

NEW YORK CITY ALLIANCE NEWS



ALLIANCE FOR MINORITY PARTICIPATION IN SCIENCE, ENGINEERING AND MATHEMATICS

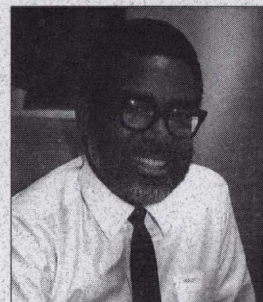
With AMP in Transition Between Phase I and Phase II, a Message from the Principal Investigator, Dr. Neville A. Parker

Following five years of innovation, creativity, cooperation, and success, the New York City Alliance is at a critical point as the Phase I grant draws to a close and we look towards Phase II. During Phase I, we put in place the basic building blocks of SMET reform across the University. We established or solidified activity centers on all CUNY campuses and staffed them with the coordinators who are the backbone of the AMP program. We instigated the restructuring of courses in calculus, chemistry, and physics. We created the Undergraduate Research Scholarship Program, which now engages one hundred students a year in original research in faculty laboratories.

With Phase I coming to an end, **we must institutionalize these accomplishments or we will not qualify for Phase II funding from the National Science Foundation.** Maintaining these important initiatives and supporting the AMP office costs \$1.5 million a year. Despite the current climate of fiscal constraint, CUNY will provide an initial \$400,000 of that requirement. We must, however, appeal to every college president, every SMET dean, and every research scientist in the University to find money in their budgets to support the groundbreaking reforms which AMP has brought about.

If, **and only if**, we can show the NSF that we are institutionalizing Phase I, can we move on from this base of accomplishment to the new initiatives of Phase II. These include a Graduate Research Scholarship Program for sixty students; an **additional** sixty undergraduate research scholars; financial support for forty high school students entering CUNY; stipends for forty CUNY research faculty; and an additional fifty participants in the highly successful SEMRAP (Science, Engineering and Mathematics Research Articulation Program).

We have come a long way over the past five years, and the opportunity to engage in AMP Phase II is not to be missed, but miss it we shall if we do not find the funds to fully institutionalize Phase I. So many of you have remarked that AMP brought CUNY's scientists, mathematicians, and engineers together as never before and that it created a new spirit of cooperation between community and senior colleges. It is now time to call on that sense of community and to dig deep into our resources to support a program which has brought new levels of hope, support, opportunity, and excellence to science, mathematics, engineering, and technology students at CUNY.



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

The Fifth Annual NSF/AMP Research Conference Expands Horizons for CUNY Participants

This past July, New Mexico AMP and New Mexico State University (NMSU) at Las Cruces provided a warm welcome and a complete change of scene for six of the New York City Alliance's most gifted Research Scholars. Accompanied by Project Directors Dr. Neville Parker and Dean Louise Squitieri and Project Administrator Dr. Frank Scalzo, students Richard Homawoo, Ely N. Duenas, Karl Francis, Moyah Spencer, Naved Rehman, and Jamilah M. Seifullah took part in a conference which offered intellectual

stimulation, networking opportunities, and Southwester hospitality. Dr. Ricardo B. Jaquez, Director of New Mexico AMP described his state as home to "a thriving variety of aerospace, research, computer, electronics, and defense industries," making it an ideal place for future scientific leaders to gather.

The conference provided guidance on practical matters of interest to all students through workshops entitled *Preparing for the Graduate Record Exam*, *Planning Your College Career*:

National Science Foundation, Alliance for Minority Participation

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New York City Alliance News

Editor: Helena Leslie

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From left to right: AMP Research Scholars Karl Francis, Jamilah Seifullah, Naved Rehman, Richard Homawoo, Ely Duenas, and Moyah Spencer enjoy a break at the NSF/AMP Research Conference.

Credit: Frank Scalzo

Academic Achievement Plan, and Funding Your Education. Keynote speeches were delivered by Assistant NSF Director Dr. Luther S. Williams; Dr. Richard Tapia of Rice University, the 1996 Hispanic Engineer of the Year; and Adriana Ocampo, a geologist who is currently working in Flight Project Missions Operations at the Jet Propulsion Laboratory and hopes to become a Space Shuttle Mission Specialist. A panel on *Women in Science and Engineering* gave conference attendees the opportunity to hear exceptionally distinguished women scientists, including Dr. Ellen Ochoa, a NASA astronaut who has logged over 484 hours in space.

The three-day event was a valuable experience for all six CUNY/AMP students. Naved Rehman, a Baruch College graduate in mathematics who is continuing his AMP research for a year prior to entering graduate school, was pleased to have the opportunity to hone his presentation skills and share his work with others. For Moyah Spencer, a New York City Technical College graduate currently majoring in chemistry at Hunter College, and Ely Duenas, who transferred from LaGuardia to Hunter where she is studying physics, the meeting was an opportunity to learn about research in fields other than their own. Richard Homawoo, who transferred from Bronx Community College to City College where he is majoring in mathematics and computer science, speaks of how preparing his oral presentation focused his intellectual energies. Of the conference he says, "The atmosphere was great. Interacting with people from different schools gave me a real boost. Experiences like this keep you going." Karl Francis, an engineering science major at the College of Staten Island who is headed for graduate school in astronautical engineering, and Jamilah Seifullah, a Borough of Manhattan Community College graduate now majoring in mathematics at City College, found networking with private sector representatives to be a conference high point. Ms. Seifullah was offered internships by Apple and IBM. Mr. Francis made contacts not only for himself but for friends back home. As a result of meeting AMP Project Administrator, Dr. Frank Scalzo, both he and Ms. Seifullah will be presenting their research at the MU-SPIN Seventh Annual User's Conference to be hosted by City College in October. Summing up his experience in New Mexico, Mr. Francis said, "The conference allowed me to gage the sophistication of my research and to assess where I stand in the scientific community. The feeling of scientific camaraderie was tremendous."

"It is my firm belief that research should be an integral part of undergraduate education. Participating in major scientific conferences is an important aspect of the research experience.

At conferences, young scientists make presentations to their peers, exposing themselves to a very constructive form of scrutiny. They must work within the constraints of time and adjust their delivery to communicate effectively with the audience. In poster sessions, students must cope with intense questioning which ranges from the expert to the elementary and tailor their explanations accordingly.

Participating in conferences presents challenges different from those of the home campus laboratories where students do their research. Sharing their work with the larger scientific community is an essential part of young scientists' education."

Dr. Neville A. Parker, AMP Principal Investigator

ICP Web Site Materials Evaluated by Distinguished Panel

For the past three years, the NASA GISS Institute on Climate and Planets (ICP) has been dedicated to making research a vital component of undergraduate and precollege science education. It has brought students and faculty from CUNY and the New York City Public Schools to the GISS (Goddard Institute for Space Studies) facility on the Columbia University campus, where they have done cutting edge research in teams led by NASA scientists. The ICP has always intended to disseminate this research experience as widely as possible. The first step it took was to electronically link participating schools and colleges to GISS, so that students and faculty could do ICP work from their own campuses. Now, it will extend its reach even further through the ICP Web, which will function as a virtual institute. The Web site will provide the resources necessary to structure an earth science course based on NASA climate and planetary investigations. These will include interactive, problem-based learning activities, research projects, reference materials, and the opportunity to dialogue with peers and scientists and receive feedback on research findings.

In August, a distinguished panel met at GISS to evaluate course



Dr. James Hansen, Head of NASA GISS, addressing the ICP Web Evaluation Team

Credit: NASA GISS

modules which will be field tested this fall. "In examining the Web pages, we saw the fruits of three years labor in terms of research and curriculum development," said AMP Project Administrator

Web Pages Presented at the ICP Summer Institute Web Site Evaluation

How Are Clouds Connected to Climate Change?

A. Philip Randolph High School Research Class

Preparing an Inventory of Global Methane

Mott Hall High School Environmental Science Class

How Does Sunlight Set in Motion the Ocean and Atmosphere?

Bronx High School of Science GeoSciences Class

Effects of Climate Variability on Hudson River Sturgeon

George Washington High School Research Club

Impacts of Climate on Water and Agriculture

School of the Future GeoSciences Class

Toy Modeling the Atmosphere

York College Meteorology Class

Climate Change and Acid Rain

A. Philip Randolph High School Research Class

El Nino and Is the Climate Changing?

Bronx Science GeoScience Class

Tracking High and Low Pressure Systems: What's Causing Extreme Weather?

MAST High School Research Class

Building a Sunphotometer

Townsend Harris High School Research Class

Building a Polarimeter

LaGuardia Community College Computer Science Projects

Dr. Frank Scalzo, an early ICP participant. "The evaluation process which we went through will ensure that these materials are top quality before we put them on the Internet." AMP's founding Principal Investigator, Dr. Fitzgerald B. Bramwell, who is now Vice President for Graduate Studies and Research at the University of Kentucky, returned to New York for the evaluation. "Detailed assessments such as Dr. Bramwell's, which identify areas where we have work to do as well as where we have succeeded, are invaluable if we are going to have a quality product," said Ms. Carolyn Harris, the ICP Director. "We want to give educators a tool they can use and meet the learning needs

of students through a curriculum which is based on cutting edge science and real-world research experiences."

In addition to Drs. Bramwell and Scalzo, the panel included leaders from the Goddard Space Flight Center, MU-SPIN, the National Institute of Standards and Technology (NIST), Barnard College, and the New York City Public Schools. Dr. Teri L. Quinn, the NIST representative, commended the Web page teams on their presentations and said that she expected the Web site to become "a much used and valuable resource in earth science and environmental curricula around the country."

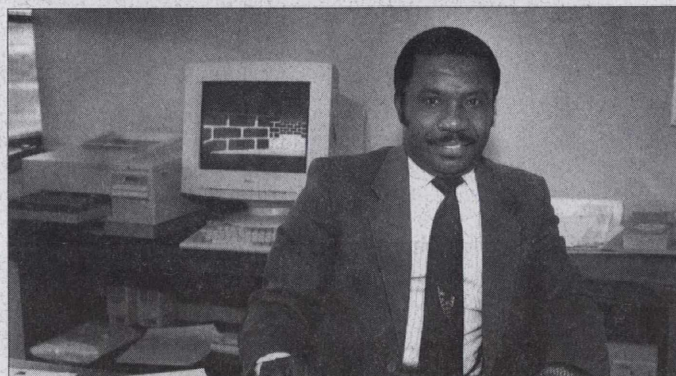
STEERING COMMITTEE PROFILES

Professor Clifton Clarke, LaGuardia Community College

For the past three years, Professor Clifton Clarke, Executive Associate to the Provost at LaGuardia Community College, has represented his campus on the AMP Steering Committee. At LaGuardia, Professor Clarke oversees strategic and academic program planning, budgets, enrollment management, technology and facilities, and faculty and staff administration for the Division of Academic Affairs. His broad responsibilities give him an excellent vantage point from which to integrate new programs into the life of the college. All of the NSF grants on campus come under his administrative umbrella, and he plays a leading role in the implementation of the MU-SPIN grant and in facilitating LaGuardia's work with the NASA/GISS Institute on Climate and Planets.

In his native Jamaica, Professor Clarke received his teaching certification in chemistry and general science. He later earned a master's degree in accounting and economics at Brooklyn College. A certified public accountant, he spent fifteen years as a financial executive in the private sector, including Fortune 500 companies. In 1986 he came to LaGuardia as a professor of accounting and taught for three years before joining the administration. Professor Clarke is currently completing his doctorate in higher education administration at Teachers College, Columbia University. "Though I have spent time in business," he says, "I am happy to be back in education. It is my first love."

Professor Clarke sees AMP as the engine behind many of the changes in SMET at LaGuardia. "The broad restructuring of calculus," he points out, "is based on AMP initiatives and funding." "LaGuardia," he continues, "has been moving science from the periphery of its program to the core. AMP has allowed us to diversify student participation in science and also to diversify our curriculum. Traditionally, we have concentrated on business, allied health, and computer science. AMP has provided



Professor Clifton Clarke

the impetus for broadening our offerings in the sciences and mathematics."

According to Professor Clarke, AMP is a pacesetter and a template for other grants. "AMP has established certain concepts as cornerstones of thinking at CUNY," he says. "One is the importance of undergraduate research for minority students and the necessity of supporting that research through stipends. The other is the concept of an educational pipeline from high school to community college, senior college, and graduate school. Articulation between two- and four-year colleges has flourished under AMP auspices."

When asked about AMP in Phase II, Professor Clarke responds that he sees an even more dynamic program with an expansion of the research scholarship component. "We have learned how to recruit students," he says, "and the faculty has become more sure-footed in working with minority students. We must continue to direct students towards the sciences and to expand the cooperation between community and senior colleges."

The MU-SPIN Seventh Annual Users' Conference Will Be Held at City College of New York and the Ft. Lee Hilton, October 8 - 10, 1997

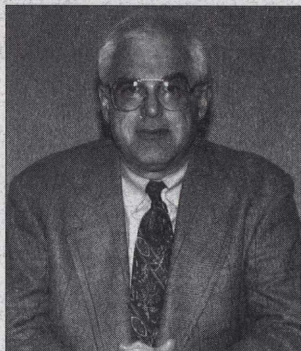
Highlights of this important SMET event will include:

- **presentations** on NASA's Mission to Planet Earth and Office of Space Science Programs and its Minority University Research and Education Division;
- **reports** from the seven MU-SPIN Network Resources Training Site Principal Investigators;
- **break-out sessions** on robotics, remote sensing/GIS, multimedia for courseware development, networking, and precollege SMET education programs;
- **student poster sessions.**

For further information, contact Dr. Shermane Austin at (212) 650-6165

Dean Dennis Weiss Assumes AMP Leadership at City College

With the expansion of his responsibilities to include admissions and registration, City College's Deputy Provost, Dr. Ronald Simmons has regretfully stepped down from the AMP Steering Committee. "AMP," he says, "gives all participating colleges an opportunity to work together to produce good students. I shall miss my involvement."



Dean Dennis Weiss

Succeeding Dr. Simmons is Dr. Dennis Weiss, who has been City College's Dean of Science since 1992. Dr. Weiss earned his bachelor's degree in geology at City and his doctorate at New York University. Prior to becoming Dean of Science, he served for twelve years as Chairman of the City College Department of Earth and Atmospheric Science.

As he undertakes a leadership role at AMP, Dean Weiss says that his primary concern will be to ensure that both City College and CUNY do their utmost to institutionalize AMP reforms. He is very conscious of the commitment which the university has made to the National Science Foundation that programs initiated under AMP will be sustained after the life of the grant. Dean Weiss points out that failing to fulfill that undertaking could have a negative impact on future NSF support for CUNY, not just through institutional and training grants, but also in the area of

research. "The rationale to institutionalize," he says, "is that so much of what AMP has put in place serves all science and engineering students. Newly restructured courses are open to all, and the work done on facilitating the transition from high school to community college and on to senior college benefits the entire student population." Dean Weiss further points out that at a time when CUNY is under tremendous pressure to improve the retention of students and the quality of its education, AMP is meeting these goals in science and engineering. "One of the most important tasks ahead," Dean Weiss concludes, "is for those of us on the Steering Committee to educate CUNY's trustees and the new Chancellor they will appoint about AMP and its unique impact on the University's SMET community."

The AMP Virtual Institute: Sharing AMP Experience on the Web

Since 1992, the Alliances for Minority Participation, supported by the National Science Foundation, have broken new ground in the SMET education of underrepresented minority students, increasing their college enrollment, degree completion, and overall academic achievement. Now, through the AMP Virtual Institute (AMP-VI), the program's strides in improving student outcomes and developing best educational practices will be disseminated through the World Wide Web. AMP-VI will provide academic institutions, industry, government, and private foundations with access to the innovative work done by the country's twenty-seven Alliances. The Institute will publish easy-to use, up-to-date information in a user-friendly manner, reaching a much wider audience than is possible through current dissemination methods.

AMP-VI will consist of an integrated network of six specialized Virtual Centers (VC). Each VC will assume primary responsibility for collecting, formatting, and posting information on a specific area of AMP expertise and experience. The sites will each receive \$150,000 dollars in NSF funding over an eighteen-month period beginning in January, 1998 and will be subject to review every few months. The division of responsibility is as follows:

- **Technology in Education** - *Western Alliance for Expanding Student Opportunities (WAESO);*
- **SMET Undergraduate Curriculum** - *Puerto Rico Alliance;*
- **Student Retention in 4-Year Institutions** - *Oklahoma Alliance;*
- **Articulation Between Community/Junior Colleges and Universities** - *Texas Alliance;*
- **Urban Education** - *CUNY Alliance;*
- **Formative Evaluation** - *UT-System Alliance.*

The AMP-VI aims to avoid the pitfall of being a dead-end home page with limited information. It plans to be a starting point for interested individuals, directing them to other useful Web sites and identifying key contact people for follow-up information and

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assistance. In addition the AMP-VI will host regional and national workshops which provide inter-alliance technical assistance and peer information dissemination. Each Virtual Center will offer on-site consulting to other Alliances on an as needed basis.

According to AMP Project Administrator Dr. Frank Scalzo, the New York City Alliance is looking forward to its new role, and is particularly proud that its Web pages will be constructed by CUNY AMP undergraduate and graduate students.

Mark Your Calendars for Two Outstanding CUNY Faculty Development Colloquia

CUNY Faculty Research and the Mentoring of Undergraduate Research Scholars

Host: Borough of Manhattan Community College

Date and Time: October 24, 1997, 9:00am to 4:00pm

Keynote Address: Dr. Luther Williams, Assistant Director Education and Human Resources, National Science Foundation

Program: faculty mentoring workshops and oral and poster presentations.

CUNY SMET Course Restructuring and the Mentoring of Student Workshop Leaders

Host: Hunter College

Date and Time: October 25, 1997, 9:00am to 3:00pm

Keynote Address: Dr. Ronald Thornton, Director of the Center for Science and Mathematics Training, Tufts University

Program: "Training of Workshop Leaders" (Ms. Ellen Goldstein, Coordinator of the NASA Teacher Resource Center, CCNY); demonstrations of restructured calculus, chemistry, and physics courses; "NASA/GISS Research and Related Curriculum Materials" (Ms. Carolyn Harris, Director of the NASA/GISS Institute on Climate and Planets).

For further information contact AMP Project Administrator Dr. Frank Scalzo

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