

NEW YORK CITY ALLIANCE NEWS



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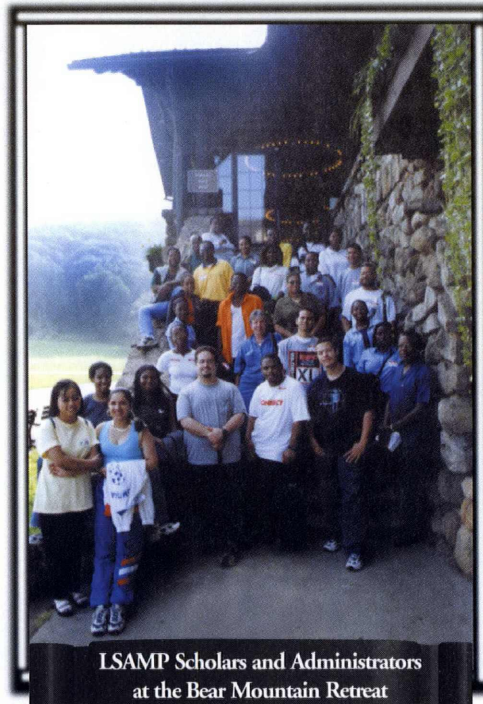
NYC LSAMP FACTS

- 🍏 76 students conducted research in CUNY labs during summer 2000.
- 🍏 NASA ICP Summer 2000 engaged 50 participants.
- 🍏 In the 2000-2001 academic year 246 LSAMP Scholars are doing research at CUNY (21 graduate, 153 undergraduate, 72 precollegiate).
- 🍏 17 students are participating in the LSAMP Teacher Preparation Initiative.
- 🍏 14 NSF AGEP awards have been made to LSAMP graduates and continuing scholars for SEM studies at the CUNY Graduate Center.
- 🍏 10 RIP/RAP awards have been made to CUNY faculty.

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Directors Seek Feedback at LSAMP Retreat



LSAMP Scholars and Administrators at the Bear Mountain Retreat

another. For Drs. Neville Parker, Louise Squitieri, Leon Johnson, and Claude Brathwaite, it was a source of invaluable information on students' expectations. They intend to plan further events which build the LSAMP community by bringing together research scholars from across CUNY to exchange ideas among themselves and with the project directors.

Upon arrival at Bear Mountain, students discussed five questions which went to the heart of the undergraduate research experience. A precis of their responses follows.

• HOW SHOULD STUDENTS APPROACH FACULTY FOR RESEARCH OPPORTUNITIES?

Students should market themselves and tell faculty what LSAMP is about. They should suggest research topics to mentors and be provided with information about professors' research interests. There should be a standardized way to exchange information about research opportunities such as a web site. Students should be able to do research on all CUNY campuses.

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For a program to sustain its accomplishments and improve, it should have feedback from the constituency it serves. That is what LSAMP's project directors and administrator were looking for when they organized the first LSAMP Research Scholar Retreat. On August 24, LSAMP students spent a day at Bear Mountain, New York away from the hustle and bustle of CUNY. The outing provided time to reflect on the LSAMP research experience, socialize, enjoy the outdoors, and learn from one

"and I owe it all to LSAMP. Our Activity Coordinator, Sharon Lall, told me there was an opportunity at Boulder and encouraged me to apply." This semester, Ms. Datulayta is continuing her work in atmospheric science at CUNY under the mentorship of Dr. Reggie Blake.

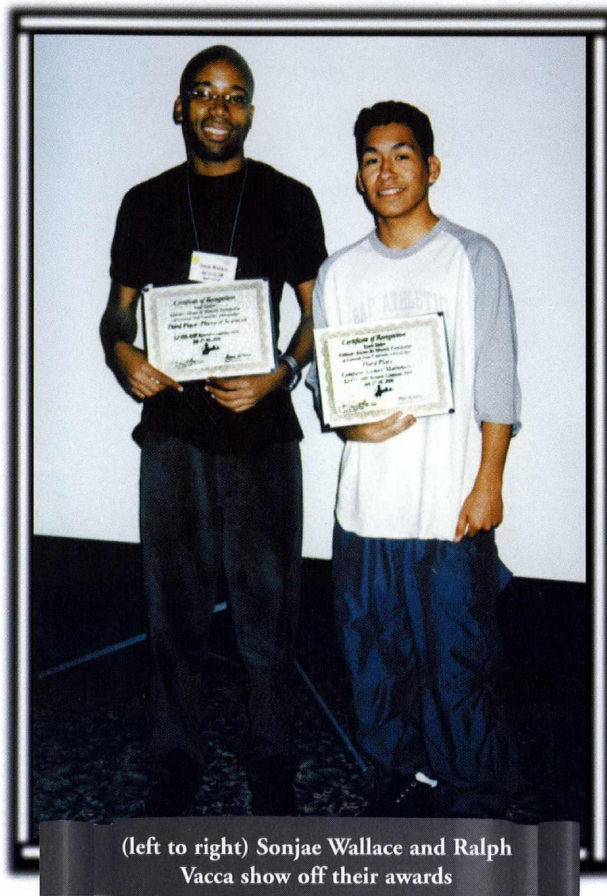
Sonjae Wallace

A senior at York College, Sonjae Wallace has taken part in research at the Goddard Institute for Space Studies (GISS) throughout his CUNY career. He has two mentors, Dr. Samuel Borenstein of York and the Head of GISS, Dr. James Hansen. His project, Investigating the Net Cooling Trend of the US Replicated by the GISS Global Climate Model, won third prize in the physical science category. Mr. Wallace, who is a veteran of many research conferences, found this one to be a good introduction to what he might expect in graduate school. He is considering pursuing his studies in one of three fields, computer science, mathematics, or chemoinformatics, which uses computer science to maximize efficiency in the manufacture of pharmaceuticals.

Heidi Zapata

The project which Heidi Zapata presented in Colorado, Normal Proinuria in Porcupines, was the result of three years of LSAMP research. A year 2000 graduate of Queens College, Ms. Zapata majored in biology and minored in chemistry and was a mentee of Dr. Uldis Roze. She is currently a research assistant at the Cornell Medical College, where she is studying nitric oxide, a free radical which may cause Parkinson's disease. Ms. Zapata is part of a team which developed a cell line which is

resistant to certain amounts of nitric oxide. Their current research focuses on determining the reasons for that resistance.



(left to right) Sonjae Wallace and Ralph Vacca show off their awards

Bernadette Burch

For Bernadette Burch, the Colorado Conference came in the midst of a busy summer of teaching. Ms. Burch, who holds an associate's degree in computer science from Medgar Evers College, is studying object-oriented networking systems in the CUNY BA program under the mentorship of Dr. William Harris. Her teaching activities consisted in preparing high school teachers to guide their students through the activities of the Medgar Evers Aeronautics Summer Session and instructing incoming CUNY students in the LSAMP Precollegiate Computer Information Systems and Computer Science Program at City

College. Ms. Burch's Colorado project was on expert systems, an aspect of artificial intelligence. She has just returned from Washington, D.C., where she and other Medgar Evers students spoke with members of Congress about the digital divide which affects high school students who are inadequately versed in technology and the importance of engaging college students to help them acquire the skills they need.

Amir Estephan

For Amir Estephan, a College of Staten Island sophomore majoring in biochemistry, the conference was "a great opportunity to share our research and compete with each other." His particular interest is environmental chemistry, and his project, Alterations in Prey Capture and Induction of Metallothioneins in Grass Shrimp Fed Cadmium-Contaminated Prey was completed under the mentorship of Dr. William G. Wallace. "Presenting my work and answering questions was a challenge which I enjoyed," he says.

Leonard Luxama

Now an engineering major at City College, Leonard Luxama began his CUNY and his LSAMP careers at Borough of Manhattan Community College where he earned an associate's degree in engineering science. At City, he has continued doing research with Dr. Mahmoud Ardebile, his BMCC mentor. Mr. Luxama presented the project, Study of Lift and Drag Coefficients of an Airfoil Subjected to Turbulence. He hopes to pursue his interest in aeronautical engineering through a research career in aerospace. 🍏

The LSAMP Precollegiate Program in Computer Information Systems and Computer Science

In the summer of 1999, Ralph Vacca and Jose Cortes, who had just graduated from high school, were students in the LSAMP Precollegiate Program in Computer Information Systems and Computer Science at City College. In the summer of 2000, Mr. Vacca, who had completed his first year at Baruch, and Mr. Cortes, who had finished his first year at Hunter, were teaching in the program along with two other LSAMP students, Bernadette Burch of the CUNY BA program and Nelcida Rodriguez of City College.

"We taught precollegiate students valuable computer skills and business world concepts," says Mr. Vacca. "After the summer, the

students left with knowledge of making web pages, client-side programming, server-side programming with databases, and, more importantly, a fresh perspective on the new economy and the opportunities out there." The class, which consisted of 15 students, met for six weeks from Monday to Thursday. It combined lectures with one-on-one learning sessions. "We started out with HTML and JavaScript," says Mr. Cortes, "and ended up introducing the students to C++ and ASP, which is a very good tool for web applications. The program gave students a good head start, and I would recommend it to anyone." Both Ms. Rodriguez and Ms. Burch commented on how engaged the

students were. "It was very exciting to see people so interested in computer science. It was great seeing the spark they had," says Ms. Rodriguez. "The students really wanted to be there and kept asking us for more to do," says Ms. Burch.

For all four instructors, teaching in the program has been a rewarding experience and an inspiration to continue helping others either as classroom teachers or as volunteers in combination with other jobs. They will continue to mentor their summer students, whom they have encouraged to join the team constructing the LSAMP web site and Virtual Institute. 🍏

LSAMP Students Participate in Proyecto Access

LSAMP and Proyecto Access are natural partners in helping underrepresented minority students achieve in the sciences and engineering. Based in the Mathematics Department at Hostos Community College, Proyecto Access is a pre-college, pre-engineering program for high achieving, low income students interested in careers in engineering, technology, and mathematics. Over the past four years it has served 300 precollege students, offering courses in logic and its applications; problem solving; C++ programming; introduction to engineering; algebraic structures; physics; probability and statistics; and technical writing.

This summer three LSAMP students took part in Proyecto Access as assistant mentors. Each was assigned a seminar group to supervise for the duration of the program. Samuel Maldonado, a sophomore in electrical engineering at City College, mentored students in logic and problem solving. Stacey Joseph, a Lehman College chemistry major, worked with students in probability and statistics and algebraic structures. "The students were very motivated, skillful and talented," she says. "It was good to be a role model and help them understand things. Sometimes they just needed a friend to talk to." Diana Villacis, a sophomore in civil engineering at City College,

mentored eleven- and twelve-year olds in logic and engineering. "The energy and intelligence of the kids reminds you why you are in college and motivates you," she says.

"Being an assistant mentor is a unique position," says Edison Teano, Proyecto Access's director. "Current college students help Proyecto Access students understand the importance of doing well in school and taking college preparatory courses in mathematics and science. They help our students with their transition from high school to college." 🍏

Space Science: A Growing Field at CUNY

The New York City Space Science Research Alliance

A bold initiative funded by NASA will bring a new level of cooperation to space science study and research in New York City. Over the next three years, The New York City Space Science Research Alliance (NYC-SSRA) will receive \$245,000 a year to initiate collaborations in space science research and develop a space science major in the CUNY BA/BS program.

The Alliance is anchored by CUNY, the Hayden Planetarium at the American Museum of Natural History, and the National Space Science Data Center at the NASA Goddard Space Flight Center. In addition to Medgar Evers College, which is the lead institution, five other CUNY colleges are participating. They are the College of Staten Island, City and Hunter Colleges, and LaGuardia and Queensborough Community Colleges. Other partners include Long Island University - Brooklyn Campus, the NASA Goddard Institute for Space Studies (GISS), the NASA Minority University Space Interdisciplinary Network (MU-SPIN), and Manhattan Transition Center High School. "This grant will be a big boost to the growing interest in space science at CUNY," says Dr. Leon P. Johnson, Professor of Physics at Medgar Evers, who is the NYC-SSRA project director. "CUNY has a longstanding relationship with NASA. We have been active participants in the GISS Institute on Climate and Planets, NASA PAIR, MU-SPIN, and MASTAP. By bringing the Hayden Planetarium

into the Alliance we are expanding and enriching the space science resources available to students at CUNY and in the SMET pipeline we are dedicated to building. We are especially honored that the Planetarium's Director, Dr. Neil de Grasse Tyson, has joined the NYC-SSRA team."

By creating a multi-campus space science research center, NYC-SSRA will engage underrepresented students and faculty from colleges and high schools in NASA space science research and education projects. It will establish or enhance the space science research capabilities of faculty in the participating colleges; create a pipeline of research activities from high school to graduate school; and integrate research and research-related activities into participating undergraduate programs. "We aim to increase the number of underrepresented students in the SMET pipeline who undertake study and research in space science," says Dr. Johnson. "Creating a space science major in the CUNY BS program will be a significant accomplishment, and one which could not take place without the cooperation between institutions which NYC-SSRA is bringing about."

The Alliance will undertake seven ambitious research projects. They are:

- Astrometry and Photometry of Asteroids and Comets with Emphasis on Near Earth Objects;
- Photometry of Binary and Variable Stars;
- Radial Distribution of Supernovae

- in Spiral and Elliptical Galaxies;
- The Evolution of Galaxies in Groups;
- Radio Luminosity Extinction in Jets of Extragalactic Radio Sources;
- The Distribution and Dynamics of Atmospheric Aerosols on Jupiter; and
- Probing Planetary Surfaces for Microorganisms.

CUNY Students Take Top Honors at MU-SPIN Conference

In September, CUNY students and faculty played a major role in the joint annual meeting of the NASA Minority University Space Interdisciplinary Network (MU-SPIN) and the NASA Minority University Research Education Directorate (MURED) in Atlanta.

The conference, which celebrated the 10th anniversary of both MU-SPIN and MURED, included scientists and personnel from NASA's Offices of Space and Earth Science and Jet Propulsion Laboratory and the Advanced Physics Lab at Johns Hopkins University. According to Dr. Sherman A. Austin, Director of the CCNY MU-SPIN NRTS (Network Resources and Training Site), "The main theme of the conference was to develop partnerships to participate in NASA missions, and the scientists were there specifically to facilitate these partnerships." "An important feature of the MU-SPIN initiative," she continues, "is that we are moving towards leveraging the technology investments of the grant's first five years to build and strengthen NASA-related programs on our campuses for successful competition in NASA's

mainstream initiatives. At CUNY, the New York City Space Science Research Alliance is an important step in that direction."

In one of four presentations delivered by CUNY faculty, Dr. Austin addressed a plenary session on the K-16 local weather and climate network developed by CCNY MU-SPIN NRTS. CUNY students gave twelve presentations of which six took top honors. Among undergraduates, Tamara Battle (Medgar Evers) and Taran Tulsee (Queensborough CC/Queens) took first and second place in astrophysics, respectively. Naraddine Fouad (Laguardia CC) was awarded first place in earth science, and Destin Witzar (Medgar Evers) came in first in technology. At the graduate level, Lorenzo Williamson (Medgar Evers) came in first, with Colley Baldwin and Derek Skeete (Medgar Evers) in second place. Dr. Austin points out that Tamara Battle and Taran Tulsee are part of an inter-regional MU-SPIN collaboration with South Carolina State University, where they have participated in a summer program in undergraduate space science research. "This is important," she says, "because it is an example of the strength of the MU-SPIN collective in providing mentoring across regional boundaries and of the strength of our collaboration."

NASA/NACME Space Station Engineering Scholars (S2ES)

Under the auspices of NASA and NACME (National Action Council for Minorities in Engineering, Inc.), students from the City College

School of Engineering are doing groundbreaking research in space science. The goal of the NASA/NACME Space Station Engineering Scholars Program (S2ES) is to build a pool of engineers to support the Human Exploration and Development of Space (HEDS) enterprise. This past summer, Kurt James, Oluwatosin Ogunwuyi, Howard Sobers, Jr., and Juliana Vernon, who had just completed their freshman year, took part in the program.

Ms. Ogunwuyi, Mr. James, and Mr. Sobers, who are electrical engineering majors, began their S2ES experience in Miami, Florida at TechSymposium 2000. The event, which focused on academic, professional, and personal development, brought together S2ES scholars and representatives of academia, government, and industry for workshops, seminars, and discussion groups. It concluded with a two-day industry and university career fair. Immediately following, the three CUNY students went to the Massachusetts Institute of Technology for three weeks which Ms. Ogunwuyi describes as "an intense combination of study and research." "We hardly slept," she says. Their assignment was to build a bioreactor which would improve scientists' capability to study the effects of tissue cultivation in a microgravity environment. Their approach was to redesign the High Aspect Ratio Vessel (HARV) bioreactor to enhance its ability to cultivate cells. They have constructed an impressive website (http://www.geocities.com/nacme_scholars/bioreactor.html), which

describes their complex project in terms accessible to the layperson.

In addition to their research, Mr. James points out that they learned a lot about physics, in particular fluid mechanics, CAD, Powerpoint, and HTML. They also read about African American scientists and engineers. Ms. Ogunwuyi was particularly impressed by the story of Dr. Shirley Ann Jackson, the first African American woman to receive a doctorate from MIT, who is now president of Rensselaer Polytechnic Institute. "MIT exposed us to a lot of African Americans who are striving and succeeding," she says. "They helped us focus and encouraged us the whole time. They showed us how you can utilize the network of NACME scholarships all the way to the Ph.D."

For Juliana Vernon, a chemical engineering major, participating in S2ES entailed a ten-week internship at the NASA Marshall Flight Center in Huntsville, Alabama. She did research in the Wet Lab Microgravity Department, where she was part of a team which designed a new technique to grow crystals on earth and in microgravity. The resulting experiment was carried into space in September aboard the STS 106 space flight. Ms. Vernon has been invited to return to Huntsville next summer. Of the experience she says, "It was very beneficial and relates specifically to the classes I am taking today. It has given me a real advantage in the lab, especially in organic chemistry."

Ms. Ogunwuyi, Mr. James, and Ms. Vernon are LSAMP scholars. 🍏

The President's View: Thoughts on LSAMP from CUNY's College Presidents Interim President Russell K. Hotzler, Queens College

Few people have a longer association with LSAMP than President Russell Hotzler. In the early 1990s, when Dr. Hotzler was Vice President and Dean of Academic Affairs at Queensborough Community College, he helped generate the first CUNY/AMP proposals to the National Science Foundation. He took a keen interest in the project's

"LSAMP HAS DONE WONDERS. INCREASING THE NUMBER OF SMET BACHELOR DEGREES WHICH CUNY AWARDS TO UNDERREPRESENTED MINORITY STUDENTS BY OVER 60% IS A PHENOMENAL ACHIEVEMENT...TO MEASURE LSAMP'S TRUE SUCCESS, WE SHOULD REMEMBER THAT IT HAS PREVAILED THROUGH DIFFICULT TIMES, SUCH AS THE BUDGET DIFFICULTIES OF 1995, AND COME THROUGH RESPECTED AND STRENGTHENED."

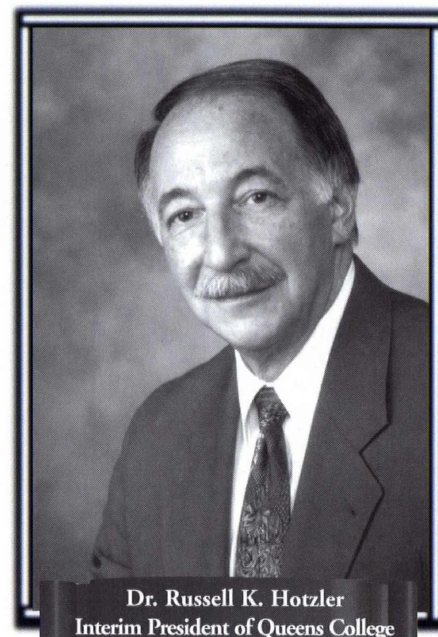
-Dr. Russell K. Hotzler

first phase, working closely with Dr. Fitzgerald Bramwell, LSAMP's founding principal investigator. In 1996, Dr. Hotzler became CUNY's University Dean for Academic Affairs, and, at the behest of Chancellor Ann Reynolds, took up a coordinating role for LSAMP within the University administration. In this capacity, he accompanied the project team on reverse site visits to the National Science Foundation, lending University-level support.

Dr. Hotzler's academic background gives him a keen understanding of

SMET issues. He came to CUNY in 1971 as a member of Queensborough's Mechanical Engineering Technology and Design faculty and holds degrees in Metallurgical Engineering and Physical Metallurgy from the Polytechnic Institute of Brooklyn, now Polytechnic University. "LSAMP has done wonders," he says. "Increasing the number of SMET bachelor degrees which CUNY awards to underrepresented minority students by over 60% is a phenomenal achievement, and each year the project becomes stronger and generates more enthusiasm." "In coming to Queens," he continues, "I have been very impressed with the leadership of Dean Robert Prezant, the LSAMP Steering Committee member, and Sharon Lall, the activity coordinator. Thanks to their efforts, this college has really embraced the program." Dr. Hotzler points in particular to the precollege outreach taking place under LSAMP auspices and to the undergraduate research program, which now numbers thirty-three LSAMP scholars.

According to Dr. Hotzler, LSAMP has played a significant role in creating a CUNY-wide SMET community and improving the alignment across the University in the sciences and mathematics. "LSAMP," he says, "has greatly assisted in fostering coursework equivalencies." When asked to



Dr. Russell K. Hotzler
Interim President of Queens College

comment on the issue of community to senior college articulation from his current vantage point as a college president, Dr. Hotzler says, "There are new University policies and guidelines on articulation and transfer, which we are implementing, and I am working closely with the presidents of Queensborough and LaGuardia to facilitate seamless transitions here in Queens." "The process," he continues, "is easier for LSAMP students, especially where the project has fostered a collaboration between community and senior college faculty in their disciplines. Being an LSAMP research scholar gives students distinction and makes them more attractive to senior colleges. Once they make the transition, they find the familiar structure of an LSAMP learning center, activity coordinator, and peer group, which helps them settle in."

In addition to his responsibilities at Queens, Dr. Hotzler serves as co-principal investigator of the Urban Systemic Partnership (USP), a National Science Foundation program dedicated to restructuring the teaching of science and mathematics in the nation's urban school systems. The project is currently implementing a prototype \$1.5 million grant in Queens and will shortly seek a five-year, \$15 million grant from the NSF to expand its work across the entire city. "Through USP," says Dr. Hotzler, "New York City's Board of Education will work to infuse performance-based K through 12 mathematics and science standards into the city's classrooms. LSAMP's commitment to a strong K through 16 SMET

pipeline and its experience with instructional reform make it a natural partner in this effort."

When asked about LSAMP's future, Dr. Hotzler says "Institutionalizing any project is complex, but LSAMP has some distinct advantages. It has proven successful and been positively received. I believe that there is a desire here at Queens and across the system to maintain its core intent in terms of outreach to minority students and fostering student initiative by providing research opportunities." "I believe that LSAMP will always have to generate outside support in addition to calling on CUNY's own resources," he continues. "It has, however, been the most successful effort we have seen in

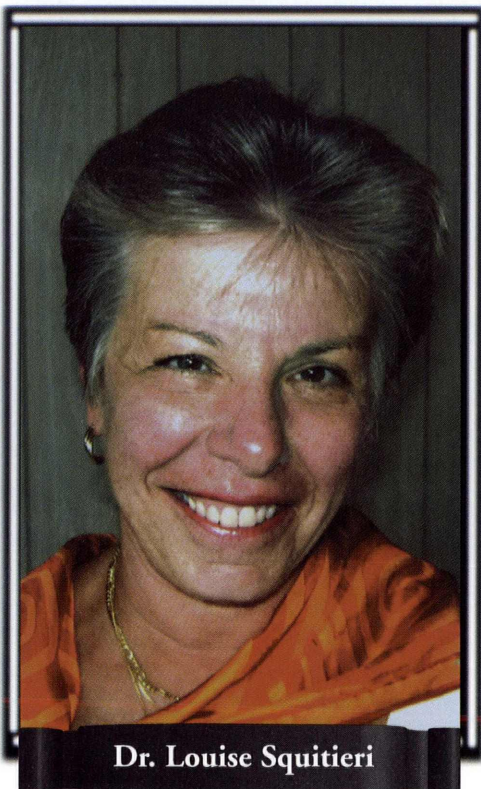
terms of bringing our campuses together. The project directors have provided strong leadership and there are dedicated people on the campuses. To measure LSAMP's true success, we should remember that it has prevailed through difficult times, such as the budget difficulties of 1995, and come through respected and strengthened. There is a lot to point to that is positive." 🍏

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For Dr. Squitieri "Retirement" Is Spelled L-S-A-M-P



Dr. Louise Squitieri

Though Dr. Louise Squitieri has recently retired from the City University of New York as a dean at New York City Technical College and Professor of Biology at Bronx Community College, her distinguished CUNY career is not over. Dr. Squitieri will continue as a project director at LSAMP, a program she has nurtured since its beginnings in 1992. "With LSAMP's focus on research and mentoring, it exemplifies much that I have tried to accomplish during my years at CUNY," she says. "I am very happy to be continuing with the project." Dr. Squitieri will concentrate on aligning LSAMP with other University-wide programs in order to expand and

enrich collegiate research opportunities for precollege students. "The object," she says, "is to introduce students to research as early as possible and to show them what a good academic experience they can have at CUNY."

Retirement, however, will not be all work. An avid and accomplished tennis player, Dr. Squitieri says, "In addition to working for LSAMP, I intend to work on my backhand." A highly respected teacher and administrator, Dr. Squitieri has just received one more honor: Her undergraduate alma mater, Mercy College, has named her one of its 50 top alumnae. 🍏

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• **WHAT SHOULD STUDENTS' COMMITMENT TO LSAMP RESEARCH BE?**

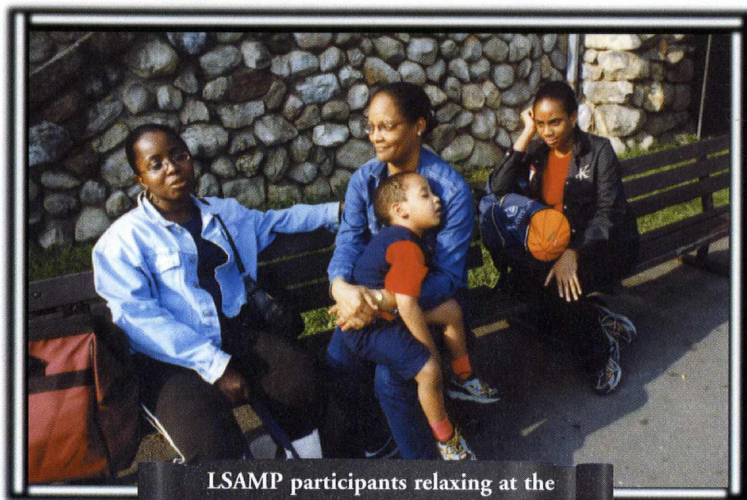
Students should be devoted to their projects and go out of their way to learn the material. They should manage their time so that they can achieve a certain goal in a given time period. They need to be committed to a work schedule and to finishing their degrees. They should continue research and give back after graduating. They should mentor incoming students to build up the LSAMP family. Opportunities for social interaction, such as monthly seminars and campus clubs, would help foster academic excellence.

• **WHAT SHOULD FACULTY COMMITMENT TO LSAMP RESEARCH BE?**

Mentors should be adequately prepared and competent in their work. There should be training for mentors such as workshops and retreats. Mentors should lay a foundation for students to develop their abilities and skills. They should be committed to the many aspects of mentoring, including providing honest, positive advice on careers and personal life. The mentor-mentee relationship should be friendly. Though mentors should not be on students' backs all the time, they should instill a sense of discipline. Mentors should understand that students make mistakes but should be motivated to find solutions to their own

problems through guidance.

Mentors should set expectations which entail bringing a project to fruition. Mentors should emphasize a project's requirements and a timeline for completion. They should be flexible enough to provide alternatives to projects and



LSAMP participants relaxing at the Bear Mountain retreat

allow make-up time where necessary. They should be available for questions, and regular progress sessions. The level of work should be appropriate, and mentors should take account of students' schedules in giving assignments. Students should be monitored to make sure that their grades do not go down because of time devoted to research. There should be a standard way of evaluating student progress.

There should be a lab to provide the additional services which LSAMP students need. Faculty should have more money for supplies. There should be preparation for research.

• **WHAT ARE THE ELEMENTS OF A GOOD RESEARCH PROJECT?**

It is important to work with the right mentor and have adequate

funding and facilities, clear goals, direction, and guidance. The project should be challenging but not impossible. It should be relevant to a student's future tasks and help him/her acquire new skills. It should be applicable to real world situations and benefit the community. The student must see a purpose and be interested in it. Projects should be sent to a committee to be evaluated for feedback. Everyone concerned should understand that some projects cannot be completed.

• **WHAT COMES AFTER THE BACCALAUREATE DEGREE?**

Students should pursue graduate degrees after the baccalaureate or after research in industry. They should gain experience in industry, private laboratories, teaching, or government agencies. What comes after the baccalaureate depends on who you are. For women the time factor is very important. There should also be space for personal life, relationships, and family. Some people need to take a break and explore the world. Students should give back to school they attended. 🍏

VISIT OUR WEBSITE:
<http://nyc-amp.cuny.edu>

Steering Committee Profiles

Myrna Chase, Baruch College

"At Baruch, about 85% of our students are studying business," says Provost Myrna Chase, the college's new representative to the LSAMP Steering Committee. "Though we don't have the same number of science oriented students as Hunter, Queens, or City," she continues, "many students choose Baruch for mathematics or computer information systems, and they can benefit greatly from LSAMP support."

According to Dr. Chase, though Baruch does not yet have a major in the natural sciences, it is working towards one. "Our environmental studies program is growing," she says, "and we hope to establish a master's degree in environmental policy within the next two years." Dr. Chase points to the excellent natural scientists on the college's faculty. "They have won prestigious National Science Foundation grants in chemistry and biology," she says, "and they work very closely with students."

Dr. Chase has been Baruch's provost since April. She is a European intellectual historian and a former chair of the Baruch History Department. A graduate of Washington University in St. Louis, she holds a master's from Columbia University and a Ph.D. from CUNY. Dr. Chase came to New York from her native Mid West at the height of the Civil Rights Movement in the 1960s. She taught at Benjamin

Franklin and George Washington High Schools in East Harlem, where her classroom assignments ran the gamut of subjects from remedial math to ESL. Dr. Chase was then, and continues to be, a vigorous activist for improving educational opportunities for minority children in New York City.

"Our object at Baruch," she says, "is to build openings for underrepresented minority students and to empower them once they get here." To accomplish this, Baruch is determined to bring more minority faculty into its classrooms, and Dr. Chase serves as chair of the College's Task Force on Minority Hiring. Baruch also works hard at bringing alumni back to the College to show current students how well they can succeed with a Baruch education. "Through our Executive in Residence program," she says, "our alumni return to Baruch to speak to classes and conduct workshops. They are a source of internships for our students and provide them with contacts and access." Though Baruch's returning alumni have come mainly from the financial and legal sectors, the College intends to draw on its growing corps of graduates in technology. "The program is a model which can be applied to any campus," says Dr. Chase. "I would be happy to share our experiences with LSAMP colleagues whose colleges have large cohorts of graduates in the sciences, and we might

even see if we can extend the program across campuses."

Bruce Hoffacker, LaGuardia Community College

Bruce Hoffacker brings to the LSAMP Steering Committee a K through 16 perspective honed at two important projects: the Urban Systemic Initiative (USI) and NetTech, the Northeast Regional Technology Consortium. Mr. Hoffacker served as associate director of USI, a National Science Foundation-funded program dedicated to restructuring the teaching of science and mathematics in the nation's urban school systems. USI (now part of the NSF's Urban Systemic Program) promoted the adoption and implementation of standards-based curricula and coordinated, long-term systemic, standards-based professional development. "NSF programs in New York City are supporting reforms from kindergarten through the Ph.D.," says Mr. Hoffacker. "They are having an important impact on science education

"OUR OBJECT AT BARUCH IS TO BUILD OPENINGS FOR UNDERREPRESENTED MINORITY STUDENTS AND TO EMPOWER THEM ONCE THEY GET HERE."

-DR. MYRNA CHASE

"I INTEND TO WORK TO HELP LSAMP FULFILL ITS POTENTIAL AT LA GUARDIA AS A CATALYST FOR UNDERGRADUATE RESEARCH. STUDENT RESEARCH OPPORTUNITIES ARE A TREASURE, AND I WOULD LIKE TO SEE MORE OF OUR STUDENTS IN THE LABORATORY."

-MR. BRUCE HOFFACKER

for minorities and on teacher training." Following his tenure at USI, Mr.

Hoffacker served for three years as the administrator of CUNY/NetTech. NetTech is one of six regional technology consortia funded by the U.S. Department of Education to provide the vision and expertise schools and other educational institutions need to address the current gap in educational technology policy and infrastructure and to integrate technologies which support learning into the classroom. CUNY is the lead institution in this partnership, which includes Brown and Ohio State Universities, the University of Maryland, the Educational Development Center, and TERC. NetTech serves twelve states and the District of Columbia. It focuses on five basic areas: curricular and instructional practices, pre-service teacher education; information systems; urban and underserved populations; and incubator projects. Mr. Hoffacker's expertise in these areas, which speak so strongly to the LSAMP mission, will be invaluable in his work on the Steering Committee.

At LaGuardia, Mr. Hoffacker serves as associate to the Vice-President for Academic Affairs. "I intend to work to help LSAMP fulfill its potential at LaGuardia as a catalyst for undergraduate research," he says. "Student research opportunities are a treasure, and I would like to see more of our students in the laboratory." Mr. Hoffacker is currently interested in LaGuardia's approach to local businesses and how such initiatives can benefit LSAMP as it reaches out to government agencies and the private sector.

Robert Marino, Hunter College

Dr. Robert Marino has been involved in LSAMP since the project's inception. As Professor of Physics at Hunter College, he took part in the early initiatives to restructure gatekeeper courses in SMET disciplines and develop research opportunities for undergraduates. He first served on the LSAMP Steering Committee in 1998 when he was Acting Dean of Hunter College's Division of Science and Mathematics. He now rejoins the committee as Acting Dean of the College's School of Arts and Sciences. Dr. Marino describes his story as "so very typical of CUNY students past and future." A member of an immigrant family which settled in Queens, he attended New York City's public schools before coming to City College, where he received his bachelor's degree in Physics. A doctorate from Brown University followed, as has a distinguished CUNY career. Dr. Marino served three times as Chair of Hunter's Department of Physics and Astronomy and has been Assistant Dean for Research, Planning, and Facilities in the School of Arts and Sciences. "Teaching at Hunter," he says, "has always been for me a nourishing and refreshing experience. I have equally enjoyed lecturing in 100-level courses and mentoring undergraduate, master's or doctoral research assistants." Dr. Marino cites the discovery and refinement of

experimental techniques that significantly enhance the sensitivity of nqr, a branch of nuclear magnetic resonance, as his most enduring scientific work.

"AS WE CHANGE THE WAY WE ADMIT STUDENTS, LSAMP WILL BE INCREASINGLY IMPORTANT AS A RECRUITMENT TOOL. TALENTED SCIENCE STUDENTS WILL BE LOOKING FOR FINANCIAL SUPPORT AND RESEARCH OPPORTUNITIES, AND LSAMP PROVIDES BOTH."

-DR. ROBERT MARINO

When asked about LSAMP's impact at Hunter, Dr. Marino speaks of the establishment of the learning center which, he says, came about as a direct result of the program. "LSAMP provided the stimulus that was necessary," he

says, "and the learning center has been very good for the learning environment in physics and chemistry here at the College. The activity coordinator position has also been very helpful to us." Dr. Marino still sees scope for further restructuring in physics. He points to an integrated course in physics, chemistry and mathematics which the College developed under a FIPSE grant and to how peer tutoring, group learning, and building bridges across disciplines led to huge strides in understanding. "In teaching physics," he says, "we often assume certain skills in mathematics, which the students may, in fact, not have acquired. This sets many students up for failure." In looking at LSAMP's future within the University, Dr. Marino says, "As we change the way we admit students, LSAMP will be increasingly important as a recruitment tool. Talented science students will be looking for financial support and research opportunities, and LSAMP provides both." 🍏

Continuing the LSAMP Mission in Phase 3: A Proposal from the Project Directors

Since 1992, LSAMP has benefited from remarkable stability in leadership. Eight years after the project's inception, three of the four original project directors, Neville Parker, Louise Squitieri and Leon Johnson, are still in place. We take pride in the fact that LSAMP has become a presence at sixteen undergraduate campuses and the CUNY Graduate Center, promoting the success of minority students in SMET disciplines, facilitating their path through the University, and making undergraduate research a given in CUNY laboratories. As LSAMP becomes more established, it is evolving. Our emphasis on reaching out to New York City's public schools and orienting CUNY SMET students towards precollegiate teaching and the professoriate continues to grow, as does our ability, as a mature program, to work in tandem with other programs within CUNY and at other institutions.

Gratified as we are by our accomplishments,

we recognize that we cannot depend forever on the level of National Science Foundation support we currently enjoy. At the end of Phase 2, we will have had ten years of generous NSF funding. We understand that this was meant to be catalytic. The challenge facing us now is to sustain and continue our work by generating as much outside funding as we can to supplement support from CUNY and the NSF.

The model of a consortium, established by CUNY's Board of Trustees in 1995, would be the ideal vehicle to move LSAMP forward. As defined by the Board of Trustees, a consortium is "an organized unit of the University whose mission is to coordinate the efforts of its individual components and in which no single component leads." This fits the way in which LSAMP has functioned since its inception. For LSAMP, becoming a consortium would not be a big leap but a logical transition. Being a consortium would allow us to create

links and collaborations with other funding agencies such as the Departments of Education and Energy and the National Institutes of Health and the private sector. Over the past eight years, LSAMP has broken new ground in empowering underrepresented minority students in SMET disciplines. As a consortium we could become a laboratory for best practices and a center for social scientific research and analysis. LSAMP could be a point of contact and residence for scholars, associates, and visiting faculty who could write grants and publish work on our central mission of increasing the number of underrepresented minority students who succeed in SMET to the baccalaureate and beyond.

All three LSAMP project directors are CUNY veterans. We know that the process of becoming a consortium is rigorous. It is, however, a challenge which we would welcome, and which we trust CUNY would support. 🍏



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