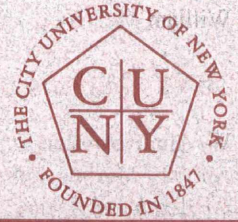


# NEW YORK CITY ALLIANCE NEWS



ALLIANCE FOR MINORITY PARTICIPATION IN SCIENCE, ENGINEERING AND MATHEMATICS

## *Phase Two at AMP: Expanding into Teacher Preparation and Social and Behavioral Sciences*

The National Science Foundation has approved funding for the New York City Alliance's second phase. The five year grant could total more than a million dollars a year, including support for teacher preparation and social and behavioral science initiatives. The funding of Phase Two is a validation of AMP's past successes. It is predicated on the institutionalization of AMP's groundbreaking cooperative learning, course restructuring, and undergraduate research initiatives, which have revolutionized the teaching of SMET disciplines across CUNY.

The NSF's Division of Undergraduate Education is putting strong emphasis on teacher preparation, and the development of K-12 science and mathematics teachers will be a major thrust of the New York City Alliance's second phase. A program is already underway, funded by the \$103,691 teacher preparation supplement AMP was awarded for the 1996-1997 year. The NYC-AMP Teacher Prep Initiative has three goals:

- To increase the number of individuals from minority groups who complete teacher preparation requirements, attain certification, and gain teaching positions.
- To enhance the knowledge base of pre- and in-service teachers in science content and innovative pedagogical approaches.
- To develop a new model of teacher preparation, emphasizing research-training in science content, creative uses of technology, inquiry-based teaching methods, and roles for master teachers from the public schools, which can be disseminated to and replicated at other colleges and universities.

The project will be implemented in collaboration with the Urban Systemic Initiative (USI), College Excellence in Teacher Preparation (CETP), NASA's Math, Science, and Technology Teachers for the Next Millennium (MASTAP), Brookhaven National Laboratories, and the United States Food and Drug Administration. AMP students will become resources for New York City school districts. They will serve as peer tutors, conducting collaborative learning workshops in science, mathematics, and technology (SMT) in schools with the lowest Regents scores; act as teaching assistants, helping junior and senior high school teachers with the formulation, implementation, and evaluation of computer-assisted learning, classroom instruction, and enrichment exercises; and serve as guest lecturers in SMT seminars and short courses for CETP science and non-science teacher preparation students and secondary school faculty.

*"The New York City Alliance faces significant challenges as it makes the transition from Phase One to Phase Two. It must institutionalize its successful Phase One initiatives in the face of serious budget cuts affecting the University. And, it must continue to increase SMET graduation rates despite the decline in enrollment precipitated by decreases in student aid.*

*The Alliance will have to be aggressive in convincing students enrolled in non-SMET programs, especially community college students in occupational programs, to pursue four-year, SMET degrees. To do this, we will rely heavily on the Steering Committee members, Activity Coordinators, and faculty research mentors who have been the program's backbone."*

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

Because of NYC AMP's Phase Two commitment to teacher preparation, the project's leadership found the recent *Alliances for Minority Participation Teacher Preparation Conference and Project Directors' Meeting* very timely. The event took place in Puerto Rico in March, and Project Directors Louise Squitieri and Leon Johnson and Project Administrator Frank Scalzo attended. "The conference provided us with excellent information," says Dr. Johnson. "It addressed teacher prep issues from the university and the district perspectives. Presentations filled in the history and talked about current issues. We also learned about model programs such as the Puerto Rico Teacher Preparation Component. We are fairly new at this, so it was good to be listeners. Next time we will be able to contribute from our own experience."

In addition to expanding into teacher preparation, AMP has received a \$25,000 planning grant to develop a social and behavioral sciences component. Should the proposal be accepted, NYC AMP will institute a program to increase the number of underrepresented minority students who earn bachelor's and graduate degrees in the social and behavioral sciences; become



## National Science Foundation, Alliance for Minority Participation

William McHenry, *Program Director*

## CUNY Central Administration

W. Ann Reynolds, *Chancellor*

Anne L. Martin, *Acting Vice Chancellor  
for Academic Affairs*

## Project Directors

Neville Parker	<i>City</i>
Louise Squitieri	<i>NY City Technical</i>
Leon Johnson	<i>Medgar Evers</i>

## Project Administrator

Frank Scalzo	<i>Queensborough</i>
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## Senior Administrative Assistant

Jeanette Schnabel	<i>City</i>
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## Administrative Assistant

Maria Colabella	<i>City</i>
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## Steering Committee

Louis Antonio Baez	<i>Hostos</i>
Sadie Bragg	<i>BMCC</i>
Clifton Clarke	<i>LaGuardia</i>
David Entin	<i>NY City Technical</i>
Erwin Fleissner	<i>Hunter</i>
Norman Goldman	<i>Queens</i>
Louise Hainline	<i>Brooklyn</i>
Ted Hanley	<i>York</i>
Marcia Keizs	<i>Queensborough</i>
Thelma Malle	<i>Kingsborough</i>
*Carl Polowczyk	<i>Bronx</i>
Joseph Rachlin	<i>Lehman</i>
Edward Tucker	<i>Baruch</i>
Ronald Simmons	<i>City</i>
Doris Withers	<i>Medgar Evers</i>
Martel Zeldin	<i>College of Staten Island</i>

## New York City Alliance News

**Editor:** Helena Leslie

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

### \*In Memoriam

The New York City Alliance deeply mourns the untimely passing of Dean Carl Polowczyk of Bronx Community College.

teachers in an urban, multicultural environment; and conduct community-based research which emphasizes the impact of science and technology. Like the Teacher Prep Initiative, the Behavioral and Social Science Initiative will be implemented in partnership with USI and CETP.

## The CUNY/GISS Collaboration Yields Multimedia Courseware

The 1996 NASA/GISS Summer Institute on Climate and Planets saw a very productive collaboration between Professor Bruce Naples of Queensborough Community College, NASA scientist Barbara Carlson, and AMP research scholar Corey Holder. Working together, they developed multimedia courseware which provides a model for effectively disseminating information and research related to a specific scientific topic. The courseware allows teachers and students to become interactively involved in the analysis of real data, addressing real world research questions. It also enables working scientists who wish to share their expertise with students to do so without having to be physically present in schools.

The topic chosen for the group's first effort was "Aerosols in Our Atmosphere - Cause and Effect." It is an important environmental issue, which is poorly understood, and a good candidate for the courseware's interactive, self-paced approach. The courseware permits users to learn how measurement instruments such as the sun photometer function. It provides background information so that users can explore the topic and master concepts necessary for the analysis and interpretation of scientific evidence. Its users develop skills which are applicable to many scientific topics.

The courseware is a fine educational companion to the research material and scientific data available on the World Wide Web, with which it will eventually interface. In the future the courseware will also provide a link between science curricula and research being done at other scientific institutions.

The NASA project is but one example of Professor Naples's and Queensborough's trailblazing use of computer technology to create innovative teaching tools. A member of the college's Electrical and Computer Engineering Technology (ECET) Department, Mr. Naples has been part of a team led by Professor Bernard E. Mohr and including Professors Nathan Chao, Thomas J. Gerson, Stuart Asser, and Pericles Emmanuel, and staff member Dennis McGarrigle, which has received three back-to-back grants from the National Science Foundation to pursue its groundbreaking work. Queensborough's AMP research scholars have played an important role in all three projects.

The first grant, *A Connectivity Laboratory to Strengthen Engineering Technology* resulted in Queensborough's model multimedia/networking classroom. The second, *Engineering Technology Instruction for the 21st Century* allowed ECET to develop a comprehensive instructional support system based on advanced technologies which revolutionized the teaching of Electronics I and Microcomputers. Finally, under *Technology Instruction in the 21st Century*, the group created multimedia instructional materials for multimedia and high speed networks, data acquisition and embedded systems. All three endeavors were so successful that they were designated as National Science Foundation Flagship Projects. With NSF funding, Professor Mohr and his team are conducting summer workshops to share their experience with other faculty members and teach them how to create their own courseware.



## *An Interdisciplinary Symposium Takes Place at City College*

Under the joint sponsorship of the NSF-funded AMP and Workshop Chemistry and the NASA-funded MASTAP (Math, Science, and Technology Teachers for the Next Millennium) and MU-SPIN (Minority Universities Space Interdisciplinary Network), the *Chemistry/Physics Faculty and Workshop Leader Symposium* took place at City College in January. The two-day event drew eighty participants from ten CUNY campuses. The moving forces behind the symposium were Leon Johnson, Professor of Physics at Medgar Evers College and an AMP and MASTAP project director; David Gosser, Professor of Chemistry at City College and project director of the Workshop Chemistry Project; and Ellen Goldstein, Director of the Aerospace Leadership Institute at the NASA Regional Teacher Resource Center at City College.

Sixty students, who serve as workshop leaders, and twenty faculty members took part in the symposium, honing their knowledge of the workshop model and their interactive teaching skills. At the outset, they divided into small groups and spent a half an hour determining their learning styles - an important bridge to understanding the individual learning needs of their workshop participants. Dr. Gosser introduced the groups to concept mapping, and each one produced a poster of its concept map of a hydrogen atom. This served both as an exercise in cooperative learning and as a demonstration of how concept mapping can be used as a tool to assess content mastery and comprehension. In the afternoon, workshop leaders discussed different approaches to conducting workshops, problems which arise in teaching students of differing abilities, and workshop preparation. Faculty focused on interdisciplinary curricular development and on cooperation across institutional lines.

The symposium proved so compelling that faculty members, not scheduled to take part in the second day, arrived anyway. The groups reconvened and concentrated on the issue of creating a positive workshop learning environment, addressing the anxieties of workshop leaders. They moved on to electronic communication, learning about accessing the Internet, including the Workshop Chemistry interactive home page, "Workshop



*Professor David Gosser working with participants at the Chemistry/Physics Faculty and Workshop Leader Symposium*  
Credit: Leon Johnson

### *Reactions from Participants in the Chemistry/Physics Faculty and Workshop Leader Symposium*

*"After the open discussion on cooperative learning, I have come to realize how important and helpful group studying can be. At first, I was intimidated by the presence of three faculty members, but soon I began to relax.... By listening to other workshop leaders, I learned of strategies which will be useful in future workshop sessions."*

*"Workshop leadership has taken on a whole new meaning. It is something more than tutoring. It is fostering collaboration and helping students to work together."*

*"Today's training has given me a clearer understanding of what a workshop is.... Although I am a teaching assistant now, this training has given me some very interesting and useful ideas.... Workshops may be a better teaching method than recitation."*

*"Coming into this conference we listed our concerns about workshops and were able to address them. The conference has been very helpful. It has prepared us for problems we will face, allowed us to examine problems we have faced, and given us advice on how to solve them."*

*"During the meeting, I was able to put myself in a situation similar to that of workshop students; however, I did so with the people who administer and coordinate the project. This gave me a chance to actually feel like part of the project's driving force. I had the opportunity to meet workshop leaders from other schools and to learn how they do things at their home colleges. Amazingly, there are many ways in which we differ in our methods."*



Cafe,” and, for the more advanced students, about HTML and Network Administration.

The symposium, which was open to all CUNY campuses, served as the initial meeting of Professor Goldstein’s course, “Learning Strategies for Workshop Leaders,” offered during the spring semester at City College. The course is based on the case study method and runs concurrently with the workshops. Leaders bring their experiences to class and use them as the basis for discussions

on how to motivate students, assess their study skills and comprehension levels, and communicate their own expectations. Journal writing is a key tool in the course. It requires students to reflect on their daily experience as workshop leaders and on the pedagogical materials contained in a workshop leader’s handbook developed by Professor Goldstein. Copies of the handbook were distributed to all symposium participants, thus disseminating the course’s materials and concepts to other CUNY campuses.

## STEERING COMMITTEE PROFILES

### *Dean Charles B. Watkins, School of Engineering, City College*

“Mine has been a traditional academic career, with a mixture of research, teaching, and administration,” says Dean Charles Watkins, “I have focused on institutions and programs which have a special mission to serve the needs of underrepresented minorities in terms of access to careers in science and engineering.” Dr. Watkins holds degrees from Howard University and the University of New Mexico, where he earned his Ph.D. At City, he is the Herbert G. Kayser Professor of Mechanical Engineering. Highlights of his pre-CUNY career include the chairmanship of the Mechanical Engineering Department at Howard; an ASME fellowship at the National Governors’ Association; and research at Sandia National Laboratories. Dr. Watkins holds key positions in many prestigious professional organizations and is widely published in his field.

A founding member of the AMP Steering Committee, Dr. Watkins brought to the Alliance his experience of several highly pertinent City College initiatives. PRES (Program for the Retention of Engineering Students) in the Division of Engineering, under Assistant Dean A. Ramona Brown and CCAPP (City College Academy for Professional Preparation) in the Division of Science, under Assistant Dean Millicent Roth, have provided models for the SMET learning centers which AMP has established across CUNY. “Both PRES and CCAPP,” he says, “have demonstrated that programs designed to provide academic and social support services for minority students are relevant to all City students. Though they may be of different ethnicities, students at City come from economically disadvantaged backgrounds and share the same needs.” Further reflecting the AMP philosophy, he says, “Minority engineering programs at City have stressed research experience, and since engineering is a degree which confers professional status at the bachelor’s level, there has been a strong emphasis on academic excellence.” Dr. Watkins points out that calculus restructuring, another AMP cornerstone, originated at City, funded by the Sloan Foundation which supports PRES.



*Dean Charles B. Watkins  
Credit: City College*

“AMP,” says Dr. Watkins, “has served to focus attention on the goal of producing scientists and engineers and, with support from the University, has provided the resources for achieving this. It has developed a framework for tying the University together and has engendered a remarkable degree of cross-University cooperation. The challenge is to sustain and institutionalize the program in difficult budgetary times. The future is uncertain, but the appointment of a new set of CUNY Trustees should be an opportunity for AMP to showcase its achievements.”

Dr. Watkins will leave the AMP Steering Committee at the end of the semester. As he contemplates the end of his tenure, he says, “So much of AMP’s success is due to the dedication of my Steering Committee colleagues, the Project Directors, and the Project Administrator and his staff. I congratulate them all on their perseverance.” Dr. Watkins will be succeeded by City’s Deputy Provost Ronald Simmons. “It is not my intention to lose touch with AMP, and I will continue to support the program,” he says. “Dr. Simmons is an excellent choice. He has given retention issues at City a new level of importance, and it will be excellent for him to strengthen his contacts with AMP.”



## AMP STUDENTS IN THE NEWS

### *JaimeLee Iolani Cohen, Queens College*

A native of Hawaii who came to New York when she was eighteen, JaimeLee Cohen is succeeding brilliantly at CUNY. She began her university career at Queensborough Community College with an eye to becoming a nurse. A course in organic chemistry changed her mind. "A teacher can make all the difference," she says. "Taking chemistry from Professor Paris Svoronos was a turning point for me. I became fascinated with the subject." Cohen also discovered mathematics, and her math professor suggested that she enter the AMP program. She became a calculus tutor and a mentee of AMP Project Administrator, Dr. Frank Scalzo.

When Cohen graduated from Queensborough last June with a major in biochemistry, she was valedictorian of her class and received awards for excellence in mathematics, biological science, library research, opera, and for achieving the highest grade point averages in general chemistry, organic chemistry, and the sciences. In addition, the Phi Beta Kappa Association of New York chose her to receive the \$2,000 scholarship which it presents annually to a science major from a community college. Academic success was a heady experience which brought with it a profile in *New York Newsday* and articles in the local papers.

Today, Cohen is a student at Queens College where she continues her major in biochemistry and is considering a minor in mathematics. She is pursuing the research which she began under AMP auspices at Queensborough. Her project, under the mentorship of Dr. Robert Engel, entails synthesizing an antibiotic. "Professors at Queensborough prepared me so well," she says, "that I feel completely comfortable in a four-year college. AMP has

### *The AMP/Polytechnic Connection: David Vargas and Abdon Whitelocke*

For Queensborough graduate **David Vargas** the transition to Polytechnic University was an easy one. "Before my last year at Queensborough," he says, "I met with my advisor at Poly, and so I knew exactly which courses to take." Vargas, who was an engineering science major at Queensborough will graduate from Poly this semester with a degree in mechanical engineering.

Vargas's association with AMP has remained a constant thread in his academic career. He started out as a calculus and physics tutor at Queensborough and, in the summer of 1994, became an AMP research scholar at NASA/GISS. Over the next two years he worked at the writing and validation of atmospheric dynamics



*Jaime Lee Iolani Cohen at her Queensborough graduation flanked by her children Tiffany Leilani and Joshua Kahanapukahi*

opened a lot of doors for me. It got me interested in mathematics, introduced me to professors, and gave me the incredible opportunity to do research." Cohen's AMP research preparation should serve her well. Her ambition is to find a cure for diabetes.

CUNY has enhanced Cohen's life in another very special way. "I have an eight-year old daughter and a three-year old son," she says. "Since I have gone back to school, I have seen how my daughter emulates me. She sees how hard I study, and she tries hard too. My CUNY experience has shown me just how important education is."

programs. His current project is a complete change of pace. He is developing finite element models of human bones, creating computer models with the mechanical properties of bones which can be used to perform stress analysis.

Vargas's hard work at both Queensborough and Polytechnic has paid off. He graduates this semester and was in the enviable position of choosing between four very attractive offers from industry. He has elected to join Exxon in Houston, Texas, where he will be a fixed equipment engineer in a chemical plant. He plans to go to graduate school in three or four years. When he resumes his studies, he will do so part-time, continuing his career at Exxon, and the company will pay his tuition. "There is no doubt in my mind," he says, "that my AMP experience is largely responsible for the wonderful offers I have had. AMP gave me



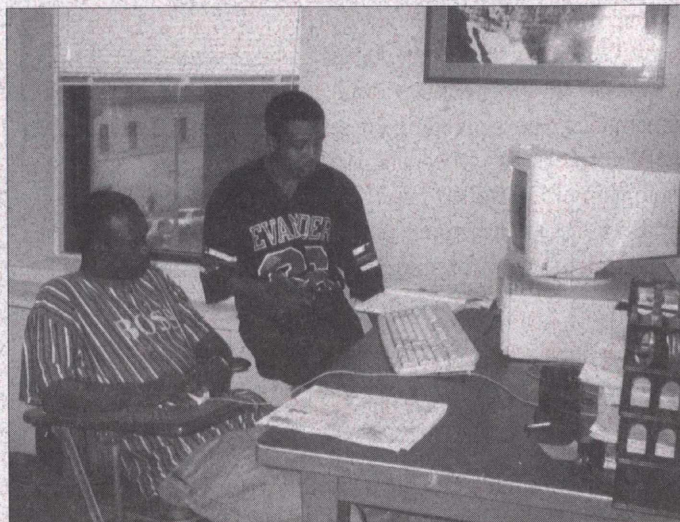
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## NEW YORK CITY ALLIANCE

the financial support to do research and the opportunity to interact with scientists. It developed my self-confidence and allowed me to grow.”

For **Abdon Whitelocke**, Queensborough was a wonderful place to begin undergraduate studies. “Queensborough is a great campus,” he says. “I worked hard, but I also enjoyed myself. In addition to my classwork, I was involved in extracurricular activities. Opportunities in track and field made it possible to relax after a long day of studying.” Whitelocke majored in engineering science and was very active in CSTEP (College Science and Technology Entry Program) and in Tau Alpha Phi. “Queensborough is where I developed academic discipline and leadership skills,” he says. “They served me very well when I moved to Polytechnic. Queensborough prepared me in my field, and that allowed me to feel comfortable in a new environment.”

AMP played an important part in Whitelocke’s undergraduate experience. He began his AMP involvement as a calculus tutor and quickly became a research scholar at NASA/GISS. His work entailed analyzing satellite data to learn more about the cloud patterns within hurricanes in the Caribbean. Whitelocke continued in GISS when he moved to Poly. “My research has meant a lot to me,” he says, “and I hope that someone will continue where I left off.”



*Abdon Whitelocke (left) with fellow research scholar Dwayne Williams at NASA/GISS*

Whitelocke, who graduates this semester, is in the final stages of his job search, interviewing with prestigious companies for positions in telecommunications and networking. He is at ease with the process, and gives his early experiences at Queensborough and his research at NASA much credit for the confidence he feels.