UNC Chapel Hill, School of Education

Volume 12, Issue 1
October 18, 2011

UNC Chapel Hill NC-MSEN Pre-College Program

Summer Academy

Middle School Summer Academy (MSSA)

MSSA students performed hands-on activities in their science class. They learned about the periodic table, skeletal system, environment, dissected a frog, and visited Dr. Moran's Lab. Dr. Moran's graduate students led the discussion on their research and gave the students an opportunity to perform hands experiments on absorption, optics, and photovoltaic (solar) cells).

In the math, students were introduced to algebra, geometry, and played games to explore percent's, fractions and variables.

Students read, discussed and completed student lessons on "Jaguar Book" by Roland Smith in their language arts class.

High School/SPACE Summer Academy (HSSA)

HSSA students built and tried to launch hot air balloons in their science class. They also made airplane gliders, performed experiments with the gliders, and brainstormed on ways to cleanup an environmental disaster.

In math, students worked on packets for their upcoming math classes – i.e. Geometry, Algebra II, Pre-Calculus, etc. Students played games to reinforce the new concepts explored.

Students researched, wrote and presented a document on a persuasive argument. In the Careers class, rising 9th graders set-up CFNC accounts, reviewed the HS graduation requirements, and set up their 4 yr. high school plan. Tenth (10th) – 12th continued to explore CFNC, reviewed and revised 4 yr. high school plan, and explored careers and colleges.

STEM Academy

Students rotated between three classes called Research Project, Cultural and Exploration.

Research Project – Students researched, prepared and presented a project on a STEM topic. The students were interviewed and the projects were judged by Science Fair judges and by also by peer review.

Cultural – Students explored classes like Drama (Improvisation), Zumba, and went on several UNC Chapel Hill campus field trips. The UNC Chapel Hill trips were to the Morehead Planetarium, Dr. Moran's Lab, School of Public Health and Ackland Art Museum. Students attended the "Astronaut" &"Science Live Phenomenal Physics" show at the planetarium. Graduate students in Dr. Moran's lab explained their research and led students to perform hands experiments on absorption, optics, and photovoltaic (solar) cells). Students toured and learned more about Public Health research and careers. At the Ackland Art Museum students visited three exhibits and learned how art can relate to math and science.

Exploration – students performed several hands on experiments – Mystery architecture, Lego Contraption and Circuits. Students also built an edible landfill, mousetrap car, airplane gliders and terrarium.


Dr. Moran's Lab activity


Zumba


HS – Glider Activity


MS – Frog Dissection


HS – Exploring Limits


Ackland Art


STEM Academy – Circuits


HS – Balloon Launch


STEM- Research Science Fair

Camp Invention

PCP hosted Camp Invention for rising 3rd to 5th grade students. We participated in the CREATE program which featured – Planet Zak, Saving Sludge City, Imagination Point Ride Physics, I Can Invent: Edison Workshop and Game On: Power Play. The students were divided into two teams – rising 3 – 4th graders and rising 5th graders. The rising 3rd-4th graders were called the "A Team" and the rising 5th graders were called "Young Money." Students brought take apart items (i.e. an old VCR machine or computer keyboard) and recyclable materials for the classes.

Problem Solving on Planet Zak

Students had to use their problem solving skills and work on teams to build a shelter, protect themselves from the storms, build a spaceship, retrieve food from other side of large swamp and launch their spaceship from Planet Zak that they crash landed on.


Imagination Point: Ride Physics

Students worked as design interns for the world's newest and largest amusement park. Students explored Newton's three laws of motion and the science behind rides before designing and constructing their own amusement park rides.


Saving Sludge City

Sludge City has a serious pollution problem. Students worked on teams and learned about pollution and rebuild the city into an eco-friendly city.


I Can Invent: Edison Workshop

"A Team" students invented a new toy or game that will roll a ball toward one of two goals using at least two items from their take apart items. The invention had to have at least three different actions that their balls roll through.


The "Young Money" students built a Rube Goldberg-type machine that would display a winner flag using their take apart and recycled items. The machine had to have at least four separate steps or actions. The ball must run through the entire machine without human interaction.


Game On: Power Play

Students participated in team building games with hula hoops, balloons and other materials.


SCIBLS

Quentajia Small, senior from Jordan High School, was the UNC Chapel Hill Summer College in Biotechnology and Life Sciences (SCIBLS) representative. Her project title was "Genotyping Unknown Bacteria". She presented her project at the 10th Annual OPT ED Alliance Day, October 14, 2011.

Quentajia at 10th OPT ED Alliance Day

NASA SPACE Updates

- Twenty six (26) NASA SPACE (Students Participating in an Aerospace Collaborative Experience) students participated as a cohort with the High School Summer Academy.
- Students visited the Washington Air & Space Museum (July 11-12, 2011). At the museum students attended the "Space Station Sensation Demonstration", guided "Exploring Space Tour" and went to "Legends of Flight 3D" IMAX movie. While in DC, PCP also visited the Newseum, Old Post Office Pavilion (Clock Tower Tour), US Capitol Hill Tour and meet briefly with Congressman David Price.

Space Station Sensation Demo

Guided "Exploring Space Tour

Students at Newseum

Old Post Office Pavilion

On Capitol Hill with Congressman Price

- SPACE students will continue to rotate as a cohort during Saturday Academy Session.
- Four students attended the 10th Annual OPT ED Alliance Day, October 14, 2011.

Saturday Academy

Session I started on October 1, 2011. About 100 students were registered to attend. The middle and high school students rotated between four classes – mathematics, science, language arts, careers (for high school) and competition prep (for middle school).

Students in Action!

Parent Academy

Parent Academies are scheduled for the first and last Saturday of each Saturday Academy Session. The first Parent Academy occurred Saturday, October 1st. Parents leaned about the history of the NC-MSEN Pre-College Program and worked in groups to organize the UNC Chapel Hill PIE Club.

Arthur G. Affleck, III was the featured speaker and spoke to the parents about his educational and professional journey. He shared the importance of helping students navigate through their secondary school experience and to achieve their higher education goals. He was well received and told parents that we should cheer as loud for "A's" as we do for sports.

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We're on the Web!

www.unc.edu/depts/ed/pcp

Upcoming Events

Saturday Academy – Session I
October 22
November 5
November 19

FIRST Robotic Interest Meeting
October 22

Parent Academy
November 19

FIRST Robotics Kickoff
January 7

FIRST Robotics Build Season
January 7 – April

Saturday Academy – Session II
January 14
January 21
February 4
February 11

Parent Academy
January 14
February 11

Dr. Martin Luther King, Jr. Birthday Celebration
January 14

10th Annual NC OPT–ED Alliance Day

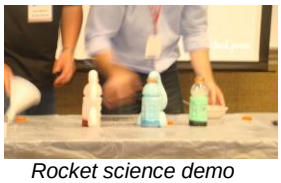
Twenty two middle and high school students attended the Tenth Annual NC OPT-ED Alliance Day. NC OPT-ED (North Carolina Alliance to Create Opportunity through Education) is an alliance consisting of all NSF-Sponsored diversity programs in North Carolina.

The middle school learned about astronomy, marine sciences, critical STEM careers, nanotechnology, making the leap to high school, radio astronomy and rocket science. The high school students learned about the Gates Millennium scholarship, the College Foundation of North Carolina, interpersonal skills, chemistry and a listened to a college panel discussion. Four of the high school students were NASA SPACE students. All students visited the college recruitment fair and the research presentations.

Quentajia Small presented her SCIBLS research project – "Genotyping Unknown Bacteria".


Radio Astronomy


Quentajia at Poster presentation


Rocket science demo


Rocket science demo


Student trying to balance rocket


Students exploring rocket

FIRST Robotics Competition

- Got to be NC (May 22, 2011) – FIRST Tar Heel Robots Team #3331 showcased the robot and competed against other NC teams to help recruit new students. PCP also shared information about the Network and UNC PCP components.




Students and robot at Got to be NC

- 2011-2012 Season Updates
  - New and old members are being recruited for the 2011-12 season.
  - JC Penney sponsored a portion of the registration fee. The balance of the registration fee will come from student fees, UNC Chapel Hill soccer & basketball games concessions and donations yet to be determined.
  - The first meeting for students, parents and mentors is October 22, 2011.