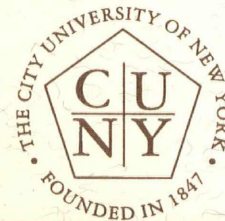


NEW YORK CITY ALLIANCE NEWS



ALLIANCE FOR MINORITY PARTICIPATION IN SCIENCE, ENGINEERING AND MATHEMATICS

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NYC LSAMP Facts

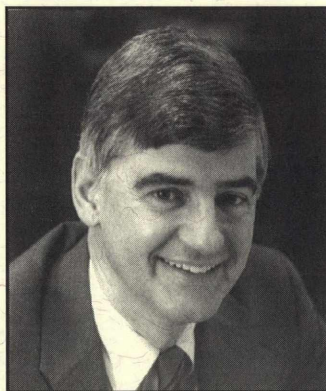
- The NYC LSAMP Mentor Recognition Conference drew **600** participants from across CUNY; it honored **118** faculty mentors; CUNY LSAMP research scholars presented **130** posters.
- **146** students applied to participate in the summer components of NYC LSAMP's Research Scholarship and Teacher Preparation programs.
- **24** faculty members applied to do research under the auspices of NYC LSAMP's Research Initiation (RIP) and Research Articulation (RAP) programs.

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NYC LSAMP Puts the Spotlight on Mentoring

On April 23, 1999, 600 participants filled City College's Shepherd Hall for an event which brought together SMET faculty and students from all over CUNY. In 1992, the New York City Alliance began creating a university-wide SMET community, initiating collaboration between sixteen undergraduate CUNY campuses and the Graduate School and University Center with the aim of bringing about systemic SMET reform. The CUNY-wide gathering, presided over by Interim Chancellor Christoph Kimmich, was evidence of the Alliance's success. Entitled *The Urban University: Pathways to Careers in Science and Engi-*

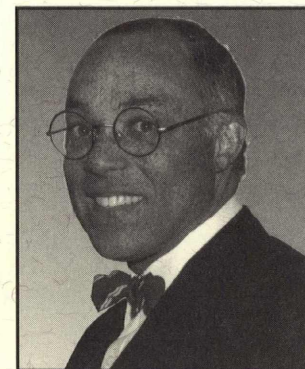


Interim Chancellor Christoph Kimmich

neering for Minority Scientists and Engineers, it honored the faculty mentors who have enabled the Alliance to make research an integral part of undergraduate SMET education at CUNY.

Dr. George Campbell, Jr., President and CEO of NACME (National Action Council for Minorities in Engineering, Inc.), which received the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring in 1996, delivered the keynote address. His speech was a wake-up call which used graphs and statistics to demonstrate the increasing shortfall of underrepresented minority groups in engineering and the sciences and to emphasize the critical job which lies ahead for institutions which, like CUNY, play a major role in minority education.

The strides made by the New York City Alliance in tackling this challenge were illustrated by the 130 posters presented by LSAMP research scholars



Dr. George Campbell, Jr.

representing all branches of the sciences. The display demonstrated the impact the Alliance has had, over the past seven years, in opening CUNY laboratories to undergraduates.

The conference culminated when Interim Chancellor Kimmich asked students to turn to their mentors and present them with certificates of appreciation. It was an important moment of official recognition of the professional and personal investment which CUNY's SMET faculty is making in the next generation of minority scientists and engineers.

NYC LSAMP After the Mentor Recognition Conference, Thoughts from the Principal Investigator, Dr. Neville A. Parker

For the NYC LSAMP team, the Mentor Recognition Conference was a proud moment. In 1992, we committed to changing the culture of the university in SMET disciplines to dramatically increase the number of underrepresented minority students who successfully

navigate the degree process and emerge as members of the scientific community. To form the scientists and science teachers of the future, we knew that we needed the wholehearted involvement of CUNY's SMET faculty and that we had to engage our students

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in undergraduate research.

At the conference, we saw our strategizing and hard work come to fruition in a tremendous display of faculty dedication and student accomplishment. The presence of Dr. George Campbell, Jr., whose life-work is a model of mentoring in the sciences and engineering, was in itself recognition of the strides we have made. We thank him for the honor he has paid us.



A poster presentation in Shepherd Hall

Now we must determine how to use this exciting event as a springboard for further accomplishment. Bringing more mentors into the LSAMP fold and solidifying the mentoring culture within CUNY's SMET disciplines are a top priority. In the fall of 1999, we will hold a **forum for SMET faculty on how to mentor students**. I know from my own experience that being a defining influence in a student's life goes beyond the academic, especially when serving young people for whom the challenges to classroom success often lie in the economic, family, and cultural issues which trouble the urban environment. It is our responsibility as university instructors to guide our students towards graduate education and careers in research, precollege teaching, and the professoriate. The LSAMP forum will discuss ways in which mentors can increase opportunities for their students and create the framework for a mentoring community and environment in which faculty members, along with staff, can exchange information and ideas on how to enhance their mentees' ability to succeed.

At LSAMP, we believe that scientists should see mentoring as part of their mission. There are three prongs to our program for bringing our students into the scientific community: **research, teaching, and service**. Since 1992, we have worked to make the need for hands-on research experience self-evident. As Phase II continues, we will offer the option of teaching experience to all our students, and we will endeavor to instill in them a sense of responsibility to their communities. LSAMP scholars participating in our Teacher Preparation Initiative and in the NASA-funded Institute on Climate and Planets (ICP) and Science and Technology Teachers for the Next Millennium (MASTAP) are mentoring students in middle and high school. By forging links to programs such as the Salvadori Center for the Built Environment and emulating the precollege outreach of organizations such as the Latin American Engineering Student Association chapter of the Society of Hispanic Professional Engineers, LSAMP will increase opportunities for CUNY undergraduates to share their knowledge and motivation with younger students in the SMET pipeline.



Shepherd Hall on the day of the NYC LSAMP Mentoring Conference

Dr. Campbell showed us how much there is to be done in the nation, the state, and CUNY to remedy the shortfall of minority engineers and scientists. Our challenge is to avoid being stymied by the enormity of the problem and to steadfastly put one foot in front of the other to solve it.

Focus on Teacher Preparation: LSAMP Leaders Attend Workshops at NSF and NASA

Teacher preparation is a burning issue. The Mayor's Advisory Task Force on the City University of New York cites the importance of teacher preparation at CUNY in the light of the university's position "as the main source of teachers for New York City public schools, as the system enters an era of massive recruitment." Through its own Teacher Preparation Initiative (TPI) and the NASA-funded MASTAP (Science and Technology Teachers for the Next Millennium), the Alliance has been developing an approach to training teachers based on a strong command of science content and hands-on experience in the city's classrooms.

At the beginning of May, Project Directors Louise Squitieri and Leon Johnson, Project Administrator Claude Braithwaite, and BMCC LSAMP Steering Committee member Sadie Bragg went to Washington, DC to attend meetings which focused on NSF-funded teacher preparation programs.

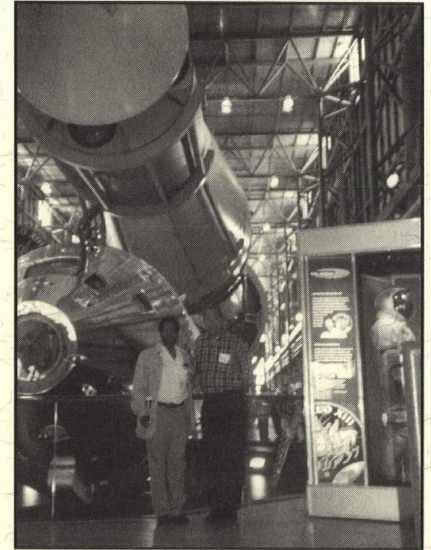
At a joint meeting of principal investigators from the Louis Stokes Alliance for Minority Participation Teacher Preparation Components and the Collaboratives for Excellence in Teacher Preparation (CETP), LSAMP leaders participated in sessions in which CETP Collaboratives exchanged examples of successful practices, documented their success and described their methods of evaluation.

The NSF Teacher Education PI Workshop, *From Preparation to Practice*, which followed, was addressed by Maxine Singer,

President of the Carnegie Institution of Washington and Rita Colwell, Director of the National Science Foundation. "It is highly motivating to hear scientists of great prominence talk about teacher preparation as part of the national agenda," says Dean Squitieri. "The message we got was that training people to be good SMET teachers is the job of the entire SMET community. If we are going to make this happen for our country and our city, we all have to work together."

Participants at the workshop engaged in roundtable discussions on the qualities effective K-12 teachers should possess, the barriers to developing a model program for effective teacher education, and how to transfer best practices to others and catalyze change. They also heard panels on topics ranging from technology to institutionalization.

Later in the month MASTAP Principal Investigator Leon Johnson, Proyecto Access Principal Investigator and Hostos LSAMP Steering Committee member Humberto Cañate, and Proyecto Access Director Edison Teano took part in the NASA Precollege and Teacher Forum, *Inspiring Education for the New Millennium*, at the Kennedy Space Center. "It was exhilarating," says Professor Cañate, "to share information with educators from across the nation on ways to promote and support scholarship among minority students." "Everything that NASA does has an educational component," says Dr. Johnson. "They are terrific at sharing information with the public." Both cite touring the Space Center



Left to right: Professors Leon Johnson and Humberto Cañate at the Kennedy Space Center

and seeing the space shuttle on its launch pad as conference highlights.

Speaking of MASTAP, Dr. Johnson says, "The combination of rich science content and related science pedagogy is working: between 1997 and 1999, 20 students took and passed the Liberal Arts and Science section (LAST) of the New York State Certification Exam; 15 of those took and passed the Assessment of Teaching Skills Written section (ATS-W), and at least 12 graduates taught in the secondary system in 1998-1999."

Both the LSAMP Teacher Preparation Initiative and MASTAP are logical leads to the CUNY-wide Teaching Opportunity Program (TOP), designed to help New York City meet its pressing need to recruit teachers.

Hunter College

"At Hunter, we are committed to bringing underrepresented minorities into the physical sciences and to attracting students of the highest caliber," says veteran AMP mentor, Professor of Physics Steve Greenbaum. "Our BAMA program provides a rigorous yet nurturing environment in which students prepare for Ph.D. studies at CUNY or other top institutions," he continues. "When students stay here, we give them the support which can be critical, especially during the first year of the doctorate, and we are relentless in seeking the best opportunities for them when they complete their degrees."

There are currently four doctoral students in physics at Hunter. All receive support from LSAMP. **Désiré Meissein** (profiled in the April, 1999 issue of *New York City Alliance News*) has been working with his mentor Dr. Godfrey Gumbs, the Faculty Director of Hunter's Physical Sciences Learning Center, since he was a bachelor's student. He combines his graduate studies with the demanding job of being the LSAMP Activity Coordinator in the Learning Center.

Following bachelor's studies at Polytechnic University and several years in industry, **Tibab McNeish** came to CUNY for his

Ph.D. and was bowled over by the support at Hunter. He is doing research under Dr. Godfrey Gumbs on electronic transport and optical properties of semiconductor heterostructures. "Dr. Gumbs is committed to my completing my program with distinction," he says. "The Hunter physics department demands rigorous scholarship and provides exemplary counseling. The professors work tirelessly, and somehow you give 150% of yourself without even knowing it." McNeish, who is about to embark on his thesis, has helped recruit students into Hunter's physics department by making presentations at New York City high schools.

"I will not change my goals for the simple reason that I cannot picture myself doing anything else."

AMP Graduate Research Scholar Sophia Suarez-Gustave speaking of her ambition to become a professor of physics.

Sophia Suarez-Gustave's LSAMP research centers on the evaluation of novel membranes for direct methanol fuel cells. "Under the mentorship of Dr. Greenbaum, I am using NMR techniques to test membranes developed by industry and evaluate their performance for methanol fuel cells," she explains. Support from LSAMP allows Suarez-Gustave to balance her responsibilities as a single mother and her doctoral studies. A graduate of the Hunter BA/MA program, Suarez-Gustave plans to teach physics at the university level.

Elharith Ahmed began his CUNY

career at BMCC, where he was encouraged by his physics professor, Dr. H. Ringel to enter the BA/MA program at Hunter. Ahmed has been part of LSAMP throughout, as a peer tutor and mentor and an undergraduate research scholar. In 1994, he received the National Science Foundation's Honor Award for his excellence in physics. After finishing his Hunter degree, Ahmed spent two years at Theodore Roosevelt High School in the Bronx teaching chemistry, general science, and environmental science. "Being a teacher has broadened my perspective on science and physics," he says. "I believe that it is going to make me a better doctoral student." Ahmed is currently doing research on diode-pumped miniature tunable solid-state lasers under Professor Ying Chin Chen.

Dean Louise Squitieri Honored

LSAMP Project Co-Director, Dr. Louise Squitieri, Dean for Research and Grants at New York City Technical College, has been honored by the Italian Heritage and Cultural Committee of the Bronx and Westchester with its Il Leone di San Marco Award to Outstanding Italian-Americans. State Senator Guy J. Velella presented the award to Dean Squitieri,

who was cited for achievement in academia. The awards have been presented since 1980. Other distinguished recipients from the world of education include the late Dr. A. Bartlett Giamatti, who served as President of Yale University and CUNY's own Hunter College President Dr. David A. Caputo and former City Tech Acting President Dr. Emilie A. Cozzi.

New York City Technical College

With 29 students in the Research Scholarship Program this spring, there is no doubt as to the vitality of LSAMP at City Tech. Here are a few highlights:

Rudolph Coppin and **Carlos Azvedo** were listed as co-authors on **Dr. Djafar K. Mynbaev's** paper *Study of Modal Structure in the Optical Fiber in an Academic Laboratory*. Their research, performed in City Tech's Department of Electrical Engineering Technology and Communications, was presented at the 1999 Spring Regional Conference of the Middle Atlantic Sec-

tion of the American Society for Engineering Education.

"If you are wondering whether to become an AMP research scholar, the answer is YES!!! First, being an AMP Research Scholarship recipient forces you to become a better student; second you receive a monthly stipend; third your AMP scholarship follows you to graduate school; and fourth, as a research scholar you impress potential employers."

NYCTC graduate Leacroft Penrose quoted in City Tech AMP Views

Andre Price worked with his mentor Professor John M. Razukas of the Electromechanical Engineering Department on the exhibit *The Dawn of the Age of Science and Technology: Leonardo Da Vinci, Renaissance Engineer*, sponsored by Brooklyn Union Gas Company in May. The exhibit consisted of articulating models

built by electromechanical students, a video made at the City Tech Library, and materials on Leonardo Da Vinci and reverse engineering developed and collected by Prof. Razukas.



From left to right: Prof. Jonathan Natov, Dean Sankar Sastri, and Dean Louise Squitieri at the City Tech AMP Research Display

hibit consisted of articulating models

Other recent LSAMP accomplishments include the AMP Student Research and Research Program Display and publication of the college's own LSAMP newsletter, *AMP Views from City Tech*. It quotes recent graduate **Leacroft Penrose**, now an assistant switch

routing and translation engineer with TGC/AT&T Local Services on his LSAMP research scholarship experience; LSAMP Steering Committee Student Representative **Maryam Abdur Rahman** on using what she learned as a workshop leader in Dr. Victor Stro-

zak's CH 210 course to help Clara Barton High School establish a workshop chemistry curriculum; and LSAMP research scholar **Leah Pride** on how the LSAMP Precollegiate Summer Research Program prepared her for college work.

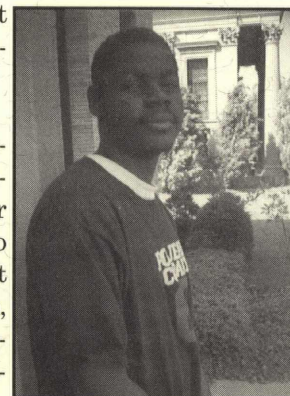
Bronx Community College

During the spring semester, there were six LSAMP research scholars at BCC. **Johann Veras, John Akindayo, Bruce Ferrero** and **Roan Dawkins** worked with Dr. Joseph Malinsky of the Physics Department, applying topology to the study of macromolecules. They presented their research at the BCC Careers in Science Fair, at the LSAMP conference, *The Urban University: Pathways to Careers in Science and Engineering for Minority Scientists and Engineers*, and at the CSTEP conference in Lake George, NY. In chemistry, **Pascaline Fonji** and **Francis Olajide**, worked with Dr. Panayotis Meleties on the project *Reductive, Selective Deoxygenation of Acylbenzofurans, Aromatic Aldehydes and Ketones*. They too presented posters at the BCC and LSAMP events. Working under Professor Russell Miller, LSAMP peer tutors **Omar Smith, Francis Olajide**, and **Mohammed Yehudi** have had a significant impact on chemistry at BCC, contributing to the improved performance of students in General Chemistry.

Activity Coordinator Clemente Canciello, a graduate student in civil engineering at City College, who joined LSAMP in February, has recruited four mentors in the Mathematics Department. They will pursue a project in fractals with

LSAMP research scholars. Eight BCC students will do research under LSAMP auspices this summer.

LSAMP congratulates Roan Dawkins on being one of four valedictorians at BCC this year. A computer science major, Dawkins plans to pursue his bachelor's studies at Clarkson University in Potsdam, New York, where he will begin doing research under National Institutes of Health auspices this summer. A BCC presidential scholarship winner, he has been awarded a Union Carbide scholarship towards his Clarkson tuition. Dawkins credits AMP with developing his research skills and positioning him for his current academic opportunities. In addition to maintaining a 4.0 GPA, he was a Regional All-Star on BCC's soccer team. He received the BCC and City University Scholar Athlete Awards and the National Junior College Athletic Association All-American Scholar Athlete Award. While at BCC he tutored in the college's disabled students program.



Roan Dawkins

York College

"It is a key part of our mission at York to expose young people in our community to science, mathematics, and research," says LSAMP Steering Committee member Leo Corbie. "Though students with a scientific bent may think of going to medical school, few come to York aware of the variety of careers in science and mathematics research. LSAMP is helping our top-notch SMET faculty introduce students to those possibilities. It is an essential program, which is why, as York's provost, I wanted to serve on the Steering Committee."

This spring there were nine LSAMP research scholars at York, working under eight faculty mentors in biology,

mathematics, chemistry, and physics. Their projects included: Sonjae Wallace's work on the General Circulation Model at the Goddard Institute for Space Studies; Timur Yasin and Sharon Pierce's investigations into chemoreceptors on the chilarium spines of the horseshoe crab; and Gerald Beckford's studies of the polyhedron. LSAMP Activity Coordinator Mustafa Kamal says that the program is thriving with 15 applications for fall research scholarships in hand and new inquiries every day.

At York, LSAMP takes place in the context of a thriving science scene which integrates the college and its Jamaica community. With over a million dollars

in NASA support, York has built a K through 16 pipeline which provides remarkable opportunities for students in Jamaica's school districts. The recently opened Science, Mathematics and Aerospace Academy (SEMAA) includes a cutting edge Aeronautics Education Laboratory where students explore real-world challenges in aviation at eleven state-of-the-art workstations. *Let's Do Science* offers a summer science camp and interactive after-school academic program for students in grades 5-8 and a professional development component for their teachers. And, York is a lead school in the Goddard Institute for Space Studies (GISS) Institute on Climate and Planets (ICP). The college's satellite NASA/GISS re-

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search site is part of the effort to develop the ICP from a primarily GISS-based activity into one which takes place on its partner campuses.

In another coup for York and for Jamaica, the U.S. Food and Drug Administration is constructing its second largest regional facility and laboratory office building on campus. The

complex will be a powerful resource for SMET education. "Through this historical collaboration, students and faculty will work on joint research projects, as well as share equipment and expertise, with federal researchers," notes York's president Dr. Charles C. Kidd, Sr. "This unique partnership with the FDA will augment our ability to offer more students the tools they need to build success in the marketplace."

Kingsborough Community College

"There is new vitality in the LSAMP program at Kingsborough," says Dr. Joseph Muzio, who took over as LSAMP Steering Committee member at Kingsborough last fall. He has reconstituted the college's LSAMP Steering Committee, and he and newly-appointed activity coordinator Ricky Kissoon have raised LSAMP's profile on campus. The college had ten applicants for the highly competitive LSAMP undergraduate summer research program, and six were accepted. Kingsborough also has a faculty member, Professor Loretta Brancaccio Taras, participating in

LSAMP's new Research Initiation Program (RIP), which provides support to community college instructors so that they can begin doing research, allowing one year of funding before they seek a senior college partner.

Kingsborough's location on a 64-acre campus facing Jamaica Bay and its emphasis on marine technology education make it unique within CUNY and a resource for the entire university. The college is home to the research vessel RV CUNY, an 82-foot-long former U.S. Coast Guard cutter, used for research by CUNY faculty

and students and for precollege programs organized in conjunction with the New York City Board of Education. During the 1999-2000 academic year, the college expects 60 groups of high school students from across the city to take educational trips on the vessel. They will engage in SMET learning experiences covering disciplines from biology to engineering. "The RV CUNY is a major outreach tool to precollege students. We are using it to interest high school students in pursuing the sciences as undergraduates at CUNY," says Dr. Muzio.