

# BRITE NEWS

Biomanufacturing Research Institute and Technology Enterprise

Premier Issue No.1, Vol.1



Photos: JWest Productions, Raleigh NC

## 2010 Design Excellence Award The American Institute of Architects

North Carolina Central University's BRITE facility recently received the 2010 "Design Excellence Award" (Educational Facility Design) from [The American Institute of Architects Committee on Architecture for Education](#). O'Brien/Atkins Associates of Durham was Architect and [The Freelon Group](#) served as design lead, laboratory planner and lead programmer.

Constructed in 2008, the building's design is metaphorically taken from an unraveled DNA strand and combines modern laboratories, classrooms and office space in a 56,000 square-foot, light-filled space. The Freelon Group has received numerous other awards for the BRITE Building.



BRITE is part of the statewide public-private initiative to provide a hands-on learning experience for undergraduate and graduate students interested in careers in the growing biotechnology industry.

North Carolina Central University

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**“How Exciting is Science?”**

**Pharmaceutical Sciences** are a group of interdisciplinary areas of study involved with the design, action, delivery, disposition, and use of drugs. This field draws on many areas of the basic and applied sciences, such as chemistry (organic, inorganic, physical, biochemical and analytical), biology (anatomy and physiology, biochemistry, cell biology, and molecular biology), epidemiology, statistics, chemometrics, mathematics, physics, and chemical engineering, and applies their principles to the study of drugs.

**CONGRATULATIONS!  
CLASS OF 2010**

NORTH CAROLINA CENTRAL UNIVERSITY  
COLLEGE OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF PHARMACEUTICAL SCIENCES

 TOMILOWO ABIJO M.S.	 BRONWYN HOLLIDAY B.S.	 HAZA IDRIS M.S.	 SARA KAROUM M.S.
 BETTAE LONG M.S.	 COVADAS MCLEAN B.S.	 LEANNA PEARSON M.S.	 ZAINAB THOMAS M.S.
	 MARISOL WATERS B.S.	 RUCHI YADAV M.S.	

**Bio-Trekers Science Enrichment Program**

Laboratory Experiments  
April 7 - 28

Summer Camp  
June 22-25

**Sponsors**  
Duke Energy  
North Carolina Central University BRITE  
C.C. Spaulding Elementary School  
21st Century Learning Center Grant

**Master of Science Degree**

Tomilowo Abijo	Ruchi Yadav
Bettae Long	Sarah Karoum
Haza Idris	Zainab Thomas
LeAnna Pearson	

**Bachelor of Science Degree**

Bronwyn Holliday	Marisol Waters
Covadas McLean	

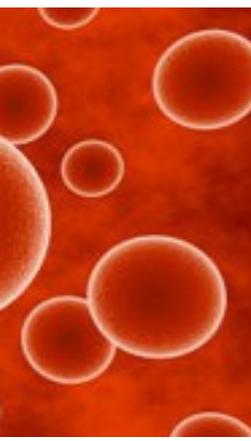


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- Dr. Liju Yang (Research Paper & Committee Appointment)
- Dr. David Kroll (RISE Grant)
- Dr. John Scott & Director Li-an Yeh Paper in *Science Magazine*

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# BRITE: The Student, The Graduate, The Instructor

by Tom M. Jones

*The biomanufacturing industry in North Carolina has broken new ground and the state's commitment to provide trained personnel through its higher education system comes without challenge.*

*Creating a systemic education progression for students to learn what success opportunities await in a growing industry on a global platform is the genesis of BRITE.*

**BRITE is the only formal biotech degree program offered by a North Carolina university.**

## **Shalonda Ingram, The Student**

After graduating with a degree in Biology from [Winston-Salem State University](#), Shalonda Ingram, an intelligent and methodical student says she was introduced to BRITE by a friend in undergraduate admissions.

Her immediate goal is to obtain an MS in Pharmaceutical Science. Multiple exposures to life-outside-the-lab is a core element of the BRITE construct. Practicing scientists and major venues such as the 101st AACR ([American Association for Cancer Research](#)) Annual Meeting in Washington, DC provided Shalonda such an opportunity.

Organized by Professor Kevin Williams, Shalonda, classmate Zainab Thomas and fellow students were first-timers among 18,000 attendees comprised of scientists and researchers whose specialties ranged from basic research to clinical and epidemiological cancer studies. At one conference segment, she presented her research project on ***Inflammatory Breast Cancer***.

"Researchers I met included antibodies suppliers," says Shalonda, referring to the vastness of cancer study. "One of the most significant contacts we made was a researcher who talked about different cell types."

[AACR reported about 5,500 proffered papers were presented.]

"We experienced so much data being presented on different aspects of the same project using techniques we never even thought of," she continued. "I now look at everything on a much broader scope."

When Shalonda talks with her friends about the uniqueness of the BRITE program, she says most of them, at first, mistake her career goal of becoming a pharmacist. "Oh no, it's about research."

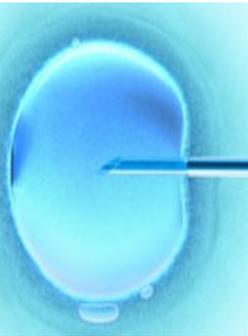
## **Zainab Thomas, The Graduate**

Zainab Thomas received her Master of Science degree in Pharmaceutical Science. Only a few years ago, the Thomas family saw Zainab graduate with a degree in Biology. Only this time, her degree came with a full-time research specialist position.

"My father, who works at the university as a math instructor, told me about BRITE as I was completing my undergraduate work," she recalls. "I considered it really good parental advice."

Adjunct professor, Abdul Thomas was elated when his daughter was accepted to the program.

"Coming into BRITE, professors provided us with first-hand knowledge about the industry while encouraging us to become more independent," Zainab explained. "For example, they gave us options to develop our own research projects."



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BRITE instructors are practicing scientists in their respective field and are able to provide students with cutting-edge information in biotechnology, biochemistry, and pharmacology as well as teaching them to closely examine processes in the development and production of pharmaceutical products. Additionally, students keep pace with current FDA (Food and Drug Administration) policy and laws while staying abreast of technology as it applies to research.

As a research specialist, Zainab admits the business changes quickly. Being exposed to the big picture, she adds: "There has to be a love of what you're doing in order to work in this field."

### **Dr. Kevin Williams, The Instructor**

"I'm a big believer that teaching outside the classroom is essential for students to become professionals," says Dr. Williams, an associate professor at BRITE. "What goes on in the real world and what they can learn to implement can become one of their biggest assets in seeking work after graduation."

Dr. Williams joined BRITE in 2007 and is committed to ensuring that all students are exposed to events, activities and participation in the scientific community.

"Networking, collaboration and a strong emphasis on communication are important," he continues. "For our students to get out and meet others is essential. In the pharma industry, companies look for these factors among potential employees."

Taking students to the AACR in Washington, DC was an example of a natural progression in teaching methodology at BRITE that keeps them inquisitive and motivated to explore opportunities.

"Zainab presented at the conference and took some tough questions from members of the scientific community," he said. "I want our students to develop the skills and confidence to work in this environment."

The conference in DC had more than 500 posted sessions, mini-symposia and several different concepts presented such as "Cancer Therapeutics."

Each semester, Dr. Williams takes students to [Biogen Idec](#), one of the biggest bio-pharmaceutical businesses in the country and located only two miles from campus in Research Triangle Park. The idea is to get them to ask questions and picture themselves in such a career environment.

He also is co-chair of the processing group, a project funded by the North Carolina Biotechnology Center. The Center is responsible for assisting the progression of biotechnology ideas into commercial products.

As instructor and mentor, Dr. Kevin Williams ensures the quality and value at BRITE, preparing students for work in the real world. Just ask Shalonda Ingram, Zainab Thomas, fellow students and graduates.

**Together, this is their story! The BRITE story.**



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# Student Associations News

## NCCU's ISPE Annual Meeting Travel Awardees



Nine BRITE students won ISPE ([International Society for Pharmaceutical Engineers](#)) Travel Awards to the Annual Meeting in Orlando, FL, Nov. 7-10.

ISPE is the world's largest association dedicated to educating and advancing pharmaceutical manufacturing professionals. Serving 25,000 members in 90 countries ISPE provides an environment for experts, technologists, regulators, consultants and students to exchange ideas and practical experience. ISPE's purpose is to lead the global change and innovation in the pharmaceutical technology processes.



NCCU ISPE Chapter winners, (l. to r.) MaKendra Umstead, President; LaShaya Smith; Syreeta Lyons, Secretary; Jeremy Brackett, Treasurer; Margie Parker, Marketing; Ana Berglind, Vice President; and Kevin Smith, Community Outreach.

**DID YOU KNOW?** The North Carolina Central University Chapter of the International Society for Pharmaceutical Engineering is in its **third** year of existence. The goals are to increase student involvement, provide career development, engage in community service, and encourage networking through social activities.

## North Carolina Local Section of American Chemical Society



The North Carolina Local Section of the American Chemical Society (ACS) held its 124<sup>th</sup> conference on September 28, 2010. The event included a poster competition, research scholarship recipients and guest speaker, Dr. Jan Genzera Celanese, professor of Chemical and Biomolecular Engineering at North Carolina State University.



BRITE students, **Melony Ochieng**, "*Novel Hyperbranched Polyglycerol-Drug Conjugate*" and **Jaouad Mamouni** "*Antimicrobial Activity of Single-walled Carbon Nanotube*" took first and third place, respectively, in the poster competition. Additional presenters were Clinton L. Robinson and Lafi Yousef, "*Approach Towards the Synthesis of the Natural Products Littorachalcone and Verbenachalcone*," and Charles Jagun, "*Predictive Modeling of Gene Silencing by Modified siRN.*"

Other area universities represented were North Carolina Central, Duke, North Carolina State, University of North Carolina – Chapel Hill, Meredith and Campbell.

## ABRCMS Conference Travel Award Winners

The American Biomedical Research Conference for [Minority Students](#) (ABRCMS), is the largest, professional conference representing biomedical, behavior sciences and mathematics. More than 280 representatives from graduate programs at US colleges and universities as well as scientists from government agencies, foundations, and professional scientific societies attended the four-day conference Nov. 10-13 in Charlotte, NC. Designed to encourage underrepresented minority students to pursue advanced training, the conference also provides faculty mentors and advisors with resources for facilitating student success. During the four-day conference, 1,200 students participate in poster and oral presentations in ten disciplines in the biomedical and behavioral sciences.



Travel Award Winners, MaKendra Umstead, Ana Berglind and Ninicia Scott are backed up by BRITE Academic Advisor, Natacha Janvier-Derilus and Linda Love, BRITE International Relations Director who also traveled to the Conference to support students.

**Dr. John Scott, Associated Professor / Dr. Li-an Yeh, BRITE Director**

**"Alleviating Cancer Drug Toxicity by Inhibiting a Bacterial Enzyme," was published in *Science Magazine* (11/07/10).** Co-authors are Dr. John Scott and Dr. Li-an Yeh and a group of UNC-CH collaborators. "This story began with the compounds we discovered in the BRITE facility," says Dr. Yeh. "It is a typical example that basic research married with the translational science can have a happy ending." [www.sciencemag.org](http://www.sciencemag.org)

**Dr. Liju Yang, Assistant Professor**

**"Antimicrobial Activity of Single-Walled Carbon Nanotubes: Length Effect,"** a paper by Dr. Liju Yang with undergrads, **Cheenu Yang** and **Jaouad Mamouni** as co-authors - was recently accepted by **Langmuir**, one of the American Chemical Society's leading publications in Physical Chemistry. Dr. Yang also was named program co-chair for the **Institute of Biological Engineering (IBE) 2011 Annual Conference** to be held March 3-5, in Atlanta, GA.

**Dr. Kevin Williams, Associate Professor, Pharmaceutical Sciences**

Dr. Kevin Williams was named recipient of an **AACR (American Association for Cancer Research) Minority-Serving Institution Faculty Scholar in Cancer Research Award** at the third annual "Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved," conference held in Miami, FL.

**Dr. David J. Kroll, Professor and Chair, Pharmaceutical Sciences**

NCCU has received a **R25 RISE grant** from **NIGMS (National Institute of General Medical Sciences)/MBRS (Minority Biomedical Research Support)** to prepare students to be competitive for Ph.D programs. The total \$500,000 two-year funding covers eight undergraduate and two graduate students in "academic advancement programs of science curricula, lab workshops, mentoring by world-class scientists and sponsored research at Ph.D. granting institutions." RISE aims to enhance minority-serving institutions research training output in biomedical and behavioral sciences.



NIGMS

**VANCE-GRANVILLE COMMUNITY COLLEGE CONNECTION**

Students in Bioprocess Technology courses at Vance-Granville Community College visited BRITE and had an opportunity to see what next steps they could take in biological sciences.



Franklin County Early College High School students visited BRITE as part of a VGCC field trip, Sept. 1. Front: Jasmine Parker, Marissa Tyler, Lakeisha Blackwell, Akira Romero and Jennie Britton. Back, Jeremiah Hurst, Markel Dawson, David Smith, Ethan Barnwell and Trevonte Alexander.



BRITE senior scientist (L) Audrey Adcock, shows laboratory equipment to Early College student, Marissa Tyler.

The Bioprocess Technology curriculum prepares students to work as process technicians in biological products manufacturing facilities. Several graduates of VGCC's two-year associate degree program have already transferred to study at BRITE.

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## *"In Their Own Words..."*

**Student:** MELONY OCHIENG, Junior  
**Major:** Pharmaceutical Sciences and Chemistry  
**Award:** [Ronald E. McNair 2010 Scholar](#)  
**Goal:** College professor in a field promoting lifelong learning



*"Earlier this year, when I got an email about the program, I had seven days to apply. My goal has been to get to graduate school and the McNair award would definitely help. Yes, when I found out that I won, I was extremely excited, in fact, very excited. Meeting other McNair scholars from diverse careers was amazing. There was one student I met who is examining gender issues and acceptance in various religions. Another was examining how the use of poetry can help in the teaching of math."*

The Ronald E. McNair Post baccalaureate scholars program was established in memory of astronaut-physicist and Challenger crew member Dr. Ronald McNair. It is targeted towards talented disadvantage undergraduate students. The main goal is to increase the number of Ph.D. recipients throughout the nation by assisting students in interpreting the professional graduate education culture while serving as a bridge between undergraduate and doctoral programs.

**Student:** MAKENDRA UMSTEAD, Senior  
**Major:** Pharmaceutical Sciences  
**Award:** [2010 UNCF/Merck Undergraduate Science Research Scholarship](#)



Dr. Richard Clark, CEO of Merck & Co.; Umstead; Dr. Michael Lomax, President/CEO of UNCF; and Dr. Peter Kim, President of Merck Research Laboratories.

*"I found out that I was chosen to receive the 2010 UNCF-Merck Undergraduate Science Research Scholarship which includes an internship at Merck this (past) summer and the summer following my senior year. I was invited to Merck's 'A Fellows Day' in Blue Bell, PA. An awesome experience. This was the first time I had seen so many minority scientists in one place."*

The UNCF/Merck Science Initiative (UMSI) provides undergraduate, graduate and post-doctoral support to outstanding African-American students pursuing studies and research careers in biological and chemical sciences. Scholarships are awarded through a national competition to undergrads, grad students and postdoctoral researchers. As a 2010 UNCF/Merck Undergraduate Science Research Fellow, Umstead will intern at the Merck Research Laboratory in Boston, MA where she is "matched up" with a research mentor.

**Student:** NINECIA SCOTT, Sophomore  
**Major:** Pharmaceutical Sciences  
**Award:** [GlaxoSmithKline Women in Science Scholarship](#)



*"First, I want to say that the people of NCCU have been supportive from the beginning. This summer, I interned at Washington University in St. Louis (St. Louis, MO) in the Biomedical Residence Apprenticeship program. Along with other students, some of whom were in grad school, we were paired up in a mentor network with the goal of presenting our research findings. My mentor is Ms. Makda Mebrahtu, an Associate Scientist within the Department of Systems Research."*

[The North Carolina GlaxoSmithKline Foundation](#) provides these scholarships to support science education. The program offers a unique educational opportunity coupling the scholarship recipients with a mentor from GlaxoSmithKline. The mentor provides valuable leadership to students by sharing experiences and successes, and helps students set realistic expectations for their own careers. The Foundation has established more than \$700,000 in endowed scholarships at 29 colleges and universities across North Carolina.



## *"In Their Own Words..."*

**Student:** ANA BERGLIND, Senior  
**Major:** Pharmaceutical Sciences  
**Internship:** [Broad Institute of MIT and Harvard University](#)  
**Goal:** Earn a Ph.D. and become a research scientist



*"I had the opportunity to intern at one of the most innovative research institutes with access to many influential scientists. After my internship I left Boston a different person arriving at NCCU as a motivated young scientist. I was told numerous times that I am the future of science and at some point I started believing it."*

Unique among biomedical research institutions, The Broad Institute brings together a diverse group of undergraduate and graduate students, postdoctoral fellows, professional scientists, administrative professionals, and academic faculty. It encompasses three organizational units: core member laboratories, programs and platforms. Scientists in these units work with other collaborators around the world - to tackle critical problems in human biology and disease.

## *BRITE Interns Among Global Companies*

### **Ashley Coffey**

Quality Department,  
Merck & Co.  
Durham, NC



I participated and shadowed the everyday procedures of the Quality Assurance Team. Since the Durham site is new and they are still working on getting FDA approval, I was able to help with what goes into the FDA approval process. I assisted with water collecting, writing SOP's, compressed gas testing and room qualifications. It was my first experience in a class A environment. My mentor made sure I understood the importance of quality at Merck.

### **Catherine Wooten**

R & D Division,  
Talecris,  
Raleigh, NC



I worked at Talecris Biotherapeutics in their Bioanalytics R&D Division at North Carolina State University. I worked in the gel lab running SDS PAGE gels and IEF gels. I also learned a new method for protein quantification, and got exposure to cIEF and HPLC instrumentation. This internship broadened my skill set and taught me better time management. Having an experience in industry gave me an idea of how things function.

### **Martinique Thomas**

SEP Program  
UNC-Chapel Hill  
Chapel Hill, NC



I participated in the Science Enrichment Preparation Program that consisted of four rigorous courses, Princeton Review test prep, career shadowing, and networking opportunities. We received instruction in organic chemistry, physics, cell physiology, and biostatistics. I felt intimidated since I had never taken any of those courses. As time progressed, I realized I had an advantage because when I returned to my home institution, I would be well prepared to do exceptionally well in those courses.

### **Kezia Addo**

Institute of Genomic  
Science and Policy  
Duke University  
Durham, NC



I participated in the IGSP summer fellows program at Duke where I was privileged to work in a biomedical engineering lab. It was a totally new environment. However, by team-working with the graduate students and post docs, my transition was easy and quick. The goal of my project was to investigate the effect of Myc on Cyclin D1 in cell cycle progression. The complexity of my research project enhanced my analytical and problem-solving skills.

### **Alice Rose**

Novartis Flu & Vaccine  
Holly Springs, NC



My internship was in the Quality Control Lab processing raw materials and my job included technical writing developing Test SOP's for raw materials that the plant uses in the production of its products based on compendiums, maintaining the online MSDS, and inventory of chemicals and equipment. From Quality Control, I learned about operations of different mechanical apparatus used in the daily laboratory procedures.

## 2010 BRITE SUMMER INTERNSHIPS

The accomplishments of BRITE students continue beyond the standard school year and don't go unnoticed by their supporters. On October 14th, a special presentation was held for members of the BRITE and NCCU community to learn about this year's student success. There was a total of ten academic and, equally important, six industry internships. From this group, five students\* were selected to give a report detailing their internship experience with an emphasis on (a) job responsibilities, (b) meaningful relationships created and (c) lessons learned.

### ACADEMIC INTERNSHIPS

<b>KEZIA ADDO*</b>	<b>DUKE UNIVERSITY</b> Institute of Genomic Science and Policy Fellowship Program	<b>ANA BERGLIND*</b>	<b>THE BROAD INSTITUTE OF MIT AND HARVARD</b> Boston, Massachusetts Genomic Summer Research Program
<b>MUSOKI MWIMBA</b>	<b>DUKE UNIVERSITY</b> Institute of Genomic Science and Policy Fellowship Program	<b>NINECIA SCOTT*</b>	<b>WASHINGTON UNIVERSITY IN ST. LOUIS, ST. LOUIS, MISSOURI</b>
<b>CLINTON ROBINSON</b>	<b>UNC CHAPEL HILL</b> Science Enrichment Program	<b>JACKIE WHITE</b>	<b>NORTH CAROLINA CENTRAL UNIVERSITY</b> College of Science and Technology LAB (Dr. Catherine Silver)
<b>CHEENOU YANG</b>	<b>UNC CHAPEL HILL</b> Science Enrichment Program	<b>JAOUAD MAMOUNI</b>	<b>NORTH CAROLINA CENTRAL UNIVERSITY</b> BRITE LAB (Dr. Dayami Lopez)
<b>MARTINIQUE THOMAS</b>	<b>UNC CHAPEL HILL</b> Science Enrichment Program	<b>WILLIAM HOPKINS</b>	<b>NORTH CAROLINA CENTRAL UNIVERSITY</b> BRITE LAB (Dr. Alfred Williams)
<b>MARTEZ YANCEY</b>	<b>NORTH CAROLINA STATE UNIVERSITY</b> Synthetic Biology Research Experience	<b>KENDRA DAVIS</b>	<b>NORTH CAROLINA CENTRAL UNIVERSITY</b> BRITE LAB (Dr. Dayami Lopez/ Dr. Carla Oldham)
<b>MELONY OCHIENG*</b>	<b>NORTH CAROLINA STATE UNIVERSITY</b> <b>ADAM MICKIEWICZ UNIVERSITY</b> POZNAN, POLAND Polish Research and Culture Experience		

### INDUSTRIAL INTERNSHIPS

<b>MAKENDRA UMSTEAD*</b>	<b>MERCK RESEARCH LABORATORIES</b> Boston, Massachusetts UNCF-MERCK Fellowship Program	<b>CATHERINE WOOTEN</b>	<b>TALECRIS BIOTHERAPEUTICS</b> Centennial Campus, NCSU Raleigh, North Carolina Bioanalytics R&D Division
<b>ASHLEY COFFEY</b>	<b>MERCK DURHAM</b> Vaccine Manufacturing Facility Durham, North Carolina Quality Assurance Team	<b>ALICE ROSE</b>	<b>NOVARTIS</b> Holly Springs, North Carolina Quality Control Laboratory
<b>MARGIE PARKER</b>	<b>BIOGEN IDEC</b> RTP, North Carolina Quality Management	<b>COVADAS MCLEAN</b>	<b>BIOGEN IDEC</b> RTP, North Carolina



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# BIO-TREKERS NEIGHBORHOOD

Credit: Brooklyn Museum, NY

### CSI Classroom's Multiple Skills Instruction

Mention *CSI (Crime Scene Investigation)* to the average viewer and the response will probably point to the highly popular [TV show](#) that has made forensics a household term.

Mention it to 5<sup>th</sup> graders **Michael Hope** or **Godwin Igbokwe** of [C.C. Spaulding Elementary School](#) in Durham and the likelihood is that *they* will discuss the intricacies of using forensics to solve a case based on what they've learned this summer in the Bio-Treker's program for local elementary and middle school participants.



Godwin Igbokwe and Michael Hope explaining the use of a chromatography test to solve the case.

Sponsored by BRITE, the innovative Bio-Treker program uses science with modern teaching methods to engage and enhance the educational performance level of 4th to 8th grade students. They participate in four-day a week sessions over a six-week period that is crammed with scientific scenarios, technology and facilitators encouraging them to use multiple learning styles. The results are remarkable, particularly when students return to their regular school year.

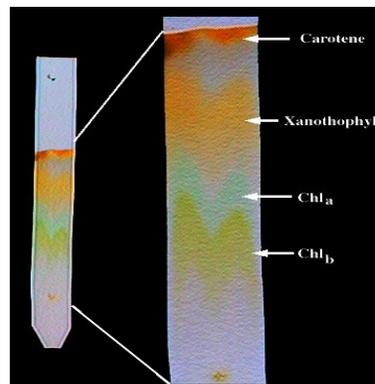
"In the long run the program has helped my grades," says the shy Michael who decided to return for a second summer. "Last year my writing skills (grade) improved from a C to a B. It also helped my presentation skills in front of other students, too."

Instructors recognize that improvements in multiple skills vary among students. Bio-Trekers show positive improvements in English, writing, math, general science along with social science and physics. Students' working in teams also bolsters their confidence and increases their desire to learn.

Godwin talked proudly about how the program improved his math skills. Already an excellent student in his regular classes, he is confident on a career as a scientist, like his dad.

*CSI's* forensics-laced plots on television made it an attractive and captivating learning module to present to students. Their case consisted of evidence of a break-in, theft of medicine, a ransom note and six potential suspects. Divided into groups, they learned how to perform a [chromatography test](#). The results determined what type of ink was used in the ransom note. A lesson on the chemical breakdown of molecules helped them understand the use of chromatography.

Instructors provided students with pro- and con analysis of the evidence upon which they had to convincingly draw conclusions and present findings before the class.



#### Editor's Note:

Throughout the Bio-Treker program, all students were required to write in journals about class activities in which they were engaged, present reports before classmates, participate in interactive discussions, express creativity where possible and actively encouraged to ask questions of instructors at any time about their work.





## Lady Bio-Trekers at Work: *Making Friends, Defying Gravity*

Tamya Robinson, 7<sup>th</sup> grader from [Shepard Middle School](#) met a new friend, 8<sup>th</sup> grader Sacha Thompson of [Neill Middle School](#) who is a returning student to the Bio-Treker program.

"This was my first year in the program," says Tamya. "The first day, I wasn't really sure about things, but once I got comfortable, I knew what was expected."

Tamya's first experiment was to build a temperature holding vessel and measure heat in [Celsius](#) and [Fahrenheit](#).

That's when she met Sacha, they teamed up and immediately discussed the problem and solution.

"This is my second year in camp," says Sacha. "We're doing more activities and experiments with technology. In fact we had to use [PowerPoint](#) software to talk about ourselves and background to classmates."

Both young ladies credit their instructors with teaching them the details, creativity and flexibility of the software. Their next project was to build a tribute to Michael Jackson using PowerPoint.

While "defying gravity" for fun can be unnerving and exhilarating, Tamya says it's physics. The best lesson for the class was a trip to Carowinds Park to study the physics of roller coasters. Carowinds was a great place to study force, gravity, mass and acceleration both students agreed. Bio-Trekkers are always encouraged by instructors to discuss what they learn.

Aside from physics, Sacha emphasized was really looking forward to expanding her math skills. "Last year when I was in class, I greatly improved in the regular school year," she explains. "I did well on my EOG (end of grade test) and I would like to do more with fractions, percentages and basic business math, too."

Though making new friends, PowerPoint-ing Michael Jackson and defying gravity among other things was an experience to remember, Tamya and Sacha were clear about learning how to increase their knowledge, improve their test scores and recognize the value of Bio-Treker's unique learning styles.

**YOU TAKE THE RIDE!**  
Click the roller coaster for a  
"cyber-ride" on Carowinds'  
The Intimidator



Bio-Trekers Sacha Thompson and "NBF" Tamya Robinson.



## Durham Entrepreneurs Donate Technology: Tommy and Gail McNeill

Entrepreneurs, Tommy and Gail McNeill of Durham would probably acknowledge that technology is fundamental and a necessary education tool, particularly for young learners. But the McNeills, owners of **Gail's Hair Salon**, took it a step further and without hesitation, donated Apple's newest product - an iPad to the BRITE Bio-Trekers program at NCCU.

"We are supportive of your mission to develop a comprehensive pipeline to ensure that students are prepared to enter careers in the life sciences," said the McNeills as they presented Apple's most popular wireless Internet product to BRITE officials.

*(More about Apple's iPad, click on picture.)*

Only a block away from the university campus is C.C. Spaulding Elementary School where this year's Bio-Treker summer session was held. The program provides a concentration of science, math



Tommy & Gail McNeill say they would support an after school science program like Bio-Trekers.



and technology to elementary and middle school students utilizing a variety of unique learning modules. The McNeills gift will allow students "hands-on" opportunities and contribute to improving students learning curve.

While there is discussion between BRITE and C.C. Spaulding's administration about the possibility of expanding their science curriculum, the McNeills say they would be interested in supporting an after-school, high caliber program like the Bio-Trekers.

"Tommy and Gail are terrific with their generosity and their vision to see how students will embrace technology to invigorate their educational experience," replied Linda G. Love, Industrial Relations Manager for BRITE. "They are the community extension in support of these children."

The McNeills made it clear that they are "committed to the educational success in Durham County Public Schools and North Carolina Central University."

----- **Gail's Hair Salon**  
3208 Guess Rd, Durham, NC 27705  
919-471-5584

**Pampering Women**  
2917 Guess Rd, Durham, NC 27705  
919-479-0230

### Science-Related Websites

American Association for Cancer Research  
[www.aacr.org](http://www.aacr.org)

American Chemical Society      NASA  
[www.acs.org](http://www.acs.org)                              [www.nasa.gov](http://www.nasa.gov)

CSI – TV Episodes                      Epocrates Rx  
[www.cbs.com/primetime/csi/](http://www.cbs.com/primetime/csi/)      [www.epocrates.com](http://www.epocrates.com)

Int'l. Society for Pharmaceutical Engineering      Science Magazine  
[www.ispe.org](http://www.ispe.org)                              [www.sciencemag.org](http://www.sciencemag.org)

Popular Science                              Biology4kids  
[www.popsci.com](http://www.popsci.com)                              [www.biology4kids.com](http://www.biology4kids.com)

### COMING UP IN OUR NEXT ISSUE:

**Kalliste eSystems Demonstrated at BRITE**  
"Investigating ways to integrate the use of electronic lab notebooks in the BRITE program."

#### BRITE NEWS NEWSLETTER

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