

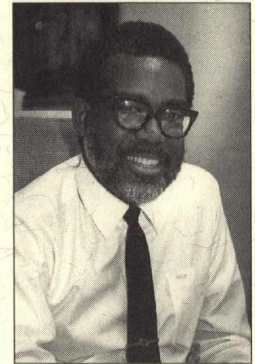
# NEW YORK CITY ALLIANCE NEWS



ALLIANCE FOR MINORITY PARTICIPATION IN SCIENCE, ENGINEERING AND MATHEMATICS

## *The AMP Mission: Making Inquiry the Inseparable Component of SMET Education, Thoughts from the Principal Investigator, Dr. Neville A. Parker*

When, six years ago, at the beginning of AMP's Phase I, we mooted the idea of undergraduates from senior and community colleges working in faculty laboratories, it was revolutionary. The prevailing wisdom was that research was an occupation for graduate students. This was a mindset which we had to break. And break it we did thanks to the willingness of our initial cadre of faculty mentors to join us in this bold initiative and to the stellar performance of our students once they entered the laboratory. Today we are well on our way to making research an intrinsic part of undergraduate education in SMET disciplines at CUNY. The numbers speak for themselves. During Phase II, we are supporting 160 Undergraduate Research Scholars annually and bringing 40 high school and 60 graduate students into faculty laboratories thanks to our funding. Getting to this point has been a crusade which is now in its seventh year. Though we are buoyed by our success, we must not rest until the idea of research in SMET disciplines at CUNY becomes second nature. I look forward to the day when we do not need specially designed programs such as AMP to offer undergraduates research experience, but when that experience is an integral part of all SMET teaching. Education that does not have inquiry as its basis is falling short of 21st century requirements. When we say the word education, it should automatically imply activities which are inquiry-based. My own experience is colored by the time I spent at the University of Dar Es Salaam in Tanzania, where, for six years of my tenure, I was responsible for six hundred teachers in the Teaching and Learning Improvement Program. I realized then that the issue was not teaching but the learning process. If we look at children's natural curiosity, at how readily they ask questions, and how they love to figure things out, we soon see that any educational program which does not capitalize on, encourage, and where necessary revive these instincts is not doing its job. That is why I hope that soon we will not say education and research, but simply education, realizing that in a university you cannot have one without the other. It will be gratifying to know that when we get to that point at CUNY, AMP will have played a significant role.



*Dr. Neville A. Parker  
NYC AMP Principal  
Investigator*

## **NYC AMP Students Shine at NSF Research Conference**

In July, students from New York City AMP and Project Directors Drs. Neville Parker and Leon Johnson and Dean Louise Squitieri took part in an AMP tradition: the NSF Summer Research Conference. The event, now in its sixth year, brings together students from across the country to share their research and meet peers who are working in a wide variety of scientific disciplines. This year's gathering was hosted by All Nations AMP at Salish Kootenai College in Pablo, Montana. It was a special cultural experience for the NYC AMP participants, giving them a rare opportunity to learn about Native American traditions and to enjoy the natural wonders of the Flathead Valley.

For NYC AMP, the conference was a proud moment. The Alliance brought six presenters to Montana, and three of them took top honors: Shelly Ann Miller of Brooklyn College took first prize for

*(Continued on page 2)*

## **NYC AMP Launches Its Seventh Year**

In September, AMP prepared for its seventh year, the second of Phase II, with three priority-setting administrative meetings. On September 11th, AMP's Steering Committee, made up of college deans and vice-presidents, gathered at City College. With Principal Investigator Dr. Neville Parker as chair, the group discussed the role of leadership in ensuring AMP's effectiveness on CUNY campuses. The group agreed on the overriding importance of the Campus Steering Committees which they chair at their colleges. These are made up of the heads of SMET departments with the AMP Activity Coordinator serving as secretary. The group recognized that for AMP to reach the maximum number of students and perform well, they and the other members of their committees must be informed, engaged, and proactive.

On September 18th, AMP's Activity Coordinators came together for a discussion and briefing by the Project Administrator, Dr.

*(Continued on page 3)*



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**New York City Alliance News**

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The New York City Alliance for Minority Participation is funded by a grant from the National Science Foundation.



*The AMP team at the Research Conference (from left to right): top row: Claude Brathwaite, Neville Parker, Leon Johnson; middle row: Louise Squitieri, Jerry Ianni, Lilian Garcia, JaimeLee Cohen, Elizabeth Galban; bottom row: David Cervetti, Shelly Ann Miller; missing: Melody Zevallos*

*Research Conference (Continued from page 1)*

her poster presentation, "Sexually Dimorphic Effects of MK-801 on Puberty;" Melody Zevallos of City College received first prize for her oral presentation, "Use of Construction and Demolition Debris as a Substitute for Virgin Aggregates in Asphalt Pavement;" and Lilian Garcia of LaGuardia Community College was awarded second prize for her poster presentation, "Algorithmic Procedures for Finding Permutations Realizable as Symmetries of a Regular N-gon." Excellent presentations were also made by David Garcia Cervetti of BMCC, "Animations of Series Approximations of Trigonometric Functions," Elizabeth Galban of New York City Technical College, "A Tutorial in Microstrip Filter Design for Telecommunications Technology Students," and Jaimelee Iolani Cohen of Queens College, "Synthesis and Characteristics of Polycationic Strings."

All of the presenters appreciated the opportunity to travel to Montana and experience an environment so different from their own. In addition to the give and take with other student researchers, they found the conference enriching in many ways. David Cervetti attended sessions aimed at faculty and gained insights into teaching practices and issues. Melody Zevallos gleaned practical information from sessions on debt management, careers, and graduate schools. Lilian Garcia, a community college student, had reassuring discussions about the university experience with students from senior colleges. JaimeLee Iolani Cohen appreciated the interaction with professors. "They treated us as colleagues and spoke to us as equals," she says. "I felt that they really wanted us to succeed."

Mentoring is an AMP hallmark, and this year, for the first time, one of the program's sixteen CUNY campuses sent a faculty mentor to the conference. Dean Clifton Clarke, the AMP Steering Committee member at LaGuardia Community College, decided that Professor Jerry G. Ianni of the Mathematics Department should accompany his student Lilian Garcia to Montana. "Professor Ianni is an exceptionally dedicated and enthusiastic mentor who is helping a promising student become a first-rate mathematician," says Dean Clarke. "Sending him to the conference was a way of recognizing his excellent work and of giving him an opportunity for professional growth." Dean Clarke wanted Professor Ianni to experience the scope of the AMP program and to see that he was working within the context of a nationwide effort to help minority students tackle the hurdles which they encounter on the road to



## **The AMP Research Conference, the Reminiscences of Elizabeth Galban**

*"When I arrived at the Missoula Airport in Montana, it seemed as though I were in a dream. I looked around and all I could see was mountains and trees. The view was enchanting. It was so different from the city life I was accustomed to. The first evening, at the welcome dinner, I met students from all over the country. The dinner began with an Indian prayer, and an Indian group chanted and sang traditional songs.*

*The next morning, I was so nervous, I could hardly think or focus. My oral presentation was at 10:30 am at Salish Kootenai College. During breakfast at the college, we were asked to form a circle and to focus on our grandparents. The conference was supposed to be in honor of our grandparents. As the time for my presentation drew nearer Dr. Parker and Dr. Squitieri gave me some encouraging words, and as I began to speak, nervousness quickly left me and I felt calm and relaxed. Although I didn't win the competition, it was a wonderful experience.*

*That night I went to my first "Pow-Wow" and participated in the tribal dances. The next day I went to the career fair and obtained a lot of information towards my major. Monday, I went hiking. The landscape was gorgeous. Being close to the mountains and clear air felt like a dream. The last night, the Awards Banquet was held. It was fun just being there and sharing with my fellow NYC AMP students.*

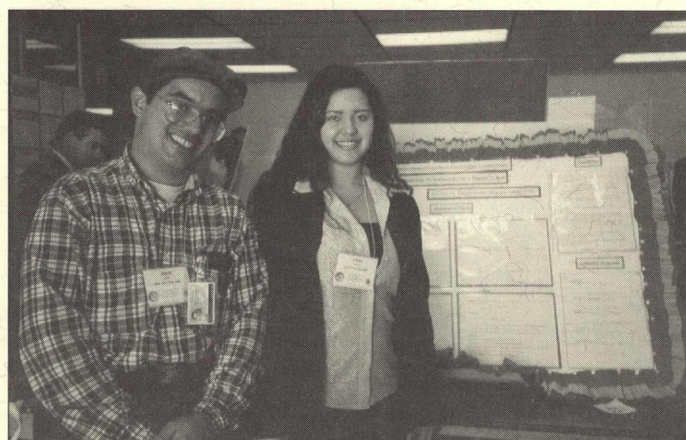
*As I boarded the airplane to go home, I realized that I would probably never come back, but I am grateful for having had the opportunity to go and learn as much as I did. The culture of the American Indians is extraordinary. I didn't learn all about it, but I learned to appreciate it."*



*Shelly Ann Miller with Dr. Roosevelt Calbert (right) and Dr. A. James Hicks of the National Science Foundation*

becoming scientists. Dean Clarke thought that the AMP gathering was the perfect vehicle to help Professor Ianni, who is a non-minority mentor, gain increased familiarity with the challenges which confront minority students and enhance his confidence in dealing with them.

From Professor Ianni's point of view, the conference was gratifying and worthwhile. He had developed a close mentoring relationship with Lilian Garcia at a time when she was discovering her academic capability, and it was rewarding for him to support her and to share the excitement of her presentation. The event also broadened his professional horizons. "I saw first-hand the determination of minority students and their advisors, and had excellent conversations with minority mentors," he says. "One activity was particularly moving and thought-provoking," he continues. "We saw a film called *Follow Me Home* which deals with struggles and internal conflicts in the minority community, and afterwards we participated in a discussion led by the director. I have thought about the film a lot, and I am determined to continue working towards resolving the issues it raises." Of mentoring, Professor Ianni says, "We have to be willing to give of ourselves and to provide our students with the opportunity to develop all that



*Professor Jerry G. Ianni and his mentee Lilian Garcia*

they have within them. That is what I set out to do with Lilian, and she really responded. The time I spent in Montana will help me do my job even better."

### *Opening Meetings (Continued from page 1)*

Claude Brathwaite. The Coordinators are CUNY graduate students who devote twenty hours a week to AMP and receive a yearly stipend and a tuition waiver for the CUNY Graduate School. They are part of the AMP SMET pipeline, which starts at the pre-college level and continues through the doctorate.

What emerged from the session is that being an Activity Coordinator is a serious, responsible administrative job. Dr. Brathwaite emphasized record-keeping and tracking. The Coordinators, he said, had to be resources for every student who came to their offices and should be familiar not only with the opportunities offered by AMP, but with those available through other SMET programs, such as MARC and MBRS, and with the role of Student Services. "Even students who do not meet the AMP eligibility requirements," he said, "should leave your office with information which will help them further their SMET studies." He concluded,



“If Coordinators do their jobs well, AMP will be a university-wide resource, able, in some capacity, to serve any student interested in SMET.”

Dr. Brathwaite emphasized communication between Coordinators on different campuses as key to keeping students in CUNY as they progress from community to senior college and in helping AMP Research Scholars search the university for appropriate mentors. In this vein, Professor Larry Muller of LaGuardia Community College gave a presentation on the AMP Virtual Institute, which, as it becomes established, will be a major communication tool both inside NYC AMP and between the New York Alliance and Alliances around the country.

The meetings culminated on September 25th, when CUNY’s Interim Chancellor, Christoph Kimmich, chaired an enthusiastic and supportive session of AMP’s Governing Board. In his opening remarks, the Chancellor commended AMP’s administrators and faculty mentors for the accomplishments of Phase I, which he called a springboard for success in Phase II. As Dr. Neville Parker presented issues to the Board, his underlying theme was the determination to run a rigorous program and to meet or exceed the Al-

liance’s target number of minority SMET BA/BS degrees. Matters discussed included expanding the number of research scholars; making AMP’s most talented students aware of the opportunities at CUNY and retaining them in the system; expanding summer activities such as the partnership with Brookhaven National Laboratory and TRACC (Transfer and Retention at City College); engaging more community college faculty in research; and expediting the development of AMP’s precollege and teacher preparation components.

As in the Steering Committee and Activity Coordinator meetings, there was a strong emphasis on campus-based programs as the hallmark of Phase II, with the AMP central office providing guidance and support and ensuring accountability. The Chancellor spoke of maintaining communication and making certain that the work was being done at every level. He concurred that active Campus Steering Committees were essential to AMP’s effectiveness and emphasized the role of college presidents in visibly endorsing AMP and providing leadership on their campuses. AMP was cited as an exemplary program which the Committee on External Relations of CUNY Presidents should publicize to the university’s outside constituencies.

### *The President’s View: Thoughts on AMP from CUNY’s College Presidents*

#### ***Dr. Emilie Cozzi, Acting President, New York City Technical College***

In Dr. Emilie Cozzi, AMP has a staunch supporter of its programs and philosophy. Dr. Cozzi’s enthusiasm for AMP was fueled several years ago when, as City Tech’s provost, she took a group of faculty and administrators to Bronx Community College to observe and participate in a research class taught by Project Director Louise Squitieri. Dr. Cozzi came away determined that research by faculty and undergraduates would become an institutional commitment at City Tech. In hiring SMET faculty, Dr. Cozzi has emphasized the college’s support for AMP and the expectation that instructors will be mentors who promote research experience for their students. Dr. Cozzi has been instrumental in institutionalizing AMP’s initiatives, including the activity coordinator position, peer tutors, and restructured sections of calculus and chemistry. Thanks to her leadership, City Tech’s strategic plan contains a commitment to research.

Dr. Cozzi has made a point of participating in AMP activities. At the 1997 AMP research conference in Las Cruces, New Mexico, she was thrilled to see so many student researchers preparing for and delivering their presentations. “In fact,” she says, “it was such a stimulating experience that I attended this year’s conference in Montana.” According to Dr. Cozzi, it is hard to overestimate the impact of AMP on SMET students. “My interest in and support for AMP continue to grow because I have seen how it transforms students and fuels their aspirations,” she says. “Students may enter college thinking that their career options are limited and having no

conception that they can do research. AMP has the capacity to open new doors for them. In informal discussions, when I find students who are interested in science, I make sure that they become aware of the opportunities which AMP has to offer.”

Dr. Cozzi points out that the road to becoming a scientist can be both intellectually and logistically daunting. “At City Tech,” she says, “we are determined to do everything we can to smooth that path.” The college arranged babysitting so that a student could deliver a presentation at the 1993 AMP research conference, and when a 1998 graduate was awarded a summer research assistantship in the lab of a Nobel laureate at Harvard, the New York City Technical College Foundation paid her living expenses in Cambridge.



*Dr. Emilie Cozzi, Acting President, New York City Technical College*

“There is nothing more exciting,” says Dr. Cozzi, “than seeing a student’s potential being actualized. I am thrilled when one of our students masters the vocabulary of science and technology and



fluently discusses his or her research.” “It elevates the entire institution,” she continues, “to see its students excel. I highlight these achievements when I speak, particularly at graduation, and the

### ***Dr. Claude Brathwaite Is Named AMP Project Administrator***

For Dr. Claude Brathwaite, becoming the AMP Project Administrator is a CUNY homecoming. Dr. Brathwaite first came to CUNY in 1982 when he entered Hostos Community College with plans to become a medical laboratory technician. He was soon counseled to aim for medical school, and he transferred to City College. Once at City, Dr. Brathwaite found that his true interest lay in research chemistry.

Dr. Brathwaite became involved in research early in his academic career. At a City College soccer practice, he found himself talking to Dr. Valerie Balogh-Nair, and their conversation led to the opportunity to work in her laboratory where his initial research centered on visual pigments. “From the beginning,” he says, “Dr. Balogh-Nair presented research as understandable and doable. That attitude gave me my start in research science, and I intend to promote it at AMP.” Dr. Brathwaite continued in Dr. Balogh-Nair’s lab while in graduate school. He has worked on synthesizing novel anti-HIV compounds and is particularly interested in using chemistry in conjunction with other disciplines.

After receiving his doctorate from CUNY, Dr. Brathwaite spent his first post-doctoral year as a Chancellor’s Fellow in the MAGNET (Minority Access to Graduate Networking) program at the CUNY Graduate School, working with Drs. Gail Smith and Pamela Reid. Beginning in 1995, he pursued three further years of biomedical training in the Division of Molecular Medicine of the Cornell University Medical College.

Mentoring has always been part of Dr. Brathwaite’s university experience. While in graduate school at CUNY he worked with students in the MARC (Minority Access to Research Careers) and MBRS (Minority Biomedical Research Support) programs. At Cornell, he continued his involvement with undergraduates through the Avon Summer Research Program.

### ***CUNY/AMP Students Spend the Summer at Brookhaven***

Since 1995, AMP students have been taking part in the Community College Honors Program at the Brookhaven National Laboratory (BNL) Science Education Center. For ten weeks during the summer, community college students work alongside Brookhaven’s scientific, technical and professional staff. Brookhaven carries out basic and applied research in physical, biomedical, and

audience cheers. At New York City Technical College we continually strive towards excellence in SMET disciplines, and AMP is helping our students do great things.”

It is these two prongs of his experience, research and mentoring, which Dr. Brathwaite hopes to bring to bear on his administrative responsibilities at AMP. “I look forward to working closely with the Activity Coordinators to create a seamless program which engages students from high school through graduate school,” he says. “This is a tremendous opportunity to work programmatically,” he continues. “In Phase II we will be taking best practices generated across the country and developing catalytic programs which will have a defining impact on CUNY SMET education and on New York City. AMP is an ideal vehicle for educational reform. We have already made huge strides in making research an intrinsic part of SMET learning. Our Undergraduate Research Scholars demonstrate what AMP can accomplish. They are our best ambassadors to their peers within the university.”

Dr. Brathwaite plans to spend much of his time on AMP’s sixteen participating CUNY campuses raising the program’s profile and making both students and faculty aware of what it has to offer. “I will ensure that the Learning Centers are fulfilling their mission of helping CUNY students succeed in SMET disciplines and I will support them as they endeavor to incorporate best educational practices into SMET learning,” he says.



***AMP Project Administrator Dr. Claude Brathwaite, left with Dean Gail Smith of the CUNY Graduate School and Dr. Neville Parker***

environmental sciences and in selected energy technologies, offering AMP students a wealth of opportunities for scientific research and technical experience. Three CUNY colleges are involved in the collaborative enrichment partnership with Brookhaven. They are New York City Technical College, Bronx Community College, and LaGuardia Community College. AMP provides summer stipends for participating students.

In 1998, five AMP students went to Brookhaven. Taofeek Rabi,



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who graduated from LaGuardia last spring, worked in the BNL Network Organization Group gathering data on the topology of the laboratory's network of four thousand computers. He was able to spend as much time as he wanted on the computer and, in the course of the summer, learned CGI programming. Thanks to the technical skills he acquired at Brookhaven, he is now working as the webmaster at a language center and saving money towards tuition for his bachelor's degree.

Jermaine Clarke, a Bronx Community College chemistry major with an interest in ecology, monitored groundwater in the town of Brookhaven for contaminant leachate from the landfill. He also took a course in geological studies at Suffolk Community College and hopes to continue in that field when he finishes his chemistry degree. "The people at Brookhaven treated me like a colleague," he says. "I never felt out of place, and I hope to go back next summer."

New York City Technical College sent three students to Brookhaven:

Zena Alvarez, a computer science major, designed a web page for BNL's Instrumentation Division Training Program and developed database management programs on Microsoft Access and spreadsheets on Microsoft Excel to monitor chemical usage in the PC labs. She took a programming class in JAVA and seminars in

physics and chemistry. "Brookhaven opened new worlds for me," she says. "My supervisor convinced me to move into computer engineering for my bachelor's degree."

Senetze Henry, whose fields are electrical engineering and telecommunications, worked on various aspects of Brookhaven's phone system. "In addition to technical expertise," he says, "I acquired life skills. I learned how to be businesslike. Placing orders and speaking to company representatives was empowering. People at Brookhaven encouraged me to learn as much as I could."

Americo Segura, a senior in electromechanical engineering, assisted with the design and fabrication of tooling and equipment needed for the construction of a superconducting magnet. "The hands-on work at Brookhaven," he says, "gave me a much better grasp of my field. The training was very practical and I enjoyed the interaction with working scientists."

In summing up the program, Project Director Dean Louise Squitieri says, "The partnership with Brookhaven fully recognizes and maximizes the ability and potential of students in associate degree programs. It allows our undergraduates to spend the summer on a suburban campus, meet students from other institutions, and enjoy a top quality research or technical experience. It shows that institutions can collaborate, even at a distance. I hope that the program will continue and that it will grow."