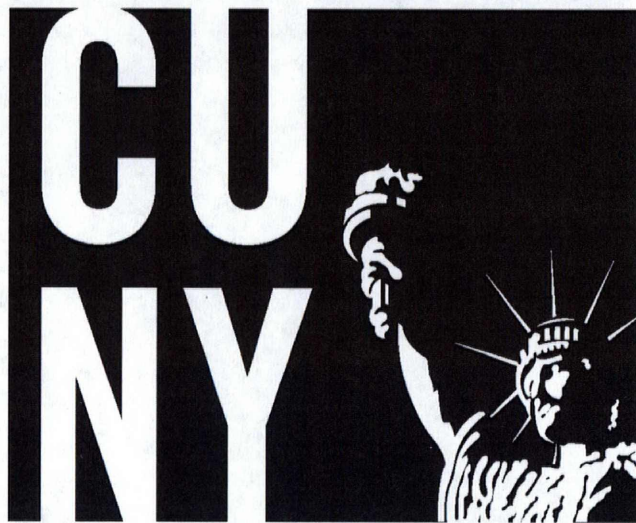


LOUIS STOKES

ALLIANCE



FOR MINORITY

PARTICIPATION

**NYC Louis Stokes Alliance Bridge To Teaching
Program Report 2008**

The New York City Louis Stokes Alliance
The City College of New York
138th Street and Convent Avenue, MR-14
New York, NY 10031

TABLE OF CONTENTS

Section	Page
• BTT Report Summary	3
• BTT Program Start Up Approach	6
• BTT Collaborations	6
• BTT Program Structure and Requirements	7
• BTT Program- Statement of Objectives and Program Elements	9
• BTT Scholars	11
• Appendix 1: NYC ALLIANCE BTT STUDENT PROFILES	15
• Appendix 2: BTT PARTICIPANTS-URBAN UNIVERSITY CONFERENCE 2008	20
• Appendix 3: NYC LSAMP BRIDGE TO TEACHING SPRING 2008 EVALUATION	27
• Appendix 4: NYC LSAMP BRIDGE TO TEACHING & BRIDGE TO DOCTORATE MONTHLY MEETING	32
• Appendix 5: NYC ALLIANCE BTT RESEARCH	36
• Appendix 6: INFORMAL SCIENCE EDUCATION AT THE URBAN UNIVERSITY CONFERENCE 2008	40

The NYC LSAMP Bridge To Teaching program (BTT) is a collaborative effort of the NYC Louis Stokes Alliance, integrating regular math and science education, research, clinical experience, informal education projects, discussion forums, workshops, and attendance and participation in Professional Conferences. BTT also provides stipends and fringe benefits to its students allowing them to concentrate on mastering their field.

Not unlike the Teachers Academy and the Teaching Fellows, BTT students are provided with vigorous academically and culturally enriching programs that prepare them for the challenges awaiting them in our nation's schools. BTT students must have completed undergraduate degrees in a hard-science, technology, engineering, or mathematics (STEM). In addition, BTT students must have been LSAMP undergraduate research scholars performing research in their field. These two factors, coupled with the fact that they enter the BTT program in math or science education and that they continue research, will ensure BTT students exhibit the expertise, discipline, and innovative leadership qualities evident in master teachers.

To ensure that BTT students meet, and exceed state certification and teaching standards, strict program requirements are required. Incentives, monthly meetings, workshops, and mentoring are offered to make sure BTT students give top priority to the task of becoming model educators that will teach the future scientists and mathematicians in the United States.

Program Requirements

In addition to fulfilling their obligations as matriculated Masters level students in math or science education, BTT students are required to attend monthly meetings that help keep BTT students abreast of any developments in the program and to discuss any concerns they may have, as well as to further prepare them to be highly qualified, competent teachers. Presentations, discussion forums, and workshops have been implemented or scheduled for future meetings.

Informal Science and Math Education projects

Students are currently working on informal education projects to be implemented in classrooms and presented at NYC-LSAMP's 2008 Urban University Conference held April 11th and 12th that engage students in middle schools and high schools. Projects such as "Soap Making and Chemistry", "Math Magic", and "From Pennies to Millions" will entertain, but more importantly, will teach math and science skills and demonstrate the practical and entrepreneurial possibilities gained from mastering STEM disciplines.

Discussion forums

The following math and science education-based questions have been researched and discussed during monthly forums:

- Cultural Issues in Education
- Defining and implementing informal Math/Science education
- Personal educational philosophy statements

Short workshops

The following topics have been, or will be, covered during BTT Monthly meetings:

- Teaching in NYC
- Navigating through administrative politics
- Getting to know your teacher's contract (Union contract – UFT)
- Classroom management
- Tenure, pension, salary issues, etc.
- Curriculum development
- Lesson planning

PowerPoint presentations

Presentations on the use of Taskstream, the Discovery website (for lesson planning), and Reference Manager (for citation and referencing research papers) have been, and will continue to be, an integral part of BTT enrichment activities. BTT students attended the NSTA Annual Conference held in Boston (March 27-30, 2008) and were required to make presentations on workshops attended.

PROGRAM ACCOMPLISHMENTS

NYC's BTT currently has fourteen students from New York City, one from Philadelphia, and one from Chicago officially in the program. Several LSAMP undergraduate research scholars from the seventeen alliance member campuses have expressed interest in the program and are under consideration.

The No Child Left Behind (2002) has increased the requirements for teachers, mandating they prove competency in their disciplines as well as in general knowledge and teaching methodology. NYS teaching certification mandates that teachers take and pass the LAST, CST, and ATS-W.

Nine of the twelve New York State BTT students have passed the LAST, ten have passed the CST, and two have passed the ATS-W (Pennsylvania and Illinois have different testing requirements for certification).

IMPLICATIONS

BTT will prepare a new generation of teachers through an innovative and rigorous curriculum, a competitive stipend, and close faculty and LSAMP alumni mentoring to ensure successful transitions into the teaching profession (LSAMP, 2006). While this is certainly an ambitious goal, based on the quality of students recruited to BTT, it is definitely achievable.

However, the ramifications of a teacher education program integrating a demanding course of study in math and science education with enrichment activities and incentives has yet to be seen. Nonetheless, it is expected that such a program will produce a stream of highly qualified, competent, and certified teachers that will motivate and inspire GK-12 students to study mathematics and science and catapult the United States to the number one place in these fields.

BTT Program Management

The management and leadership structures of the LSAMP represent a cooperative effort of the participating institutions. The LSAMP has established a number of models and an operations manual that will continue to be utilized. It includes a Management Chart, and the LSAMP Campus Model, NYC LSAMP Governance Structure, Learning Center, Research Assistant and Activity Coordinator models. The models are essential units of the LSAMP. They guide the interactions and duties of the participants and core activities, and promote a systemic comprehensive approach that supports the LSAMP mission and goals.

National Science Foundation
Louis Stokes Alliance for Minority Participation
A. James Hicks, *Program Director*

CUNY Central Administration
Mathew Goldstein, *Chancellor*
Selma Botman, *Executive Vice Chancellor for Academic Affairs*
Gillian Small, *University Dean for Research*

Project Directors
Neville A. Parker, *City College*
Louise Squitieri, *City College*
Leon Johnson, *Medgar Evers*

Project Administrator
Claude Brathwaite, *City College*

Senior Administrative Assistant
Jeanette Schnabel, *City College*

Steering Committee
Dennis Slavin, *Baruch College*
Sadie Bragg, *BMCC*
George Sanchez, *Bronx CC*
Heidi Holder, *Brooklyn College*
Joe Barba, *City College*
Gail Simmons, *College of SI*
Gail Smith, *CUNY Grad School*
Carlos Molina, *Hostos CC*
Marcia Cantarella, *Hunter College*
Lawrence Kobilinsky, *John Jay College*
Stuart Suss, *Kingsboro CC*
Marcia Caton, *LaGuardia CC*
William Tramontano, *Lehman College*
Mohsin Patwary, *Medgar Evers*
Robin Bargar, *NYC College of Technology*
Thomas Strekas, *Queens College*
Ekaterina Sukhanova, *Queensboro CC*
Panayiotis Meleties, *York College*

BTT Activity Coordinator
Nancy M. Medina, *City College*

BTT Program Start Up Approach

The NYCLSAMP is a collaborative effort of eighteen units in the City University of New York. Of these, six campuses offer graduate degrees in education. Briefing of the LSAMP Steering Committee (seventeen campuses) about the BTT program and expectations was accomplished at the monthly LSAMP Steering Committee meetings. All Steering Committee members are senior campus administrators at the level of Deanship or Vice Presidential level. This was followed by:

- Visits by LSAMP Project Directors to six collaborating campuses (see list below) to meet with Deans and Directors at the Schools of Education.
- Selection of a BTT Coordinator and introduction to current LSAMP Campus Activity Coordinators. All coordinators are Graduate students in the STEM disciplines.
- Open House and Informational meetings at the City College, Brooklyn, NYC College of Technology and Hunter College to meet with students LSAMP Alums in the Teaching Profession, and collaborating programs such as the CUNY Teacher Academy.
- Extension of the BTT opportunity to the SUNY LSAMP, Philadelphia LSAMP, Houston LSAMP, Michigan LSAMP and Illinois LSAMP.
- Application review and selection of participating BTT students.

BTT Program Collaborations

Collaborating Colleges-Schools and Divisions of Education at:

- Hunter College
- Brooklyn College
- City College
- College of Staten Island
- Lehman College
- Queens College

Collaborating Programs/Organizations:

- CUNY Teacher Academy
- College Now Program
- Teaching Opportunity Program
- Brookhaven National Labs

STEM Programs offered at each campus

Campus	Chemistry	Mathematics	Earth Science	Biology
Hunter College	x	x		x
Brooklyn College		x	x	
City College	x	x	x	x
College of Staten Island	x	x		x
Lehman College	x	x		x
Queens College	x	x	x	x

BTT Program Collaborations

Campus/Institution	Contact Name	E-mail	Telephone
Brooklyn College	Math: Mary Chiusano	Mchiusano@brooklyn.cuny.edu	718-951-3113
	Science: Eleanor Miele	Emiele@brooklyn.cuny.edu	718-951-5186
	Alexakos Kostantinos	Alexakosk@brooklyn.cuny.edu	718-951-5157
City College	Math: Beverly Smith	Besmith@ccny.cuny.edu	212-650-5975
	Science: Richard Steinberg	Steinberg@ccny.cuny.edu	212-650-5617
College of Staten Island	Dean Gail Simmons	Gsimmons@mail.csi.cuny.edu	718-982-2430
	Robert Shimony	Shimony@mail.csi.cuny.edu	718-982-2729
	David Kritt	Kritt@mail.csi.cuny.edu	718-982-4085
Hunter College	Andrew King	Andrew.king@hunter.cuny.edu	212-772-4688
Lehman College	Dean William Tramontano	Wtramont@lehman.cuny.edu	718-960-8764
Queens College	Dean Penny Hammrich	penny.hammrich@qc.cuny.edu	718-997-3320
Drexel University	Philadelphia LSAMP Mr. Steve Cox	LSAMP Leadership	
Chicago State University	Illinois LSAMP Dr. Leroy Jones	LSAMP Leadership	

LSAMP Bridge to Teaching Program Activity

Bridge Scholar Activity	Description
Academic Coursework	Nine credits to twelve credits per semester.
Research	Research at home campus during the academic year and at Brookhaven National labs or other Department of Energy site in the PST program and LSTPD program.
Teacher Certification Preparation	Participation in seminar/workshop designed to prepare students to successfully complete the teacher certification process.
Student Teaching	Academic year or summer student teaching activities linked to the CUNY Teacher Academy sites or other CUNY based program such as College Now and TOPS
CUNY Bridge Meeting	Monthly meeting of the Bridge to the Doctorate and Bridge to Teaching Fellows.
LSAMP Alumni and Faculty Mentoring	Face-to-face, online and informal meetings with LSAMP graduates currently in the NYC Public School . A select group of faculty at the participating schools will be chosen to serve as Faculty Mentors to Bridge participants.
Monthly Meeting with Project Director and Administrator	Continuous reviewing, advising and updates on the progress of the students. A monthly calendar is published.

Bridge to Teaching Pathways

<i>Option 1</i>	Option 2
<p><i>Academic Coursework</i> Nine credits of coursework per semester.</p>	<p><i>Academic Coursework</i> Twelve credits of coursework per semester, with additional coursework in summer and intersession. Commitment by college to provide the required coursework for a cohort of students. Completion of thirty six (36) credits in 18 months</p>
<p><i>Student Teaching Experience</i> CUNY Teacher Academy serve as sites, permitting the college to integrate an innovative experience in teaching at the graduate level with the work they have already done for the Teacher Academy.</p>	<p><i>Student Teaching Experience</i> Required on/during completion of coursework along with certification exams. CUNY Teacher Academy schools serve as sites, College Now and TOPS program sites.</p>
<p><i>Certification</i> Student completes half of the required coursework and applies for Internship Certification. Bridge Scholar can teach as the teacher of record and continue to complete the remaining portion of their master's degree program.</p>	<p><i>Certification</i> Required on/during completion of coursework along with certification exams.</p>

Partnership activities are allowed with both options.

Additional BTT Program Elements (See Appendices)

Discussion forum - A series of math/science educations-based questions for round-table:

- Cultural Issues in Education
- Defining and implementing informal Math/Science education
- Personal educational philosophy statements

Short workshops on:

- Teaching in NYC
- Navigating through administrative politics
- Getting to know your teacher's contract (Union contract – UFT)
- Classroom management
- Tenure, pension, salary issues, etc.
- Curriculum development
- Lesson planning

PowerPoint presentations on:

- Taskstream
- Lesson planning using The Discovery website
- Endnote, Reference Manager, or RefWorks (necessary tool for citing and referencing while writing your thesis or other papers)

Informal education projects:

BTT students continue to work on informal education projects they prepared and presented at NYC-LSAMP's 2008 Urban University Conference held April 11th and 12th at the City College of New York. The projects have either been implemented in classrooms or soon will be.

BTT Program- Statement of Objectives

- The Bridge To Teaching program will provide the necessary incentive to enable the New York City Louis Stokes Alliance for Minority Participation (NYC LSAMP) in Science, Technology, Engineering and Mathematics (STEM) to recruit and train recent research scholar LSAMP Bachelor's degree graduates.
- The selected students must be LSAMP research scholar participants who received stipends to conduct research under the guidance of a City University of New York (CUNY) research faculty mentor, or one of over thirty LSAMP programs nationwide.
- Bridge to Teaching is a fifth year option integrated in NYC LSAMP.
- Students enrolled in the Bridge to Teaching will have the ability to attend one of six schools of education at CUNY and select an area of concentration in Mathematics, Earth Science, Chemistry and Biology.
- Students will be required to complete the Graduate Education degree and Teacher Certification requirements in eighteen months.
- The program is designed to expose them rapidly to the urban school teaching environment, with the school serving as an extension of the classroom.
- As LSAMP research assistants, all students have had research experiences at the undergraduate level and would be building on this training by exposure to significant mentoring at the college, in the classroom, and by campus STEM faculty.
- Monthly meetings are held to ensure Bridge To Teaching students are on track and to discuss any concerns/issues they may have.
- BTT students will have the opportunity to conduct research with CUNY faculty in Education, Math or Science, or Math/Science Education.
- BTT students and Bridge To Doctorate students will collaborate to develop projects for middle school or high school students that will teach them math or science through informal education. To this effect, they were all given copies of the Responsive Research Network (RRN) in Mathematics and Science Education Guidelines. RRN is a National Science Foundation program providing Research Grants for Strengthening the Teaching and Learning of Mathematics and Science and Supporting Policy and Organization in CUNY.

Program Elements - All students accepted into the BTT program will receive the following:

- \$20,000 stipend per participant for eighteen months
- Paid tuition and books
- Health insurance coverage
- Reimbursement of CUNY Admission Application fee
- Reimbursement of LAST, CST, and ATS-W registration fees and study guides
- Reimbursement of Child Abuse and Violence Prevention Workshop fees
- Reimbursement of Fingerprinting fee
- Additional support for research

Requirements - To be eligible for the BTT program students must:

- Be LSAMP STEM graduates
- Have an interest in teaching
- Submit a Masters Application to the CUNY Senior campus of choice
- Submit a Bridge To Teaching on-line application

Timeline for participants - In order to complete a Masters in Mathematics or Science in approximately 18 months students must adhere to the following timeline:

- Apply for CUNY Masters Degree in Math or Science Education or MEd
- Complete fieldwork hours required by your CUNY campus
- Register and take LAST..... (www.nystce.nesinc.com)
- Register and take CST..... (www.nystce.nesinc.com)
- Register and take the ATS-W..... (www.nystce.nesinc.com)
- Register and take the Child Abuse Workshop ...(www.ChildAbuseWorkshop.com)
- Register and take the School Violence Prevention Workshop (www.ViolenceWorkshop.com)
- Get fingerprinted with the Department of Education(65 Court Street, Brooklyn NY 11201)

Recruitment of BTT Scholars

- Open House and Informational meetings at the City College, Brooklyn, NYC College of Technology and Hunter College to meet with students LSAMP Alums in the Teaching Profession, and collaborating programs such as the CUNY Teacher Academy.
- The BTT opportunity was extended to the SUNY LSAMP, Philadelphia LSAMP, Houston LSAMP, Michigan LSAMP and Illinois LSAMP.

BTT Students - The following students are enrolled as Bridge To Teaching Scholars:

1. **Adams, Khaliah** - The City College of New York, CUNY
2. **Bradshaw, Adriana** - Brooklyn College, CUNY
3. **Caban, JoAnn** - The City College of New York, CUNY
4. **Cochran, Geraldine** – Chicago University, IL
5. **Conte, Julo** – Brooklyn College, CUNY
6. **Dorcely, Reginald** - Brooklyn College
7. **Gomez, Adan** – Brooklyn College, CUNY
8. **Medina, Nancy** - CUNY Graduate Center
9. **Moya, Sylvia** - The City College of New York, CUNY
10. **Pierre-Noel, Leslie** - Queens College, CUNY
11. **Toya, Prelas** - Brooklyn College, CUNY
12. **Voltaire, Frantz** - Brooklyn College, CUNY
13. **Wilson, Yushaneen** – Drexel University, PA
14. **Leigh, Yasmin** – Drexel University/College of Staten Island

NYC Alliance BTT Scholars

Name	College	Graduate Program	Undergraduate Degree/Institution
Khaliah Adams	The City College of New York	Math Ed	Mathematics/York College
Adriana Bradshaw	Brooklyn College	Math Ed	Mathematics/York College
JoAnn Caban	The City College of New York	Science Ed	Biology/Lehman College
Geraldine Cochran	Chicago State University	Science Ed	Physics & mathematics/Chicago State University
Julo – Conte	Brooklyn College	Math Ed	Mathematics/York College
Reginald Dorcely	Brooklyn College	Math Ed	Mathematics/Medgar Evers College
Adan Gomez	Brooklyn College	Science Ed	Computer Science/Hunter College
Nancy Medina	City College/CUNY Graduate Center	Science Ed	Chemistry/City College
Sylvia Moya	The City College of New York	Science Ed	Biology/Hunter College
Leslie Pierre-Noel	Queens College	Math Ed	Computer Science/NYC College of Technology
Prelas Toya	Brooklyn College	Math Ed	Mathematics/Medgar Evers College
Frantz Voltaire	Brooklyn College	Math Ed	Mathematics/Medgar Evers College
Yushaneen Wilson	Drexel University	Science Ed	Biomedical Engineering
Yasmin Leigh	Drexel University/College of Staten Island	Science Ed	Psychology & Biochemistry/College of Staten Island

The following students showed interest in the program and were recruited for the Bridge To Teaching program:

Haynes, Shireen – York College

Completing degree in Mathematics. Delayed graduation.

Rowe, Shireen – Brooklyn College

Graduated with BS in Biology. Did not enroll in graduate school.

Thompson, Regina –NYC College of Technology

Did not enroll in graduate school. Food, Nutrition and Cafeteria Supervisor for three NYC Public Schools.

Louis-Charles, Louis-Medgar Evers College

Graduated with a BS in Mathematics. Declined to enroll. Currently a para-professional in the NYC Public School system.

Ortiz, Rosanna-NYC College of Technology

Graduated with a degree in Computer science from NYC College of Technology. Currently a database administrator/records administrator for a private company.

Richardson, Clarice-Medgar Evers College

Completing a dual degree in Mathematics and Biology. Applying to graduate programs in biomedical engineering.

Raffi, Elizabeth-Lehman College

Graduated with degrees in Mathematics and Psychology. Accepted to the NYC Teaching Fellows program.

Aaron Jones-City College

Completed BE degree in Engineering. Pursuing MS degree in Electrical Engineering. Completed NY State certification exams. Declined to enroll in the Education program.

APPENDICES

Appendix 1: NYC ALLIANCE BTT STUDENT PROFILES

Appendix 2: BTT PARTICIPANTS-URBAN UNIVERSITY CONFERENCE 2008

Appendix 3: NYC LSAMP Bridge To Teaching Spring 2008 Evaluation

Appendix 4: NYC LSAMP Bridge To Teaching & Bridge To Doctorate Monthly Meeting

Appendix 5: NYC Alliance BTT Research

Appendix 6: Informal Science Education at the Urban University Conference 2008

Appendix 1: NYC ALLIANCE BTT STUDENT PROFILES

NYC ALLIANCE BTT STUDENT PROFILES

Khaliah Adams

- Accepted to City College as a Masters student in Mathematics Education
- Passed LAST and CST
- Participated in Hunter College's Summer 2007 tutoring program preparing high school students for the NYS Regent's examination in Mathematics.
- Career objective: to complete the masters in education and become a secondary mathematics teacher where she hopes to alter students' perception of mathematics. She wants them to love mathematics as much as she does and to see the broad impact and applications it has.

Adriana Bradshaw

- Accepted to Brooklyn college, masters in Math Education.
- Passed LAST and CST exams for New York City certification.
- Participated in Mr Turner's 2007 Summer camp (York College – CUNY) tutoring 7th and 8th graders to improve their math levels.
- Participated in Hillcrest H.S. Fall 2007 as a math student- teacher in grade 11th.
- Career Objectives: To become a certified secondary math teacher. Involve students in learning math by introducing games, puzzles and technology in every day class.

JoAnn Caban

- Master Student at The City College of New York, Department of Education (Secondary Science Program)
- Masters of Arts (Biology) from Lehman College
- Student of the Bridge To Teaching Program
- Passed the LAST and CST NYS Certification exams
- Thesis topic: Analysis of Morphological Changes in Thalamocortical Circuitry in Schizophrenia and Mood Disorders. Her thesis is an investigation of how different morphometric measures revealed by postmortem investigative research via most recent literature searches answers questions concerning prefrontal cortex vulnerability and how it co-varies with other psychiatric disorders.

Geraldine Cochran

- Currently enrolled at Chicago State University (CSU) as at Teacher Certification Student and conducting research in physics education.
- Research: Evaluating the role research-based instructional materials play in effective group interactions during physics laboratory activities.
- Awaiting admissions to the CSU College of Education in pursuit of a Masters of Art in Teaching Science (specialization--Physics)
- Conducted research in physics education at Chicago State University, University of Washington, and North Carolina State University
- Served as a mechanics laboratory Instructor for introductory physics courses at North Carolina State University
- Career objective: to develop research-based curriculum for high school physics teachers and adapt current curriculum used in physics courses for students with exceptional needs.

Reginald Dorcely

- Accepted to The City College – CUNY as a Masters student in Mathematics Education
- Participating in the City College School of Education research activities – “Assessing Teacher Development In Facilitating Mathematizing” with Dr. Lynn Tarlow.
- Currently working on a Tutorial project to be implemented in CUNY campus.
- Passed CST
- Will take LAST and ATS – W
- Career Objective: to obtain the Masters in Mathematics Education and become a secondary teacher that facilitates Mathematizing. He wants students to become independent learners.

Adan Gomez

- Student of Bridge To Teaching
- Taught Mathematics for the New York City Department of Education
- Passed all NYS Certification exams
- Participated in Research Topic: Computing Complexity Indices Based on Edges Covers. His research focused in the measurement in intrinsic complexity with the use of the graph invariants which tell us how the structure interacts
- Careers Objectives: He want to open his own ELL Academy to help ELL students to succeed in life.

Nancy Medina

- Doctoral student in Analytical Chemistry. Passed her 2nd Level Exam and has been advanced to Candidacy.
- Student and Coordinator for the Bridge To Teaching Program
- Taught Living Environment, Earth Science, Chemistry, and Mathematics for the New York City Department of Education
- Passed all NYS Certification exams
- Steering Committee Member of the CUNY Graduate Center’s Doctoral Student Council.
- Former GK-12 Fellow.
- Dissertation topic: Chemical Analysis of Metabolites in Wound-healing Potato Tissues. Her research involves the study of potato suberin (a biopolymer found in secondary growth tissues or formed as a stress response in fruits and vegetables). Her aim is to develop analytical chemistry tools that can monitor how suberin-like protective polymers are formed in potatoes after wounding and to use that information to design an in vitro system that reflects more faithfully the chemistry of wound-healing potato tubers
- Career objective: to open her own Teaching Academy (grades 1 - 12) to provide under represented students with the knowledge, tools, and role modes necessary to succeed in life.

Leslie Pierre Noel

- Accepted to Queens College as a Masters student in Mathematics Education.
- Participated in New York City College of Technology tutoring program for high school students in Mathematics.
- Career Objective: to entire the masters in education and become a secondary mathematics teacher for the New York City Department of Education somewhere I hope to help students understand math concepts and learn to enjoy mathematics. The students should understand that mathematics is a life skill used every day as we go about the business of living. My goal is to get children to see math as many different strategies may be used to solve problems. My lively techniques for them to understanding math

through games, questions, and conversations, as well as specific math activities, I can help any child develop math ability. I want them to love mathematics as much as I do.

Frantz M. Voltaire

- Accepted to Brooklyn College of CUNY as a Masters student in Mathematics Education
- Passed the CST
- Taught two remedial Math classes at Medgar Evers College in the summer of 2007.
- Career objective: to teach math and conduct research with young people so that they can discover the beauty of these areas.

Yushaneen Wilson

- Accepted to Drexel University as a Masters student in Science Education (Biology)
- Research: In the planning stages, along with Drexel Faculty, on research involving inner city girls who may be talented in STEM areas.
- Career objective: to teach and be a role model to inner city youth.

BTT Student Profiles (reprinted from the LSAMP Newsletter)

Frantz Voltaire

Frantz Voltaire, a Mathematical Education graduate student and Bridge to Teaching scholar at Brooklyn College, has made solving problems his forte. "In fact, it was my math professor, Dr. Umesh Nagarkatte of Medgar Evers College, who helped me to discover my passion for solving problems as an undergraduate," he stated. "I considered my teachers as heroes, since they were instrumental in the success of so many people, and I realized I would like to make that kind of difference in the lives of others."

Frantz Voltaire obtained his Associate degree in Computer Science, but his constant fascination for mathematical concepts led him to pursue his Bachelor of Science degree in the mathematics. Upon realizing that "far too few young people have an interest in mathematics and science," Frantz Voltaire vowed to help reverse this trend by implementing innovative pedagogical approaches to replace archaic methods of teaching. He contends, "I believe it is imperative that new approaches are encouraged through research in an effort to remedy the obvious deficiencies, in terms of students' [comprehension] of math and science and [the level of] teachers' preparedness." Over the summer 2007, Mr. Voltaire demonstrated his ability by teaching three remedial courses at Medgar Evers College and preparing more than 90 percent of his students to pass both the CUNY COMPASS and the departmental exams. Being actively involved in conducting research has allowed Mr. Voltaire to share his research experience with his students and to present at national collegiate conferences. His project was entitled "The Application of Singular Value Decomposition (SVD) Theorem and Principal Components Analysis (PCA) to Air Sampling," and the research focused on analyzing the toxic air pollution of urban areas by using linear algebra methods. Dynamic uses and applications of critical subjects, such as math and science, will undoubtedly assist Mr. Voltaire when teaching a younger generation of students who are "highly visual, tactile learners." He said, "My goal is to teach math and conduct research with young people so that they can discover the beauty of Mathematics." Bearing the namesake of the renowned French philosopher Voltaire, he will also seek to bring enlightenment to the classroom and believes the Bridge to Teaching program will provide both encouragement and support for him to achieve those goals and to use math to help solve real-world problems.

Nancy Medina

To be a good teacher, one must also be a good student. Nancy Medina is not only the Coordinator of the Bridge to Teaching program, she is also a student in the program. This duality, as program planner as well as participant, has allowed Ms. Medina to gain intimate knowledge and to share in the experiences of the students she recruits and incorporates in the Bridge to Teaching. Moreover, Ms. Medina is doctoral student in Chemistry at the Graduate Center of CUNY. She received her Bachelor's and Master's degrees in Chemistry from the City College of New York and The Graduate Center, respectively. As a doctoral student specializing in the discipline of Analytical Chemistry, she is researching the hydrophobic (water-fearing) biopolymer suberin, which is a waxy compound found in secondary (lateral) growth tissues or formed as a stress response in plants. "[My] research group's overall objective is to establish the molecular architecture that underlies the protective functions of this essential but intractable biomaterial, which can lead to the development of crop protection techniques," said Ms. Medina. In her burgeoning teaching career, Ms. Medina has already gained a diverse breadth of didactic experience that includes: "teaching for three years as a science and math teacher in the NYC Department of Education, teaching at the college level for under-graduates and high school students trying to earn college credits, and working with GK-12 and College Now programs that reach out to public schools in an effort to increase the number of students graduating high school."

With respects to the GK-12 and College Now, "these programs use mini-projects developed and taught by doctoral students to teach certain skills and techniques needed to succeed in science and mathematics, which introduce students, through hands-on activities, to research methodology and instrumentation such as extractions, thin layer chromatography, and high performance liquid chromatography (HPLC)." In addition, she works closely with the "Advanced Placement (AP) teachers to address the needs of increasing the participation of low-income, urban, and under-represented minority students in high school level AP courses in the sciences and mathematics." Nancy Medina's ultimate goal is to be a leader in the field of education. "I am also working on a PhD in Educational Leadership, because I want to ultimately open my own school; the experience and knowledge of a school's leaders are major factors in how well a school functions," she emphasized. Among her many accomplishments to date, she is most satisfied with successfully passing her first and second level doctoral exams and being a part of the Bridge to Teaching program. She stated, "These experiences and my research as a doctoral student will bolster my career goals and help me start a school that will generate exceptional students."

Appendix 2: BTT PARTICIPANTS-URBAN UNIVERSITY CONFERENCE 2008

**BTT PARTICIPANTS-URBAN UNIVERSITY CONFERENCE 2008
THE CITY COLLEGE OF NEW YORK
FRIDAY APRIL 11 AND SATURDAY APRIL 12**

Poster Presenter	Project Title/Abstract
<p>Nancy M. Medina CUNY - Graduate School and University Center</p>	<p>The New York City LSAMP Bridge To Teaching Program: Preparing Competent Math And Science Gk-12 Teachers The New York City Louis Stokes Alliance for Minority Participation (NYC LSAMP) has designed and implemented an innovative program to recruit and train recent graduating LSAMP research scholars to teach elementary, middle, and high school. This dynamic program, properly tagged Bridge To Teaching (BTT), is bridging the gap between mathematics and science disciplines and teaching. Acceptance to BTT's program is extremely competitive and only former LSAMP research scholars with undergraduate degrees in science, technology, engineering, and mathematics (STEM) are eligible. BTT students must complete the requirements of their universities' math or science education program while continuing with mathematical, scientific, and/or educational research and attending monthly meetings on pedagogical issues including 1) Cultural Issues in Education, 2) Defining and implementing informal Math/Science education, 3) Personal Philosophy of Education, and 4) Technology in Education (ScienceWeb, Reference Manager, and TaskStream). In addition, all BTT students are required to prepare, oversee, and present the outcomes of original informal education projects such as: Edible Science, What is a Magic Square, Count Principles, Math Magic, Making Soap with Chemistry, and From Pennies to Millionaire. BTT is not just another teacher preparation program; BTT's rigorous preparation will ensure students completing this program become master teachers able to face the demands of teaching in the 21st century.</p>
<p>Yushaneen Wilson Drexel University</p>	<p>"Edible Science": Inquiry With Food Informal education is an opportunity for students to see the field of science in a new light. A growing body of research documents the power of informal learning experiences to spark curiosity and engage interest in the sciences during school years and throughout a lifetime. (NSTA, 2007) "Edible Science" is a standards based informal education project designed for middle school students. Students will be exposed to the biology of taste as they perform a scientific investigation using various types of bubblegum. Each brand of bubblegum will appeal to a different type of taste and will be used to collect data. Although students may not realize it, they will learn the fundamental principles of taste and scientific investigations upon the completion of this experience!</p>
<p>Sandra Ospina CUNY - Brooklyn College</p>	<p>A Study Of Genes Responsible In Gametogenesis Of Chlamydomonas Reinhardtii Chlamydomonas reinhardtii is a primitive model of choice for studying gamete fusion. In this study we are searching to discover which genes are responsible for gamete fusion. This in turn will perhaps lead to</p>

	<p>understanding the mechanism of gamete fusion in more evolved organisms. Insertional mutants were created using digested plasmid pSP123S, which was cut using the restriction enzyme BAMH1. The transformation was carried out via Kindle's glass-bead method, however after the selection was performed, it was concluded that the mutants created were not mating deficient mutants, and therefore were of no interest for this study. A second insertional mutagenesis has been attempted this time using a different plasmid (pHyg3MA), which has been isolated recently and which has been proven to give a higher yield than pSP123S. The resulting transformed colonies are being screened to see if any mating deficient mutant has been created. The pHyg3MA plasmid was digested with restriction enzyme Not1. Once the mutant has been obtained, various methods of genetic analysis will be performed and the second phase of the study will commence.</p>
<p>Frantz Voltaire CUNY - Brooklyn College</p>	<p>Beat The Calculator Nowadays, students refuse to perform mental computations; they rather use their calculators for any simple calculation. The goal of this project is to use informal techniques to teach students how to square two digit numbers without using their calculators. At the end of this project, students will be able to square any two digit numbers by using very simple and easy tricks.</p>
<p>Joann Caban CUNY - City College</p>	<p>Soap And Saponification My philosophy on 'Informal Science Education' is engaging hands-on activities for students K-12, which provide a meaningful way for students to learn science by teaching them how things work. Learning science methodology through both witnessing first hand its effects and actively working to achieve those effects serves several neural pathways of learning and may encourage long-term learning and memory. Informal Science Education seems to reinforce learning and ensure understanding. Future intentions will be to collect data to support or disprove this hypothesis through a sponsored summer youth program. In the current project (intended for grades 8-12) the objective is to teach the process of 'Saponification' by demonstration while teaching how soap acts as an intermediary between two substances that do not mix i.e. oil and water. While the process of making soap serves as a fun activity, students will learn and understand the principal behind the cleansing action of soap as well as basic chemical principles such as: pH, hydrophobicity, hydrocarbon chains, hydrolysis reactions, reactants and products. Included in the current project is a brief explanation on how students may begin to think as entrepreneurs, set prices for products, trademark, mass-produce and market their ideas.</p>
<p>Sylvia Moya CUNY - City College</p>	<p>It's All About Traits Students will be assigned an activity to enhance their understanding of inheritable traits. In this activity, they will create a bird based on the inherited letter code. These letters will represent a physical trait such as</p>

	<p>the bird's feather color. They will be asked to predict the bird's phenotype if mated with an identical one. Following the activity, students will take part in a field study where they must identify local NYC pigeons and their morph as well as courtship behavior. After the data has been collected, students must predict what the offspring might look like based on visible parental traits. Finally, students will be given a general knowledge of how these traits are encoded in our genes and how these genes are passed on to us from our parents. They must be able to select a phenotypic trait from their family and construct a diagram depicting how this trait has been passed down through generations.</p>
<p>Reginald Dorcely CUNY - City College</p>	<p>Observation And Assessment Of A Teacher Development Program Recent studies have found that traditional teachers need to adopt a new way of teaching. These suggest creating conducive environments for learning. Teachers need to create meaningful lessons so students do not have to reteach the lessons. The National Council of Teachers of Mathematics (NCTM) recommends that teachers rethink their objectives and practice in teaching mathematics. Prior research indicates that a lack of success in implementing standards-based mathematics learning environments may be due to the fact that teachers generally have not been prepared for this endeavor (c.f. Hiebert). For this purpose, a teacher development program has to put be in place to facilitate teachers' thinking about mathematics and learning. Therefore, a teacher development program must be tailored to meet the needs of students in the classrooms.</p> <p>The purpose of this project is to observe and assess teachers' lessons based on pedagogy, use of context, and knowledge of mathematics. To carry out this research we have been observing teachers from two middle schools (MS 51 and MS 88) located in Park slope Brooklyn. Our main focus is taking field notes and writing reflections on what we observing being taught in the classroom.</p> <p>At present, we have found that meaningful and interesting mathematics lessons supported students' critical thinking. Further investigations will be done to draw sound preliminary conclusions.</p>
<p>Khaliyah Adams CUNY - City College</p>	<p>Barbie Bungee Informal Education is an important tool to supplement learning using external factors and real life experiences without the use of a traditional classroom environment. This gives students the chance to engage in activities that will help them discover ideas and solutions to make sense of the concepts related to math. The Barbie Bungee activity is an informal education project that incorporates hands on learning as well as collaborative learning to help students understand functions and proportionality. The project will take place at a middle school with 20 8th grade math students in the classroom. In this activity, the students will simulate a bungee jump using a Barbie doll and rubber bands. Each group of students will formulate a guess to what they believe is the maximum number of rubber bands that will allow Barbie to safely jump from a height of 14 feet in the stairwell. The number of rubber bands that</p>

	<p>each group agree upon will be attached to Barbie's feet. Then the student will release Barbie over the railing on top of the stairwell and another student will use a yard stick to measure the distance between the floor and Barbie's lowest point of the jump. The group that comes closest in measurement without Barbie hitting the floor wins. I expect that students will be able to see the relationship between the jump distance of Barbie and the number of rubber bands used to save Barbie's life. The assessment used for the project will be task related questions that will evaluate student learning. This activity should be fun, competitive, and a learning experience for the students.</p>
<p>Karl Clarke CUNY - Hunter College</p>	<p>Establishing A Climatology For Coastal Storms In New York The New York coastal areas are heavily impacted by local extratropical storms known as Nor'easters each year particularly during the winter. It is important to determine their characteristic properties as they pass through the New York area. Nor'easters are cyclonic systems formed outside the tropics along the convergence of two air masses: cold continental air and warm maritime tropical air from the Gulf of Mexico. These storm systems often generate large waves that erode the New York barrier beaches and produce storm surges which flood low lying coastal communities. Analysis of key storm data gathered from buoys stationed off the Long Island coastline was used to determine possible storm systems. Data from the National Hurricane Center and weather maps were examined to verify storm events coinciding with both the tropical and extratropical seasons. Monitoring passing storms at different locations provides varying results of the storms' local properties and the consequential impact on the New York coast.</p>
<p>Julo Conte CUNY - Brooklyn College</p>	<p>Applications Of Rational Points On Elliptic Curves Mathematics-Pure In this paper we discuss some questions concerning points of order two, three, real complex points on cubic curves, the discriminant, points of finite order have integer coordinate, Nagell-Lutz theorem and further developments. The motivating question is the points of order two, three and finite order. The Weierstrass equation will be used to find the points which satisfy a group law. What points are used to satisfy finite planes depend on what we are looking for or what mathematical problem we have to solve. Many people do not know how important it is to get these points and figure out how to determine the final computed results which work in many different fields. Points of finite order are elements that satisfy a group law and when added, give us that $mp = 0$ exists for some finite m. Through trial and error and multiple experiments, scientists work in the best laboratories to use these formulas for applications in the scientific, medical, aeronautical as well as genetic fields.</p>
<p>Prelas Toyo CUNY - City College</p>	<p>Observation And Assessment Of A Teacher Development Program Research has proven that the approach in teaching mathematics has not been successful over the years. Many studies have revealed that students should be taught by using real-life situations. In other words, the new</p>

	<p>material being taught should be connected to prior knowledge learned outside the classroom. Students should be taught problem solving strategies to help them understand the concepts and culture of mathematics. Teachers have to be prepared to teach innovative, engaging and motivating lessons in order for all students to participate in the classroom. The National Council of Teachers of Mathematics (NCTM) suggested that teachers teach practical and engaging lessons. Their website displays new ideas and strategies teachers can incorporate to make their lessons more effective and clear about the learning objectives.</p> <p>Currently, our research team is observing two middle schools in Park Slope, Brooklyn, MS 51 and MS 88. In our present study our aim is to observe and evaluate the methodology and pedagogy used by teachers in teaching mathematics. To carry out such an investigation, our team observes, takes field notes and critically reflects on the findings. These findings are based on how clearly and effectively the teachers' learning objective was met. That is, were the students able to understand the concepts and apply them in a real life situation? Were the teachers' questioning techniques and pedagogical strategies effective throughout the lesson? Further examination and observation will continue, as we cannot draw any conclusions thus far.</p>
<p>Geraldine Cochran Chicago State University</p>	<p>Evaluating The Role Research-Based Instructional Materials Play In Effective Group Interactions</p> <p>An increasing number of introductory physics courses use activity-based group work to supplement lectures in facilitating learning. Chicago State University (CSU) is currently involved in adapting its learning environment in order to create a technology rich learning environment consisting of Interactive Power Point lectures and research-based laboratory experiments in which students work in groups. The effectiveness of these materials is being researched at CSU and Olive Harvey Community College.</p> <p>One particular avenue of this research involves evaluating the role these instructional materials play in group interactions through analysis of the methods students use to assist each other. Specifically, we will identify which types of interactions students believe are the most effective in moving toward an understanding of physics concepts.</p> <p>The research involves a number of methods including the analysis of: 1) pretest and examination responses, 2) videotapes of students as they complete laboratory activities, 3) responses to a survey on group interaction, 4) transcriptions to interviews in which pairs of students will assist each other in completing physics problems and explain the methods they use to assist each other during group activities. Current progress will be presented.</p>
<p>Leslie Pierre Noel CUNY - Queens College</p>	<p>Count Principles</p> <p>This project is about the count principles in Probability. It will help middle school students between 5 and 6 grades understand the counting</p>

	<p>principle. The tree diagram is used to help them understand how the ideas are related to the concept of accounting principles. Thus, the tree diagram can be used as a planning and diagnostic tool to help students improve their coherence of probability. This project helps to develop and organize the learner's knowledge by sorting and counting according to similarities and differences. The tree diagram helps them analyze the positive or negative relationship existing between two measures. The presentation shows the student statistics and probability in the real world. The project contains lessons that will capture students' interest in learning math. My goal is for each student to understand the sciences of probability and statistics.</p>
<p>Nancy Medina CUNY Graduate Center</p>	<p>Chemical Analysis of Metabolites in Wound-Healing Potato Tissue Suberin is an essential plant biopolymer that protects plant tissues from moisture loss and reduces their susceptibility to bacterial and fungal attack. A molecular understanding of suberin's protective layer in the potato (<i>Solanum tuberosum L.</i>) will contribute to a more defined model of potato wound-healing response. Russet Burbank (Idaho) potatoes were wounded and allowed to suberize during a time-course of 0 – 14 days. To monitor the progress of suberization, the insoluble tissue was analyzed using cross-polarization magic angle spinning (CPMAS), a solid-state nuclear magnetic resonance (ss-NMR) spectroscopy technique. The soluble metabolites in potato tubers were monitored with high-performance liquid chromatography (HPLC). Herein, we report the results of HPLC and NMR analysis.</p>
<p>Adan Gomez Brooklyn College</p>	<p>From Pennies to Millionaire Informal education takes place outside of the classroom. Using external factors and real life experiences without using the traditional classroom activities. Informal education gives the opportunity to students to engage and actively participate in discovering the solutions to make sense of the concept to mathematics. From pennies to millionaire is designed to engaged students to acquire the idea of geometric series without telling they will get the formula and an real life application</p>

Appendix 3: NYC LSAMP Bridge To Teaching Spring 2008 Evaluation

NYC LSAMP Bridge To Teaching Spring 2008 Evaluation

Last Name: _____ First Name: _____

School (circle one):

- | | | |
|------------------|--------------------------|------------------------------|
| Brooklyn College | City College | The College of Staten Island |
| Hunter College | Lehman College | Queens College |
| Drexel | Chicago State University | |

Semester/Year you were admitted: _____

Number of credits to date: _____

Number of credits you will be registering for in: Spring 2008: _____
Fall 2008: _____

*** Program (Check all that apply):

Program:	<input type="checkbox"/>	Level:	<input type="checkbox"/>		<input type="checkbox"/>
Math/Ed	<input type="checkbox"/>	Middle School	<input type="checkbox"/>	High School	<input type="checkbox"/>
Science/Ed - Biology	<input type="checkbox"/>	Middle School	<input type="checkbox"/>	High School	<input type="checkbox"/>
Science/Ed - Chemistry	<input type="checkbox"/>	Middle School	<input type="checkbox"/>	High School	<input type="checkbox"/>
Science/Ed - Earth Science	<input type="checkbox"/>	Middle School	<input type="checkbox"/>	High School	<input type="checkbox"/>
Science/Ed - Physics	<input type="checkbox"/>	Middle School	<input type="checkbox"/>	High School	<input type="checkbox"/>
Other:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

***** You must be enrolled in a Master's Program NOT a Certificate Program *****

**NYC LSAMP Bridge To Teaching
Spring 2008 Evaluation**

Last Name: _____ First Name: _____

Please list all courses you have taken to date:

Course Code	Course Description	# of credits	Grade
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

**NYC LSAMP Bridge To Teaching
Spring 2008 Evaluation**

Last Name: _____ First Name: _____

Please complete the following table:

EXAM	Passed/Failed	Date Passed
LAST		
CST		
ATS-W		
Violence Prevention Workshop		
Child Abuse Workshop		
For Pennsylvania & Illinois:		
Exams:		
Licensing Workshops/Certifications:		

Attach copies of Exam notification (pass/fail form) to this evaluation.

List the courses you will be taking during Summer/Fall 2008:

Course Code	Course Description	# of credits
1.		
2.		
3.		
4.		
5.		
6.		
7.		

**NYC LSAMP Bridge To Teaching
Spring 2008 Evaluation**

Last Name: _____ First Name: _____

Please submit the following reports before your evaluation and bring a copy with you the day of your evaluation (*attach this sheet to the front of your report*):

1. A full journal report on your Informal Project. The report must include the following:
 - ABSTRACT
 - INTRODUCTION
 - MATERIALS and METHODS
 - DISCUSSION/CONCLUSION
 - REFERENCES

2. For those of you involved in research and receiving a stipend (\$9,000/year), submit a report discussing your work for the Spring 2008 semester. The report must be signed by your mentor.

Appendix 4 NYC LSAMP Bridge To Teaching & Bridge To Doctorate Monthly Meeting

NYC LSAMP
Bridge To Teaching & Bridge To Doctorate Combined
Monthly Meeting

May 24, 2008; 10:00AM – 1:00PM

City College of New York – NAC 1/209 & 1/211

AGENDA

1. BTD student presentations/discussions (first ½)
2. Introduction to **Reference Manager**, a software tool for managing references and/or bibliographies – an excellent aid for writing reports and dissertations (Nancy Medina)
3. NSTA Boston Conference review - PowerPoint presentations by BTT attendees on topic/seminar of their choice:
 - a. Julio Conte(10 min): Safe Water Science
 - b. Nancy Medina (10 min): *NASA – Mapping the Moon: Simulating LOLA in the Classroom*
 - c. Sylvia Moya (10 min): *Polar Science, Global Discoveries: IPY Research Update for Teachers*
 - d. Yushaneen Wilson (10 min): *Science Classroom Potpourri for the Beginning Teacher*
4. Update on **Informal Education papers for evaluations**: All BTT students must have the introduction and materials and methods of their informal projects written up in Journal format (as if preparing for publication in the Journal of Education). *Please make at least 25 copies of your report to distribute at this combined BTT/BTD meeting.*
5. BTD student presentations/discussions (second ½)
6. Summer Research Plans (BTT & BTD)
7. Handout/Explanation of Spring 2008 Evaluation forms for BTT/BTD students
8. Old/New Business

Guest Lecturer addressing BTT and BTD Scholars



Samuel Jackson, LSAMP Graduate Scholar making a research presentation at the monthly BTT meeting. Mr. Jackson received a BS degree in Mathematics from York College and a MA degree in Math Education from Brooklyn College. He is currently a doctoral candidate in Urban Education at the CUNY Graduate Center.

Monthly Meetings – Discussions and Presentations



Appendix 5: NYC Alliance BTT Research

It's All About Traits

Sylvia Moya

City College of New York, Science Education

Abstract:

Students will be assigned an activity to enhance their understanding of inheritable traits. In this activity, they will create a bird based on the inherited letter code. These letters will represent a physical trait such as the bird's feather color. They will be asked to predict the bird's phenotype if mated with an identical one. Following the activity, students will take part in a field study where they must identify local NYC pigeons and their morph as well as courtship behavior. After the data has been collected, students must predict what the offspring might look like based on visible parental traits. Finally, students will be given a general knowledge of how these traits are encoded in our genes and how these genes are passed on to us from our parents. They must be able to select a phenotypic trait from their family and construct a diagram depicting how this trait has been passed down through generations.

Materials & Methodology

Each student will be provided a sheet with pictures to allow proper color morph identification by correct names. A tally sheet permits proper documentation of the flock count, color count, and their courtship behavior while a habitat form provides study site conditions. Finally, sample sheet will be provided to guide students in their family trait diagram.

Prior to the field study, students must have some understanding of physical genetic traits. To do so, students will be given a handout with letter codes. Each letter represents a specific gene that will code for the bird's feather color. Without looking, each student will select two letters. Based on the letter combination, they will put together their offspring with the provided bird parts.

During the field study, students are expected to have a better understanding of genetics. They will observe a flock of local pigeons and record their color morph, and are required to do this at least two times to increase accuracy. They must also complete a habitat form that will provide information of the environment. Courtship identification is also required and students must recognize which pigeons are engaging in courtship behavior.

SOLVING SUDOKU USING SIMULATED ANNEALING AND PEOPLE!

Tiffany A Lambert – Department of Computer Science - Brooklyn College

Sudoku is a popular logic puzzle that has swept the world by storm in the past few years. Originally called Number Place, Sudoku is a puzzle played on a 9 x 9 grid. The task of the player is to completely fill in the grid, with some initially given, so that every row, column, and 3 x 3 square containing the numbers 1- 9 in some order.

There are many computer algorithms to both generate, and solve these puzzles. In this experiment, we are using simulated annealing as an approach to optimization. Simulated Annealing uses Monte Carlo methods of randomization and probability, and iterative improvement to make small improvements to the cost function. The moves are either accepted or rejected and then the process repeats itself.

The algorithm will be demonstrated using people to represent the numbers on the board. A shudoku grid (4 x 4) will be used instead and the players must use the process of Simulated Annealing to solve the puzzle. They will be allowed to make random swaps amongst themselves within each 2 x 2 square and decide for themselves based on probability whether or not the proposed move should be accepted. The game ends when they find a legal solution or the run out of time.

Observation of Tutorial Programs across CUNY Colleges

Reginald Dorcely

City College, Math Education

Project Description

The research, based on previous studies done on the Tutorial Program in the department of Mathematics at Medgar Evers College during my undergraduate studies, will focus on the functioning of Tutorial Programs in four CUNY Colleges (City College, Hunter College, York College, and Lehman College). We want to see whether or not these programs contribute to students and tutors' educational attainment.

The Project will involve:

- 1- Literature Reviews
- 2- Question survey
- 3- Observation of the Learning centers
- 4- Data collection
- 5- Learning and Using Statistics and Mathematics techniques (software) to analyze data

The Project Timeline:

Spring 2008

- 1- Literature review
- 2- Contacting the Tutorial Programs
- 3- Formulating question survey

Summer 2008

- 1- Defining the project system goal and project boundary.
- 2- Learning necessary tools to carry out the research

Fall 2008

- 1- Observation of the Tutorial Programs
- 2- Quantifying the observation
- 3- Presenting data

Deliverables:

Paper on Observation of Tutorial Programs will be sent to a pedagogical/Mathematics-Education.

Appendix 6: Informal Science Education at the Urban University Conference 2008

Informal Science Education at the Urban University Conference 2008



Sylvia Moya, It's All About Traits

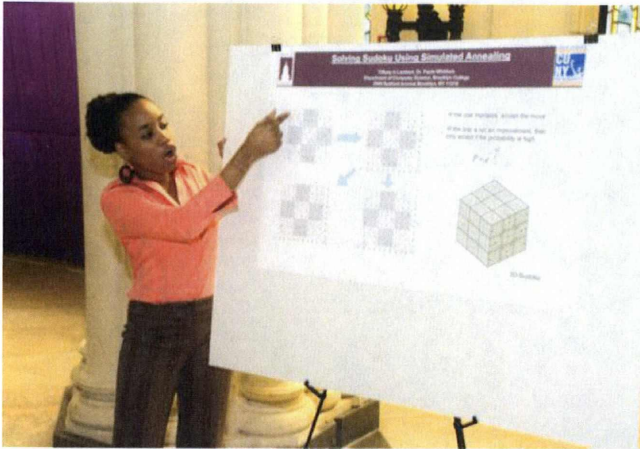
Students will be assigned an activity to enhance their understanding of inheritable traits. In this activity, they will create a bird based on the inherited letter code. These letters will represent a physical trait such as the bird's feather color. They will be asked to predict the bird's phenotype if mated with an identical one. Following the activity, students will take part in a field study where they must identify local NYC pigeons and their morph as well as courtship behavior. After the data has been collected, students must predict what the offspring might look like based on visible parental traits. Finally, students will be given a general knowledge of how these traits are encoded in our genes and how these genes are passed on to us from our parents. They must be able to select a phenotypic trait from their family and construct a diagram depicting how this trait has been passed down through generations.



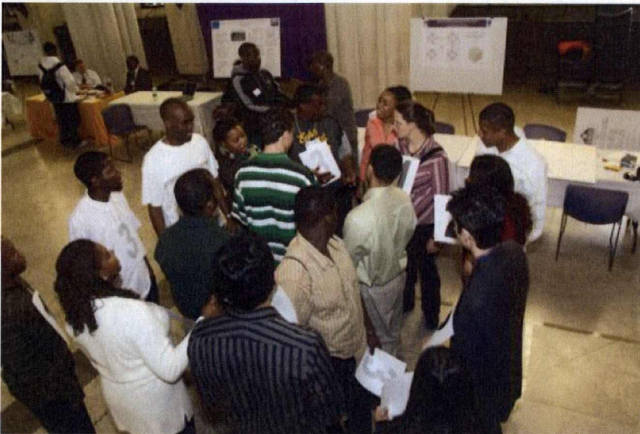
JoAnn Caban, Soap And Saponification

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In the current project (intended for grades 8-12) the objective is to teach the process of 'Saponification' by demonstration while teaching how soap acts as an intermediary between two substances that do not mix i.e. oil and water. While the process of making soap serves as a fun activity, students will learn and understand the principal behind the cleansing action of soap as well as basic chemical principles such as: pH, hydrophobicity, hydrocarbon chains, hydrolysis reactions, reactants and products. Included in the current project is a brief explanation on how students may begin to think as entrepreneurs, set prices for products, trademark, mass-produce and market their ideas.



Tiffany A. Lambert, BTd Scholar at the Urban University Conference 2008



SOLVING SUDOKU USING SIMULATED ANNEALING AND PEOPLE!

Tiffany A. Lambert – Department of Computer Science - Brooklyn College

Sudoku is a popular logic puzzle that has swept the world by storm in the past few years. Originally called Number Place, Sudoku is a puzzle played on a 9 x 9 grid. The task of the player is to completely fill in the grid, with some initially given, so that every row, column, and 3 x 3 square containing the numbers 1- 9 in some order. There are many computer algorithms to both generate, and solve these puzzles. In this experiment, we are using simulated annealing as an approach to optimization. Simulated Annealing uses Monte Carlo methods of randomization and probability, and iterative improvement to make small improvements to the cost function. The moves are either accepted or rejected and then the process repeats itself.

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Informal Math Education at the Urban University Conference 2008



BTT candidate Julio Conte engaging in Math Magic at the Urban University Conference 2008

Math is a very complex and sometimes intimidating discipline to master. It sometimes takes a special kind of talent to tackle the highly abstract mathematical formulas, the many equations that make up a problem, or the numbers needed to reach an answer in anything from music to the medical field. Many really complex analysis involve structures that can only be figured out using extensive mathematical, algebraic or calculus formulas. Most people would rather leave mathematics alone and not be bothered by their overwhelming formulas.

Want to impress a friend, a family member or a loved one? Mathematical calculations are often overlooked and many people are intimidated by the numbers that go along with them. But it does not have to be all boring and overwhelming. You can be the life of a party with a few simple tricks, or with a little practice, you can learn a thing or two about numbers and calculations. We all want to make sure that, when we are at a party, reunion or any kind of social activity we can be the center of attention, or simply help those in need when it comes to math, which happens to be a difficult subject that many people can not deal with. As such, this paper presents simple, yet impressive mathematical tricks that can grab attention and that are also a great exercise for the mind. It does not matter if you are good at math or not, with a little practice, you can use these tricks and these formulas to make calculations that you might have thought that were either impossible or very difficult to compute.

Informal Science Education at the Urban University Conference 2008



Yushaneen Wilson (Drexel University) "Edible Science": Inquiry With Food

Informal education is an opportunity for students to see the field of science in a new light. A growing body of research documents the power of informal learning experiences to spark curiosity and engage interest in the sciences during school years and throughout a lifetime. (NSTA, 2007) "Edible Science" is a standards based informal education project designed for middle school students. Students will be exposed to the biology of taste as they perform a scientific investigation using various types of bubblegum. Each brand of bubblegum will appeal to a different type of taste and will be used to collect data. Although students may not realize it, they will learn the fundamental principles of taste and scientific investigations upon the completion of this experience!