toxic mechanisms of action of various environmental agents, in developing new approaches for detecting

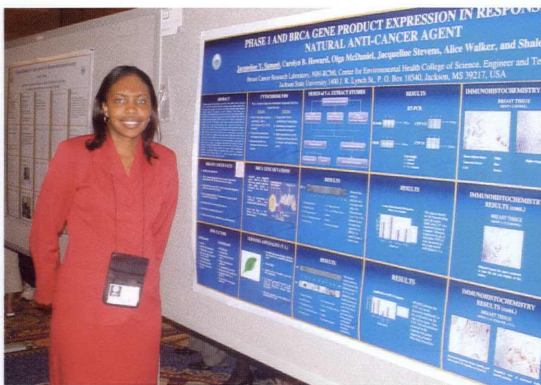
or remedying environmental damage, identifying and characterizing genes involved in the manifestation of environmentally-related diseases, and in providing the public and policy-makers with scientific tools that are critical for environmental health decision-making.

Critical environmental and human health topics included: New Frontiers in Environmental Health Research, Environmental Toxicology and Health Risk Assessment, Emerging Topics in Computational Biology and Environmental Modeling, Health Disparities and Environmental Security, Medical Geology and Human Health, and Natural

Resources Damage Assessment and Management.

The symposium attracted more than 300 participants from 21 countries representing all five continents. There were more than 150 scientific presentations across the disciplines of environmental health and biomedical sciences.

Dr. Sidney McNairy, Associate Director of the National Center for Research Resources at the National Institutes of Health served as the



Ms. Jacqueline Samuel, Biology graduate student at JSU, presenting her work at a poster session.

First Distinguished Speaker for the Honorary Biomedical and Health Information Lecture Series" at the symposium. He presented a distinguished lecture on the issue of human environment and health disparities and pointed out the critical role that institutions such as Jackson State University should play in addressing these issues. Congressman James E. Clyburn of South Carolina spoke eloquently on the critical issue of environmental justice.

Major symposium sponsors included the U.S. Department of Education Title III-Strengthening the Environmental Science Ph.D. Program at JSU; National Institutes of Health RCMI-Center for Environmental Health; JSU Office of



Dr. Murali V. Krishna (left), Head of the Center for Spatial Info. Technology at JNTU in India and Dr. Suseela Reddy, Associate Professor of Meteorology at JSU.

Research Development and Federal Relations, the U.S. Environmental Protection Agency and the JSU Chemical Materials Computational Modeling Program. The National Library of Medicine (NLM) supported the successful organization of the pre-symposium workshop on the "NLM's Toxicology Network and Environmental Health Information Databases".

The "Second International Symposium on Recent Advances in Environmental Health Research" will be held, September 18- through September 21, 2005 at the Marriott Hotel in Jackson, Mississippi. It will be dedicated to celebrating the 20th Anniversary of the National Institutes of Health NCCR-Research Centers at Minority Institutions Programs. Go to <http://www.jsums.edu/~sst/SYMPOSIUM/> for more information.

Dr. Quinton Williams Elected President of the National Society of Black Physicists

Dr. Quinton Williams, Chair of the Department of Physics, Atmospheric Science and General Science (DPASGS), was elected President-elect of the National Society of Black Physicists at its annual conference in Orlando, Florida, held from February 16-19, 2005. The conference is the world's largest gathering of Black and Hispanic physicists and physics students. The 3-day scientific program consisted of 140 talks in over 40 sessions. The topics included optics, medical physics, nuclear physics, condensed matter and materials physics, string theory, astronomy and astrophysics, environmental physics and plasma physics.

Dr. Williams will begin serving as President after next year's conference. He will be working to fulfill the purpose and mission of the Society which includes:

to promote the professional well-being of African American physicists within the international scientific community and within society at large

to develop and support efforts to increase opportunities for African Americans in physics and to increase their numbers and the visibility of their scientific work

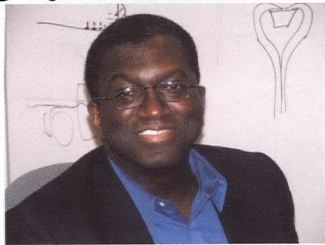
to develop activities and programs that highlight and enhance the benefits of the scientific contributions that African American physicists provide for the international community, and

to raise the general knowledge and appreciation of physics in the African American community.



Beneia Ruttenburg (pictured second from left next to Dr. Williams) was also honored at the National Society of Black Physicists conference. She received first place for Best Student Research Paper from The International Society for Optical Engineering.

Gregory Williams, Ph.D.



(JSU Class of 1979) once designed intercontinental ballistic missiles. Now he is using his physics background to open the lines of communication in the world community. "Right now I'm overseeing strategic planning for the Advanced Materials Processing Laboratory," he says of his second tenure with Corning Industries.

Dr. Williams, elder brother of Physics Department Chairman, Dr. Quinton Williams, received his M.S. in Physics from the Massachusetts Institute of Technology (MIT) in 1983 and his Ph.D. in Electrical Engineering from Cornell University in 1986.

He first worked as a technical scientist for the Star Wars program. "As well as using this technology for defense, we could also use it for offense. So I decided internally that I wanted to do something more beneficial to mankind." He came to telecommunication at the right time. It was his team that made the first underwater products that enabled cross-Atlantic high-speed communication.

Dr. Williams says, "The possibilities for young scientists to contribute in telecommunications are limitless. There will be an impact on education, medicine, space, the arts, you name it." Williams owns several patents in his field and is actively involved in giving back to his community. "I came back to Corning, leveraging my experience as an entrepreneur, to see where in the world I can make an impact," he said.

Jimmie L. Williams, Ph.D.



Another Williams brother (JSU Class of 1975) was doing science as a young boy. "I always knew that I wanted to be a scientist. I would buy chemistry sets growing up in the Delta and show off for friends," he laughs.

One of the first students in the Biomedical Research Support Program at JSU, he received his M.S. in Chemistry from Yale University in 1977 and a Chemistry Ph.D. from the University of California at Riverside in 1983 at which time he began working for Corning Incorporated.

Ceramics research is involved in environmental research, mostly on

exhaust emissions from automobiles. "We make substrates to remove diesel exhaust pollutants from diesel engines."

Dr. Williams work is impacting the quality of life around the globe, but there are still major challenges, including reduction of greenhouse gases in the atmosphere, fuel cells for powering automobiles in the future and generating and using hydrogen for power. "We need to have an infrastructure in place so that we can drive up to a place and re-fill our cars with hydrogen."

Dr. Williams' credentials include 18 patents and being awarded the National Society of Black Engineers' Golden Torch for Distinguished Engineer of the Year. He has given lectures around the globe in the area of pollution control.

It all started at JSU "where I had several very good Chemistry teachers," he concluded. He has returned to JSU recently, this time as an expert, to give a lecture to students in the Chemistry Department.

Lisa D. Cain, Ph.D.



a native of Canton, MS, is a former Miss JSU and an Honors College graduate. She received a Bachelor of Science degree in biology in 1984 and in 1989 earned a doctoral degree in anatomy from the University of Mississippi Medical Center, Jackson, MS. She was a postdoctoral fellow in the Department of Anatomy at Robert Wood Johnson Medical School, Piscataway, New Jersey from 1989-90 and in the Center for Advanced Biotechnology and Medicine at the same institution from 1990-1992.

Presently, Dr. Cain is a faculty member in the Department of Neurosciences and Cell Biology at the University of Texas Medical Branch (UTMB) at Galveston. Her research specifically involves investigating agents that increase the survival of spinal cord neurons following spinal cord injury. She is a member of the TIRR Foundation in Houston, comprised of researchers dedicated to spinal cord and brain injury research. She has submitted a NIH Translational R21 Grant which proposes a new therapeutic agent for spinal cord injury.

She has received recognition for community service and is a member of Alpha Kappa Alpha Sorority, Inc. In addition to her academic accomplishments, she is a folk artist whose work is presently exhibited at several galleries throughout the United States and has been exhibited in New York City for the past three

years. Dr. Cain is married to Kim Shandell Smith and they are the parents of two sons, Marcus Percy DeKimbe and Malcolm Xavier Smith.

Walter Rayford, MD, PhD



graduated from JSU in 1983, received his Ph.D. from the University of Kansas in 1987, and his M.D. from their School of Medicine in 1991. He served there as a Post Doctoral Fellow from 1987-1988. From 1998-2004, he served as Assistant Professor, Louisiana State University Health Sciences Center, Louisiana State University School of Medicine in the Department of Urology.

Dr. Rayford is Associate Professor at the Louisiana State University Health Sciences Center and he currently holds the William Boatner Reily Professorship in Urology. He received the American Society for Cell Biology Mentorship Award in May of 2003 and was selected as one of the Best Doctors in New Orleans, La. 2004-2005.

Dr. Rayford is actively involved in research including the following studies: Genetic Studies of Prostate Cancer in an African-American Population, Racial Differences in Prostate Cancer: Influence on Health Care Interaction and Host and Tumor Biology and Health Disparity Research - Prostate Scholar Award.

Hursie Sullivan, MD



graduated from JSU in 1984 with a degree in Chemistry (Pre-Med.) Received a masters degree in Physical Chemistry from JSU in 1987 and went on to Medical School at the University of Iowa. She completed her degree in 1993 and entered residency in Family Medicine at the University of Mississippi Medical Center. When she completed her 3 year residency in 1996 she joined the faculty at UMMC as an Assistant Professor and taught full time for four years at which time she established her current private practice.

She is enthusiastic about her time spent at Jackson State. She says, "My

preparation at JSU was an excellent foundation for my future endeavors. I always wanted to be a doctor but the research experiences I had in school really gave me a springboard into medicine."

Dr. Sullivan is not just involved in medicine. Family and service feature prominently in her life. While at Jackson State, she pledged the Gamma Rho chapter of Alpha Kappa Alpha, known for its service efforts. She is currently serving a two year term as the President of the Mississippi Medical and Surgical Association. She started medical school when her oldest daughter, age 19 now, was just a child and has two other children: a son, age 10 and a second daughter, age 5.

Katrina L. Davis, MD



graduated from Jackson State University, Magna Cum Laude, with B.S. in Biology Pre-Med-May 1990. She received her M.D. from the University Of Tennessee College Of Medicine in Memphis in June, 1994. She completed an OB-GYN Residency at University of Arkansas for Medical Sciences Center in June of 1998. While there she received the Willis E. Brown Prize Research Paper Competition, which is given to the senior resident with the best research project.

Dr. Davis entered private practice for two years and then took her current position as Assistant Professor of Obstetrics and Gynecology at University of Arkansas Medical Sciences Center. In 2003, she received the Association of Professors of Gynecology and Obstetrics Excellence in Teaching Award in 2003. In both 2004 and 2005, she was acknowledged by the senior medical students as a faculty member who had made a significant impact on their education. From January of 2003 through March of 2005, Dr. Davis participated in the Solvay Scholar Program in which 20 junior OB/GYN faculty are selected nationally to participate in an 18 month program in academic and administrative excellence.

Dr. Davis is married to JSU alumnus Dennis A. Davis, Jr., and they have two daughters: Jasmine Denise, born in 1998; and Jada Raquel, born in 2000.

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CHEMICAL MATERIALS

PROGRAM NETS HUGE IMPACT

(Continued from Page 4)

and three M.S. students to engage in research and educational activities.

According to Principal Investigator, Dr. Abdul Mohamed, "CMCM continues to make a major contribution to workforce diversity by educating and training minorities on relevant technologies related to biomolecular and computational sciences as we continue to develop and enhance the research infrastructure here at JSU."

He adds that there is strong collaboration among JSU researchers and scientists at DoD laboratories. Other project outcomes include: knowledge about the cellular and molecular mechanisms of toxicity of selected compounds; identification of specific biomarkers of exposure, sensitivity and effects associated with certain chemical compounds; development of computational models to study the molecular properties of warfare agents

and explosive compounds; research publication in peer-reviewed journals; presentation of research results at national and international conferences; research training for minority students at DoD laboratories; and funding for expanded research activity at JSU.

The project is funded at \$912,000 for the first year by the U.S. Department of Defense (Cooperative Agreement # - W912HZ-04-2-0002) through the Army/Engineering Research and

Development Center, Vicksburg, Mississippi. Dr. Abdul Mohamed is the Principal Investigator for this Initiative. For more information contact Shelton Swanier, Project Manager at sswanier@jsums.edu.



CSET WELCOMES NEW FACULTY, CONT'D.

(Continued from Page 2)

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Dr. Sabrina N. Williams:

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