new york city alliance NEWS

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Transitions 2005

Dr. Neville A. Parker

Transitions are inevitable events that occur in the lifetime of an organization. The life of the NYC Louis Stokes Alliance, now in its thirteenth year, is highlighted by programmatic transitions that keep us relevant, vibrant and competitive while maintaining the Alliance's mission and message. Our transitions through Phases I to Phase III saw the institutionalization of LSAMP Learning Centers, restructured STEM courses, the LSAMP Central Office, LSAMP Activity Coordinator positions and the expansion of the LSAMP Research Scholar component. Commitment and support from the City University of New York played an essential role in the transitions at every phase of the Alliance.

The commitment of the Bridge to the Doctorate sites nationwide extends beyond the monetary matches made to host these students by offering guaranteed entry and support to doctoral programs. The host institutions have made commitments to a nationwide diversity experiment that is the logical transition upon completion of the baccalaureate degree. As member institutions of Phase III LSAMP programs, the selected host institutions are battle-tested practitioners in human resource development: having completed over a decade of activities that are now institutionalized contributing to the nation's STEM production of over twenty thousand baccalaureate degrees.

Our challenge here is to bring these participants into a community that continues to be nurturing and allows them to participate in every facet of being an academician. Their stay in the Bridge program should be consumed with the develop-

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Keizs to Success

By Rasheen Allen

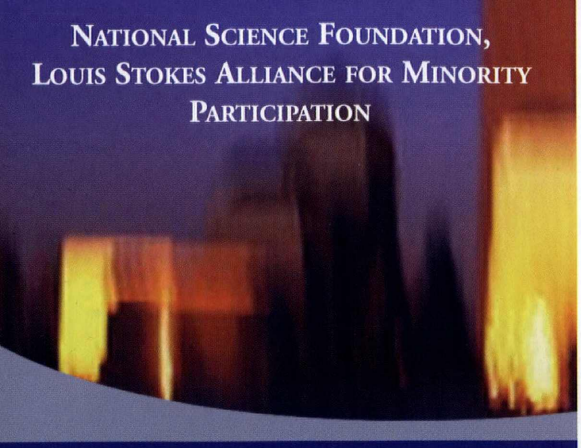
After a seven and half year tenure of dedicated service, Dr. Marcia Keizs resigned from her post as Vice President of Academic Affairs at Bronx Community College. As V.P. of the Office of Academic Affairs, Keizs was "responsible for all instructional activities at the college, including academic advisement, the Library and Gerald S. Lieblich Learning Resources Center, as well as many college-wide programs and grant funded programs."

On Thursday, February 10th, 2005, Keizs acknowledged and thanked the departmental chairs, faculty, administration, staff, students, the Executive Council, and President Williams, of B.C.C., for their tenacious and innovative commitment to academia. As Keizs vertically transitions to her new position as President of York College — located in Queens, N.Y. — she will look to bring the same dedication to intellectual excellence that she exhibited in the Bronx. "Strengthening the academic identity by expanding opportunities in teaching, learning, research, co-curricular programming, and internships will add value to a York College education," declared President Keizs who will also look to increase enrollment and retention at the college.

V.P. George Sanchez, formerly head of the Office of Institutional Development, will supplant Keizs as the new head of Academic Affairs at Bronx Community College.

Dr. Marcia Keizs served as the LSAMP Steering Committee representative for Bronx Community College.

National Science Foundation,
Louis Stokes Alliance for Minority Participation



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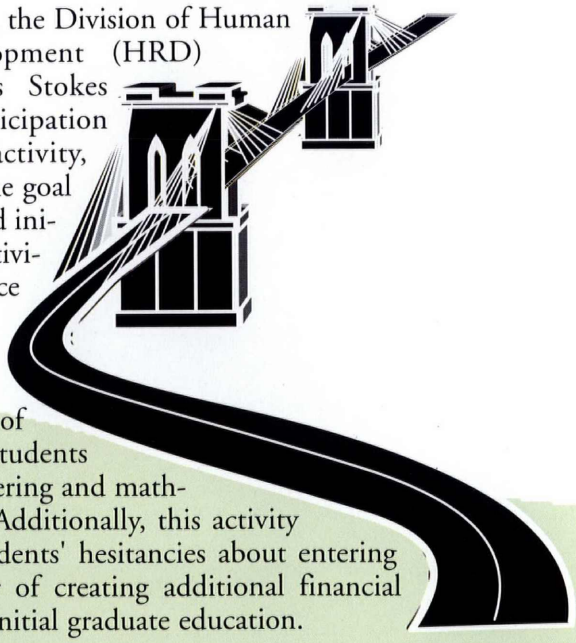
Transitions 2005 (con't)

ment of a portfolio of activities, academic course work and research training that will continue to prepare them for success in any doctoral program. We must be cognizant of the fact that the main question during their stay in the respective undergraduate program was when they will graduate and where they will go for graduate school? We were not consumed with if they would graduate?

We will see the return on investments in the Bridge to the Doctorate programs in the upcoming five to six years when the currently funded group of students graduate with doctoral degrees, complete post doctoral training and embark on careers in academia, and in industry and agency settings.

By any measure, these Bridge Scholars are capable of completing doctoral degrees. My only question relates to the time to completion and desire to pursue an academic career here at CUNY, or at the over two hundred institutions that are members of the LSAMP and AGEP network. Similar questions are now being asked of LSAMP and AGEP graduates who are now seeking faculty positions. Can a Bridge to the Faculty program be on the horizon?

Bridge to the Doctorate Program



The Directorate for Education and Human Resources through the Division of Human Resource Development (HRD) funds the Louis Stokes Alliances for Minority Participation (LSAMP) supplemental activity, "Bridge to the Doctorate." The goal of these supplements is to fund initial graduate degree bridge activity at Phase III LSAMP Alliance institutions.

This activity broadens participation through the attraction of underrepresented minority students in science, technology, engineering and mathematics (STEM) disciplines. Additionally, this activity seeks to remove minority students' hesitancies about entering graduate school and the fear of creating additional financial indebtedness associated with initial graduate education.

Program Activities

Participating institutions are providing highly valued activities such as mentoring of students, opportunities for students to travel to and participate in professional meetings, and host seminars and workshops. Examples of such workshops and seminars include the following:

* How to Thrive in Graduate school,
* Demystifying Doctorate and Post Doctorate Programs.
* Elements and Intricacies of the Science and Engineering Workforce Enterprise, (especially the professoriate,) and
* Choosing the Right Graduate School and Advisor

Dr. Thomas Windham

Thomas L. Windham, Ph.D. joined the National Science Foundation (NSF) in February 2004 as Senior Advisor for Science and Engineering Workforce and is the Foundation's focal point in addressing issues, strategies, and implementations centering on broadening participation of underrepresented groups in the science and engineering workforce. Windham serves as a member of the Director's immediate staff and participates in policy development and strategic planning.

Before coming to NSF Windham served as Director and Principal Investigator for UCAR's Significant Opportunities in Atmospheric Research and Science (SOARS,) program (www.ucar.edu/soars). SOARS is a multifaceted, multi-ethnic, multi-cultural science research and learning community at the University Corporation for Atmospheric Research (UCAR) and National Center for Atmospheric Research (NCAR), Boulder, CO. In December 2001, Windham accepted The Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring in Washington, D.C. on behalf of the SOARS program.

Windham was born in Harlem and is a graduate of New York City's High School of Music and Art. He received his Ph.D. in social-personality psychology at the University of Colorado (CU) at Boulder, under Professors Stuart Cook and John Forward. Additional professional training includes postdoctoral study in Clinical and Descriptive Psychology at the Linguistic Research Institute, Boulder, under Peter Ossorio, Ph.D. Windham earned the Specialist in Education graduate degree from CU at Denver, and MS and BA degrees in psychology from New Mexico Highlands University, Las Vegas. Windham's career track includes positions as a licensed clinical and community-organizational psychologist, educator, and CEO of a comprehensive community mental health center.

Windham has served as a Lecturer for the American Psychology Association's Distinguished Visitor Program, President of the Boulder Valley School District Board of Education, and Invited Science Education Columnist for The Boulder Daily Camera. Windham's recent community service includes memberships on the American Meteorological Society Board on Women and Minorities, CU Alliance for Graduate Education and the Professoriate (AGEP) Advisory Committee, CU Graduate School Advisory Committee, I Have a Dream Foundation of Boulder County, CO, NSF Advisory Committee for Geosciences, NSF Alan T. Waterman Selection Committee and NSF Committee on Equal Opportunities in Science and Engineering. Windham is currently a visiting professor in the Department of Science and Technology at Universidad Metropolitana, San Juan, Puerto Rico.

In 1997 Windham was awarded Boulder County's Ninth Annual Multicultural Award for Science. In January 2003, Windham received The Boulder Daily Camera Pacesetter Award for Science, in Medicine and Health.

Transitions 2005 Keynote

Florida Georgia Louis Stokes Alliance - FGLSAMP EXPO 2005

(University of Central Florida (UCF) January 27-30)

Four New York City LSAMP students made poster presentations in the areas of Mathematics, Computer Science and Engineering.

Poster Presentations

Solving Mathematical Problems - **Yisa Rumala**

Prerequisite Checking Using Prefix Notation and Depth-First Search - **Juan Ruiz**

Comparison of Hybrid Diesel-Electric Bus to Conventional Diesel Platform - **Cameron Clark**

Nonlinear Simulation of an F-16 Fighter Aircraft - **Clara Nieto-Wire.**

LtoR: Clara Nieto-Wire (Borough of Manhattan CC/City College),Cameron Clark (City College), Yisa Rumala (York College), and Juan Ruiz (LaGuardia CC/Queens College)

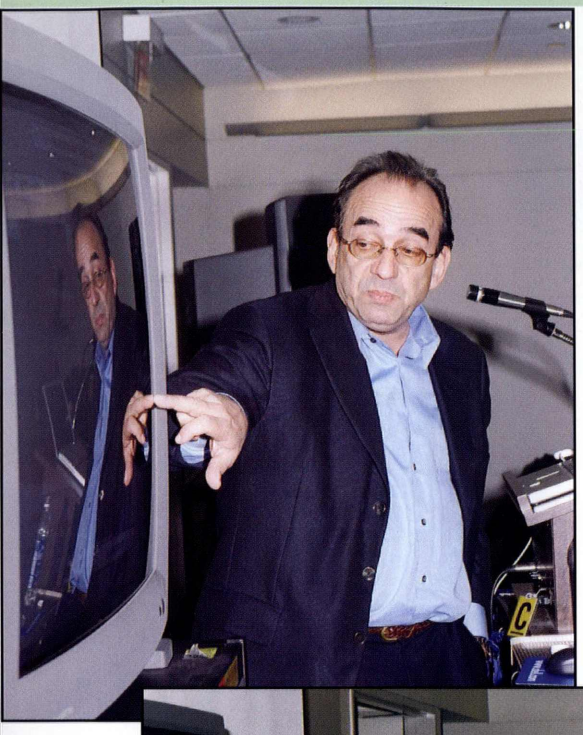
Highlights and Impressions-

- *Everyone at the conference could obtain a doctoral degree despite your circumstances.*
- *There is a need to obtain a doctoral degree in your respective disciplines.*
- *Presentation of valuable information on how to choose the doctoral institution and mentor.*
- *Important questions that students should ask when approaching a graduate institution.*
- *The application process and opportunities available through the Alliance for Graduate Education and the Professoriate (AGEP) program.*
- *Presentations on the significant contributions of African-Americans at NASA that made space exploration possible.*
- *STEM industry challenges and expectations of the 21st century.*
- *The importance of the portfolio and the definition of our internal purpose in these times of economic instability.*
- *Having a well-defined internal purpose will help us discover opportunities from work place difficulties.*
- *Studying Abroad can be an enriching and mind expanding experience.*
- *Challenges and successes during the initial start up phase of a minority owned technology firm.*
- *The experience of a young faculty member committed to diversity, and the efforts to ensure diversity at his university.*
- *Yisa Rumala won First Place for his poster presentation 'Solving Mathematical Problems.'*

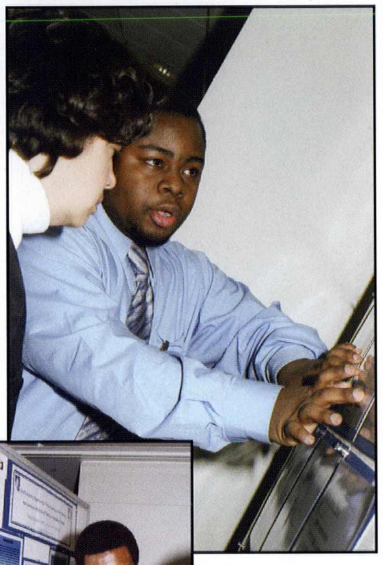
"This was a great opportunity to present our work, and to get to know other participants and their research work. It was also a good opportunity to learn more about the Louis Stokes Alliance for Minority Participation organization its history, goals and current activities. It was important to realize that there are people willing to share their knowledge and to help us get through in reaching our goals"

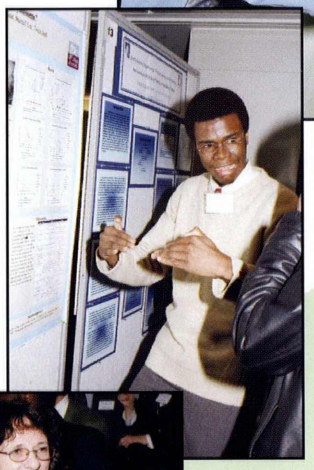
8th Annual CUNY Conference in Science & Engineering

Using Stem Cells in Science and Medicine



Ron McKay has been chief of the Laboratory of Molecular Biology in the basic neuroscience program of the National Institute of Neurological Disorders and Stroke since 1993, when he moved from the Massachusetts Institute of Technology. His first contribution to the field of neurobiology was showing that the differences between neurons were based on an entirely new chemistry. His recent work has focused on the stem cells of the nervous system. In a 1988 paper, he provided the first clear proof that neuronal precursors could be identified.





Dr. Martin Muntzel,
Lehman College

Dr. Gail Smith,
CUNY Graduate Center

In Their Own Words...

Thierry Desrosiers
New York City College of Technology
Mathematics, Junior
Mentor: Jonathan Natov

My name is Thierry Desrosiers. I was born in Brussels, Belgium in 1983. I grew up in Haiti where I spent my elementary, junior and high school years. In high school, I was indecisive as to what I was going to study because I had a passion for literature, but I never intended to be a writer or a teacher. When I joined the computer science program at New York City College of Technology, the love and passion for Mathematics grew profusely. My interest in Mathematics ranges from Statistics to Actuary and Finance. Currently, I am majoring in Financial Mathematics with a minor in Computer Science. I strongly believe that Mathematics can enhance the quality of life with its application to various studies.

Brownian Motion and Stock Pricing

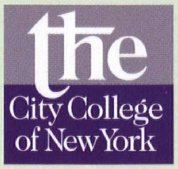
Our purpose is to determine whether or not a Geometric Brownian motion can be used to model stocks. If a collection of stocks follows a Geometric Brownian motion, it has to satisfy two conditions: the difference of the log of the closing prices must be normally distributed and future prices should not depend on previous prices. We download the closing prices for the S&P 500 as a collection of stocks. For our analysis, we used Excel to help us understand whether the S&P 500 stock follows a Geometric Brownian motion. The histogram of the chosen stock for the period chosen appears to satisfy the first condition. However, we need to readjust the bins to better determine if the histogram is normally distributed. Secondly, we need to prove or disprove the independence of future price and past price.

Clara Nieto-Wire
Borough of Manhattan CC/City College
Electrical Engineering, Graduate Student-Bridge Scholar
Mentor: Kenneth Sobel

I am a native Colombian woman and mother of two children. I came to the United States of America eleven years ago, and was pursuing a career in classical dance. In the fall of 1997 I decided to go back to school to pursue a career in science and mathematics. I realized that electrical engineering was what I wanted to do thanks to the invaluable opportunity provided by the LSAMP program to conduct undergraduate research, and also to tutor Mathematics at Borough of Manhattan Community College. At Borough of Manhattan Community College I received an Associate Degree in Science in June 2000. I then completed the requirements and received an Associate Degree in Engineering Science in June 2001. I completed my Bachelor's Degree in Electrical Engineering at City College of New York in Fall 2004. I am currently a Bridge to the Doctorate Scholar and will be entering the Doctoral program in Fall 2005.

Nonlinear Simulation of an F-16 Fighter Aircraft

Flight simulations are a vital part of the design of flight control systems. We have implemented the six degrees of freedom (6-DOF) nonlinear aircraft simulation described in "Aircraft Control and Simulation" by Brian L. Stevens and Frank L. Lewis. This allows a nonlinear six-degrees-of-freedom simulation for an F-16 fighter aircraft. To implement the controller we have used conventional aircraft control surfaces, elevator, aileron and rudder. The five simulations developed in this project give the same results as the ones in "Aircraft Control and Simulation". This is an indication that the revision of the software (MatLab Aircraft Control Toolbox), flight control system implementation and any other necessary extension to the software was correctly done. Our future work will include the nonlinear simulation of an aircraft which uses non conventional control surfaces such as the Innovative Control Effectors aircraft.



Cameron Clark
City College
Mechanical Engineering, Senior
Mentor: Neville A. Parker

Being born and raised in Brooklyn, New York, I've always dreamed of becoming something/someone "big", reflecting the city in which I live. While attending parochial school during my elementary years, I discovered a love for math and science, which continued to grow while attending Midwood High School in Brooklyn, NY. It was during high school that I

Continued on next page

Bridging the Gap to a Doctoral Degree

By Rasheen Allen

Terry Cook has his own unique recipe for success, which involves the challenging and ever-burgeoning field of computer science. As an undergraduate majoring in computer science at Lehman College, he graduated Magna Cum Laude and received departmental honors. Aside from understanding the value of academic excellence, Terry Cook has always understood the value of community service. In May of 2000, he received the "Volunteer of the Year" award for his two years of devoted service — as a literacy volunteer — to the women of the Taconic Correctional Facility. Recently, he has donated some of his time to tutoring students in mathematics at the High School of American Studies, which is located on the Lehman College campus.

Now, as a second-year master's student and a dedicated research scholar in the Bridge to the Doctorate program, he has been rapt in an eighteen month long research project under the guidance and tutelage of his mentor Professor Gwang Jung at Lehman College. Professor Jung provides invaluable expertise in many areas of computer science including operating systems, E-commerce, and information retrieval.

"The discipline of Computer Science requires not only an understanding of high-level computer courses, but mathematical courses as well," said Cook who has always been captivated by machinery and circuitry. His ongoing research project entails determining the optimality range for inverted files, which are necessary for information retrieval from vast repositories of heterogeneous data — such as Google or Boolean Internet search, using specific terms to locate documents containing a desired term or phrase.

As the demand for information retrieval — acquisition and dissemination — grows, the efficiency of indexing methods for these information stores must increase synchronously. Inverted files can be restricted by increased size and complexity, which makes them slower to update. There are three indexing stages of inverted file architecture: building the file, updating the file, and searching the file. However, Cook and his mentor are focusing specifically on "optimizing indexers, primarily in the building stage." Cook enjoys his research, and this project is helping him to gain immeasurable knowledge in the field of computer science.

In early February, Terry Cook received an acceptance letter into the Computer Science Doctoral program at the CUNY Graduate Center, where he hopes to successfully cross over the bridge to the doctorate.

In their own words...(con't) *-Cameron Clark-*

decided to become an engineer. In my eyes, being an engineer was a "big" achievement because they have tremendous impact on their society and the world. I also knew that the education required to become an engineer is not easily attained. Influenced by my love of planes, I chose to study aerospace engineering at Georgia Institute of Technology in Atlanta, Georgia. The rigorous courses in conjunction with a job proved to be too much to handle. Despite my best efforts, I was unable to continue in the Engineering program. Although disheartened, I continued to believe in myself and transferred to The City College of New York where I continued my studies in Mechanical Engineering. Upon completion of my undergraduate degree, I will pursue graduate degrees in Mechanical Engineering with a focus in Fluids.

In-service Evaluation and Comparison of Hybrid Diesel-Electric Bus Technology to Conventional Diesel Platform – NYC Transit Case Study

The goal of this project is to evaluate hybrid and conventional diesel bus technologies with respect to emissions, fuel economy, and key costs and benefits. This evaluation will provide transit agencies, policymakers, and managers with a decision-making tool/resource when considering deployment of hybrid diesel-electric over conventional diesel buses. A summary matrix presenting emissions, fuel economy, and cost and benefits figures for hybrid diesel-electric (Orion VI) and conventional diesel (Orion V) bus platforms was produced. Analysis revealed that emission levels and fuel economy of hybrid diesel-electric technology represents a significant improvement upon a conventional diesel platform. This resulted in low infrastructure modification costs. Capital and maintenance costs, however, decrease the overall attractiveness of hybrid diesel-electric technology to transit agencies. Since alternative fuels and advanced technologies in transit application are encouraged by government, which mandates decreased emissions and fuel consumption, it is recommended to invest in hybrid diesel-electric technology as a means of improving the overall quality of life and decreasing reliance upon conventional fuels.

CUTC Student Award Renamed in Honor of Professor Neville A. Parker

During the January 8, 2005 Annual Banquet of the Council of University Transportation Centers (CUTC), which precedes the Annual Meeting of the Transportation Research Board in Washington, D.C., the CUTC Non-Thesis Masters Degree Award was renamed in honor of Neville A. Parker, Ph.D., P.E. The Neville A. Parker Award will be recognized with two other prestigious CUTC Awards, The Milton Pikarsky Memorial Award and The Charley V. Wootan Memorial Award. These distinguished awards are presented for outstanding masters, doctoral dissertations, and theses, in transportation, produced at leading colleges, university transportation centers, and institutes throughout the nation.

The Council of University Transportation Centers (CUTC) was established in 1979 by the major transportation research centers and institutes in the United States. CUTC is a Tennessee not-for-profit corporation and a recognized IRS 501C(3) organization. CUTC promotes continued dialogue among its member institutions, and provides a forum for the centers to interact collectively with government and industry. CUTC's membership represents over 60 of the nation's leading university-based transportation research and education programs. Collectively, CUTC members have advanced the state-of-the-art in all modes and disciplines of transportation. In doing so, the membership of CUTC has made significant and lasting contributions to the nation's mobility, economy, and defense.

Neville A. Parker is a Herbert G. Kayser Professor of Civil Engineering and the Director of the City University of New York (CUNY) Institute for Transportation Systems (ITS), at The City College of New York. Professor Neville Parker has been the Director of the CUNY ITS since 1989. He is the Principal Investigator of the NYC Louis Stokes Alliance and a Co-Principal Investigator of the CUNY-led Alliance for Graduate Education and the Professoriate Program.

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