LOUIS STOKES ALLIANCE CUNY FOR MINORITY PARTICIPATION

NSF

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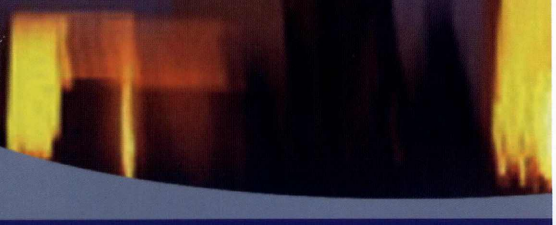
NYC ALLIANCE RESEARCH: Summer at CUNY

Alexandria Wise, Doctoral Candidate in Neuroscience, CUNY

The LSAMP Summer at CUNY Program hosted sixty students conducting research in various S.T.E.M. fields. The main purpose of this experience was to increase exposure of minority students to a research setting and provide resources to help strengthen writing and presentation skills. In addition to submitting a final report and presenting a poster, students attended thursday seminars, which included topics on graduate school preparation, research ethics, and data analysis. The sixty students were divided into six groups that had a Graduate Student Advisor (GSA) who was a LSAMP Graduate Scholar or a Bridge Fellow. Each GSA was responsible for critiquing their student's presentations, editing research reports and providing support to the students in their group. Surveys distributed determined that many of the students appreciated the rigorous challenge of presenting their research and learning how to write better scientific documents. This allowed for improved presentation skills and help building students confidence in writing.

National Science Foundation,
Louis Stokes Alliance for Minority Participation



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Individuals wishing to be added to the mailing list should contact Jeanette Schnabel at (212) 650-8854, fax (212) 650-8855.

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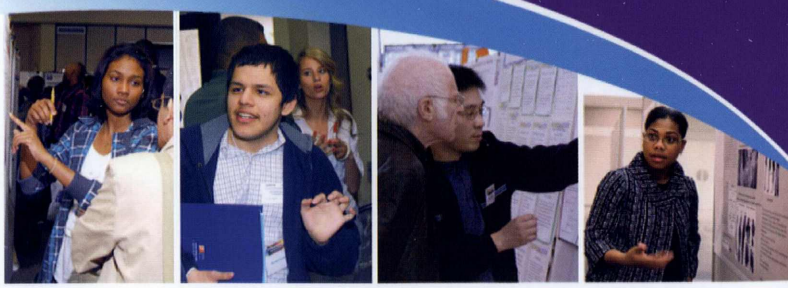
EINSTEINS in the city



2011 Einsteins in the City

in conjunction with the

Urban University Conference Series

"Transcending Boundaries"

A multidisciplinary student research conference

APRIL 14-15, 2011

The City College of New York

www.einsteinsinthecity.com

SPEAKERS

Roberta Maierhofer

Vice Rector for International Relations and Interdisciplinary Cooperation, University of Graz, Austria and NAWI Graz

Rob DeSalle

Curator in the Division of Invertebrate Zoology, American Museum of Natural History

Charles J. Vörösmarty

Professor of civil engineering, Distinguished Scientist with NOAA-Cooperative Remote Sensing Science and Technology Center and Director of the CUNY Environmental Crossroads Initiative at The City College of New York

LOUIS STOKES ALLIANCE CUNY FOR MINORITY PARTICIPATION

PHAGE HUNTERS WORKSHOP

Howard Hughes Medical Institute: The Science Education Alliance

Summary provided by Dr. Rafael Ovalle

Dr. Rafael Ovalle of Brooklyn College (second row first from the right) with the participants of the Phage Hunters Workshop

LSAMP Scholars from Hostos CC, Borough of Manhattan CC, La Guardia CC, Medgar Evers College, John Jay and Brooklyn College participated in the program.

The ultimate scientific goal of the NGRI program is to exhaustively survey the Earth's biosphere for mycobacteriophages in order to develop them into biomedical tools. To achieve the scientific goal of conducting a comprehensive inventory of mycobacteriophages, the SEA requires an army of fledgling scientists. Collectively in two years, student participants in 36 classes have made more than 200 successful isolations, have deposited 60 new genome sequences, and have found 15 taxa of phages that attack Mycobacterium smegmatis. Given that viruses can be isolated from any corner of the biosphere, hundreds of thousands of isolations will be required to exhaustively survey the mycobacteriophages.

To achieve these goals simultaneously, HHMI is publishing and distributing to the SEA consortium the In Situ and In Silico laboratory manuals. The In Situ lab manual instructs on how to successfully isolate phages from soil samples, purify them, and ends with partial identification of the phages. The In Silico manual instructs students in the use of bioinformatics to fully annotate the isolated viruses. The HHMI program of instruction envisions a 2-semester full year course taught at the freshman / sophomore level with discovery of viruses in the first semester and annotation of nucleic acid sequences in the second semester.

The goal of Phage Hunters Workshop (PHW) proposal was to synergistically combine the missions of the SEA, the NYC-LSAMP, and Brooklyn College by using the NGRI In Situ lab program as a summer research experience for undergraduate workshop within the LSAMP at Brooklyn College. The goals of this pilot program were:

1) to allow the SEA to reach a large group of students through a mechanism different from the original model of recruitment of individual colleges;
2) to offer to NYC-LSAMP a research project capable of accommodating any number of students, give the students valid laboratory training and an authentic research experience, and produce relevant scientific discoveries in an 8-week framework.
3) to field-test the HHMI's new educational paradigm at Brooklyn College where it can be evaluated for its potential as a future offering in the Biology major.

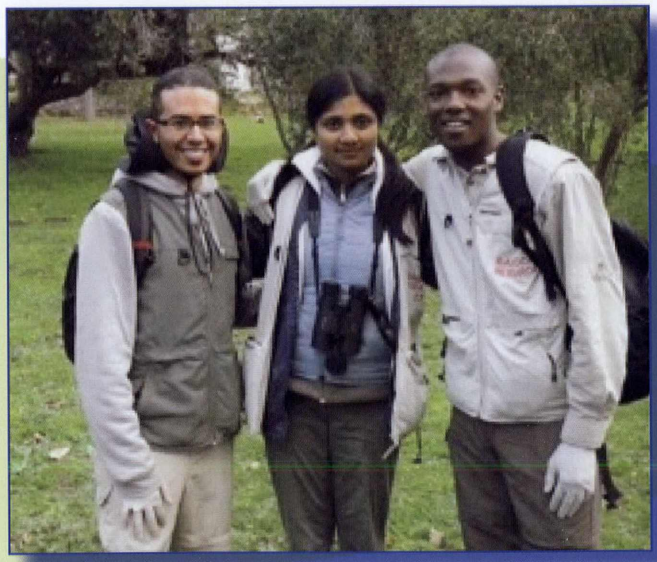
Austria

Austria has been an amazing opportunity for me to further develop knowledge and skills that will propel me into PhD studies and career in science and engineering. This program has strengthened my global experience and enriched my view to the outside world.

~Abdelhamid Jnane, Bridge Scholar-City College

In the last four years, over fifty LSAMP Scholars have traveled to Austria, Brazil, Germany, China, Colombia, Costa Rica, Ecuador, Ethiopia, France, Ghana, the Netherlands, Italy, Mexico, South Africa, Sweden, Singapore, and Togo to conduct research. Integrating a Study Abroad or International Research experience into undergraduate and graduate training can be invaluable.

South Africa



All in all, being away from home and learning how to function and think as a scientist has really changed me. The study abroad experience was especially good because it allows one to see other cultures and people of the world. This experience is sure to take me far and I have already gained so much from it.

~Brad Reberio (first from left), Queens College

Environmental Monitoring And Assessment In Cartagena, Colombia

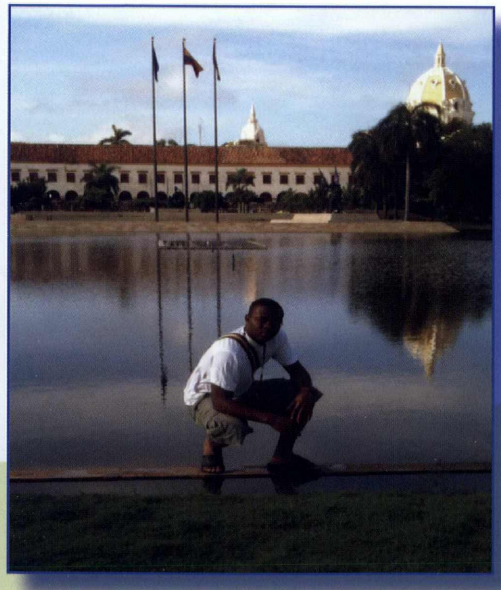
Universidad de San Buenaventura, Universidad de Cartagena, Cartagena, Colombia

The initial general project objective is to produce environmental monitoring baseline data of water, soil, and aquatic food systems. The investigation of these systems will include analysis of parameters such as pH, dissolved oxygen, organic matter, chlorine, turbidity, nitrogen, phosphorus, soil porosity, soil water capacity, fecal coliform, mercury and iron.

Universidad De Cartagena, the Universidad De San Buenaventura at the closing ceremony..

PROGRAM ELEMENTS/STRUCTURE:

- LSAMP Scholars and students attending Universidad De Cartagena and the Universidad De San Buenaventura were selected to form the research team. A total of sixteen students were selected.
- All students (USB and CUNY) share a common housing arrangement for the ten week duration of the program to facilitate logistics, cultural exchange, research progress, a buddy system and language immersion.
- A resident supervisor/coordinator is present with the team for the duration of the summer program.
- Service Learning activities (once per week for ten weeks) working with the Pro Boquilla Foundation and a school in Manzanillo



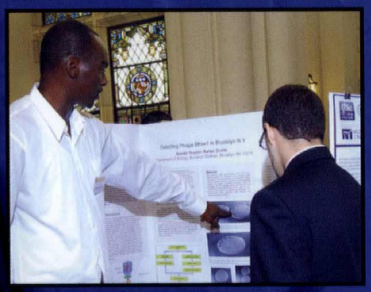
We understood that even though this was an intercultural exchange, we were required to actually conduct research and which included more than laboratory and field work. This research also allowed us to develop our analytical skills by working in a laboratory, and give us a brief synopsis of what work after college will be like. In the end it gave me a feeling like research that we conducted will indirectly have an effect on the lifestyle of people in Cartagena.

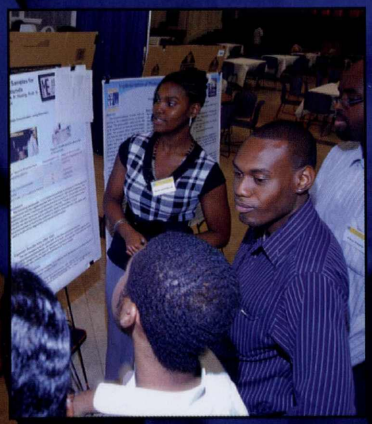
~Akil Hutchingson, Brooklyn College

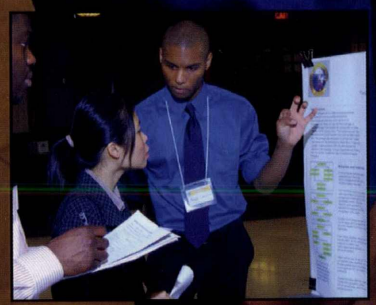
Resident Coordinator Dr. Diomaris Padilla conducting one of the Learning Seminars during the program.

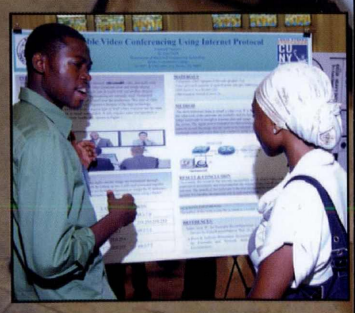
Summer 2010:

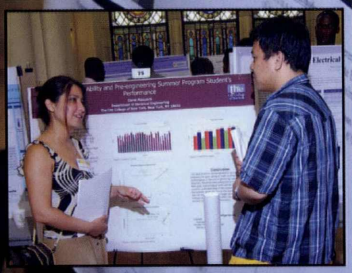
End of Summer Poster Session at the City College

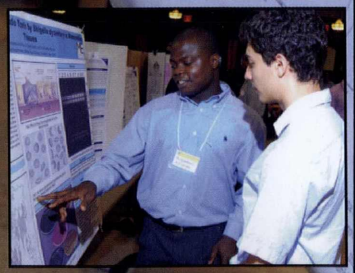




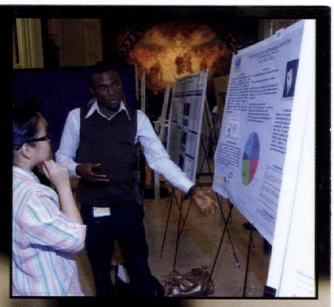


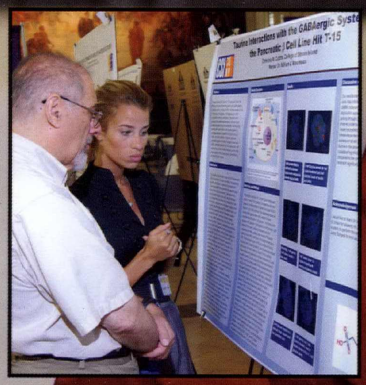


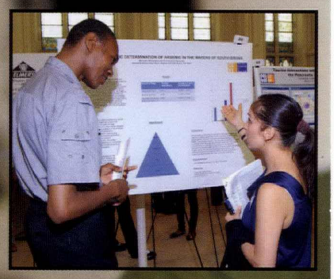


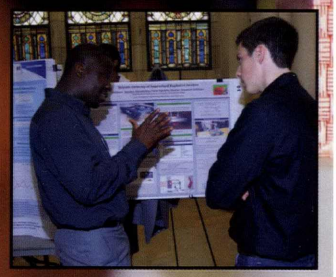


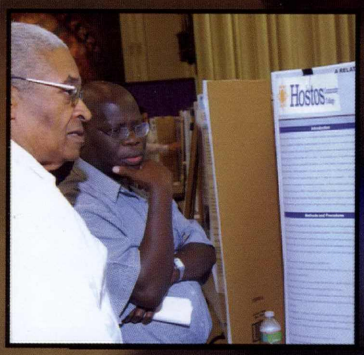
NYC Alliance Research-Summer at CUNY (Con't)











LSAMP Summer Research Experience 2010 (Con't)

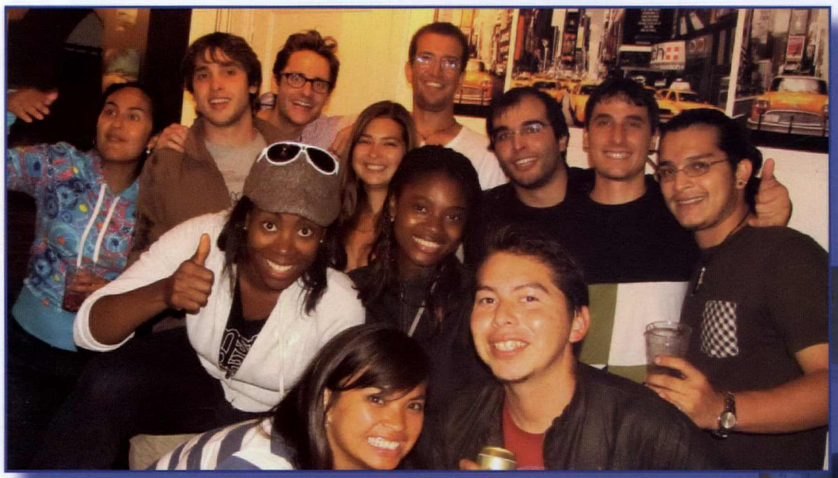
Below are some of the comments from students in the program:

Positives

- interactions with the grad student
- writing feedback from the grad students was found useful
- liked the presentation of diversity of research from other participants
- improved presentation skills and writing skills
- practicing their research presentation
- improved their organizing skills
- able to interact with other students from different disciplines
- good preparation for graduate school
- became more confident with speaking in front of others

The Netherlands

Five Scholars travelled to the University of Maastricht, (the Netherlands) to conduct research in the Neurosciences. Doctoral Scholar Julie De la Cruz served as the on site coordinator and also conducted research. The School of Mental Health and Neuroscience (MHeNS) has its niche in the complex interplay between basic brain mechanisms, brain/neurocognitive function and psychopathology, with emphasis on prevalent psychiatric, neuropsychiatric and neurological conditions.



I am amazed that since this is an international school, everyone speaks English instead of Dutch. It makes communicating (as an English speaker) much easier. I also loved how passionate the Dutch are about their soccer. It was so much fun to watch the games wearing orange. I wish the Dutch had won, though.

One thing about Dutch labs that American labs should adopt is the lab day out. In the U.S., I barely know some people in my department because I never see them. In "Lab Day Out" we really got to know some people in lab and it was a great team building experience.

~Julie De La Cruz, (Doctoral Scholar-Queens College)

It was nice to work with a brilliant group of scientists who took me under their wings and sharpened my lab skills to a point that I feel confident in my ability to work in just about any lab.

~Alicia Barklay, (Lehman College)

At the end of the summer, all the LSAMP European summer students traveled to Stockholm, Sweden to join the six scholars at KTH and presented their summer research. The coordinator of the KTH collaboration is Professor Ilona Kretzschmar of the City College (second row, first from left). Doctoral candidate Julie De La Cruz (first row, third from right) coordinates the program at the University of Maastricht.

Colombia

Research Objectives

La Boquilla and Manzanillo

Studies in both Boquilla and Manzanillo focused on soil quality of the seashore by measuring the pH, salinity, iron levels, and sanitation markers (fecal tests). In addition fish samples were collected and surveys of local fishermen to characterize the type of fish and quality of fish (mercury levels) impacted by the activities in both communities.

Zapatero

In Zapatero, potable water quality was assessed and compared to river/creek water, which is utilized when potable water (trucked in twice per week) is scarce. Water quality parameters such as nitrate, ammonia, phosphorus, iron, pH, and fecal coliform were measured. In a second study, an assessment of soil quality was conducted measuring parameters such as iron, pH, and fecal coliform levels to determine soil contamination due to leaky septic tanks or latrines.

Tierra Baja and Puerto Rey

An assessment of soil quality was conducted measuring parameters such as iron, pH, and fecal coliform levels to determine soil contamination possibly due to leaky septic tanks or latrines.

Aside for my thirst for travel and adventure, the summer in Cartagena also satisfied my desires as a researcher. I was able to take a project full circle; taking samples from the field, to the lab, and then analyzing the implications on the environment. The program also taught me a lot about teamwork, and how to manage project with a multitude of other people, qualities I know will benefit me later on in my scientific career.

~Julius Edson, City College

LSAMP CUNY Austria Collaborations

A total of fifteen students participated in the Special Two Week Seminar/Workshop held here at City College (see attached). Eight students from various disciplines at the University of Graz and TU-Graz participated as well as seven CUNY students. Complementing the City College based component, were five students to conduct research this summer at the University of Graz and TU-Graz. Arrangements were also made for our students to attend two week Summer Courses held in the castles of Seggau. They had the possibility to attend courses in sustainable development and the workshops on transferable skills.

The City College, The University of Graz and Technical University of Graz

Two Week Intensive Seminar Course-Summer 2010

July 18 - August 1, 2010 at The City College of New York

SCIENCE AND SOCIETY - IN THE FUTURE

Course participants explored the role Science and Technology played in the future through a series of readings, lectures and discussions.

SEMINAR SPEAKERS

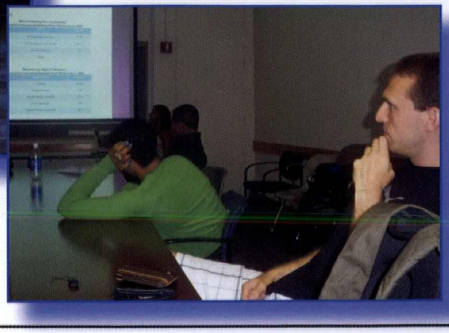
Dr. Ilona Kretzschmar, Colloids and their Assembly-City College
Dr. Stephen Redenti, Tissue Engineering/Stem Cells-Lehman College
Dr. Steve Greenbaum, Batteries, Fuel Cells and Renewable Energy-Hunter College
Dr. Raymond Tu, Soft Materials-Synthesis and Assembly-City College
Dr. Neville Parker, Transportation in Context-City College
Professor William Gibbons, Information Literacy-City College
Dr. Katherine St. John, Bioinformatics-Lehman College
Dr. Ruth Stark, Structural Biology Center-City College
Charlie Corredor, Bridge Scholar-The Energy Institute-City College

SEMINAR PROGRAM DESCRIPTION

Eight students from the University of Graz and Eight students from the City University of New York participated in the program. Participants shared a common living arrangement at the Towers at the City College of New York.

TOURS

The Urban Transportation Modeling and Simulation Center/CUNY-ITS
The NY State Structural Biology Center
Brookhaven National Lab



"I haven't done any research before, so I don't know what's going on out there. I like the way you force us, make us realize what's going to happens after college"

M. Ho

"I would like to thank you for being able to provide us with this interactive experience. It is an experience that I will always cherish and value greatly"

D. Arce

"We would like to thank the LSAMP – Robotics Component; you have truly been a helpful resource for us and source of growing challenge. Thank you"

R. Nascimento-Lovell, P. Viala and S. Macuff

"This project has let me see why I want to be an engineer and has motivated me to work harder so that I can be a highly successful engineer"

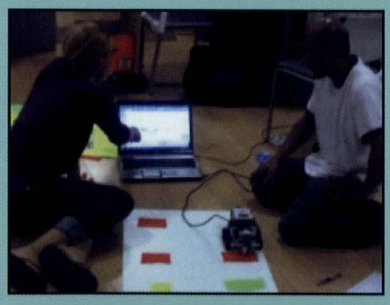
D. Arce

Standing: Xavier Aglamey (BCC), Denis Arce (LAGCC), Ariel Reyes (BMCC), Maria Ho (QCC), Kalair Ahmad (SUNY SCCC), Isirikoufoulou Sibabi (BCC), Nourou Alassani (BCC). Sitting: Nizar Mamouni (LAGCC), Armando Hernandez (CITYTECH), Rachel Nascimento-Lovell (QCC), Shiraz Macuff (LAGCC), Paula Viala (LAGCC). On the table: Explorer NXT 2.0, Forklift, DAX2010, Geigerbot.

THE LSAMP ROBOTICS PROJECT
AT THE CCNY GROOVE SCHOOL OF ENGINEERING
SUMMER RESEARCH OPPORTUNITY FOR TRANSFER STUDENTS 2010

Written by Clara Nieto-Wire

The LSAMP Robotics Project main objective is to provide early access to research in engineering through our Engineering Interactive Experience model using robotics activities. We believe that introducing people to research is a delicate task and therefore we felt honored when we were invited to be part of CCNY's efforts in this task during the summer of 2010.



We provided the hands-on research component for the CCNY Summer Research Opportunity for Transfer Students program. Flavio Cabrera and Clara Nieto-Wire from the LSAMP Robotics Project designed a challenging Engineering Interactive Experience (EIE-summer 2010) where participants were exposed to introductory robotics issues which led them to choose an application to implement, document and present in a limited time frame.

The participants were engineering transfer students from different CUNY and SUNY community colleges who were mixed in four groups to complete the EIE - summer 2010. Selected projects included robotics applications in

(i) airport security - The DAX2010: bomb disposal robot
(ii) navigation and obstacle avoidance - Explorer NXT 2.0
(iii) work environment safety - Forklift and
(iv) radioactive zone monitoring - Geigerbot: radiation, detection and mapping.

Each group successfully completed the EIE-summer 2010 and presented the corresponding robotics application research results plus demos during the final professional conference-like meeting on July 22, 2010. The participating transfer students were absolutely inspirational because of their dedication, talent and commitment to their projects.

We would like to thank the NYC-LSAMP for its continuing funding and support of our project's ideas; Ms. Nadine Bennett and Prof. Paul West for their diligent support during the EIE–summer 2010; and Prof. Gary Benenson, from the CCNY mechanical engineering department, for his participation and valuable feedback during the final conference-like meeting.

Thanks,

The LSAMP Robotics Project

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