North Carolina School of Science and Mathematics

Accolades and Awards
Foundation Board of Directors Meeting, Thursday, March 12, 2015
Board of Trustees Meeting, Friday, March 13, 2015

Students - Academic

- 14 teams from NCSSM, representing each of the 4 categories, were named as Semifinalists.
- All Summit Diplomats will go on to present their product ideas at the 2015 Innovation Summit at the Kennedy Space Center April 9-11, 2015.
- Finalist teams from each category will be announced on April 1, 2015.
- Aerospace and Aviation
  - HIRESST – Rishi Sundaresan, Nimit Desi, and Daniel Lee
  - PeriPump – Aaron Sartin and Annie Hattle
- Cyber-Technology and Security
  - Gas Pass – Nimit Desi, Rishi Sundaresan, Matt Zheng, Pratham Patel
  - Simbrillia - Verifica – Rebeca Lui, Kimberley Zhang, Micah Halter and John Fang
- Energy & Environment
  - AquaVerum – Frack Boys – John Watters, Vikram Aikat, Kunal Lodaya, Jeff Hu and Michael Yang
  - Hydrocanal – Phillip Jacobson, Alan Xie, Daniel Blackley
  - Narwhal Squad – Narwhal Water Enhancement Project (NWEP) – Amy Burton, Braxton Baird, Madison Hendrick
  - SUNCAP – Shuyi Wang, Sophia Hu, Amanda Li, and Laasya Renganathan
  - Unicorn 1 - Glucose/Oxygen Biofuel Cell – Daniel Magley, Betty Liu, Xian Xu
- Health and Nutrition
  - Electrowave Nation – Micro Charge Medical Receiver – Daniel Magley, Betty Liu, Xian Xu
  - Fetch Five - Vapor Paper – Katherine Wang, Caroline Liu, Guy Blanc, Henry Bristol and Praruj Pant
  - Healthy Unicorns - Healthy Me – Pranau Kemburu, Abimanyu Deora, Irena Huang
  - MontiAir – Chase Yuan, Michelle Sun, and Rose Huang
  - VPTP - ToneAware – Vipha Puri and Tejal Patwardham
- Also 2015 Special Edition Category: Giant Leap to Mars
  - HIRESST
  - Electrowave Nation – Micro Charge Medical Receiver
  - In 1969, Apollo 11 astronaut Neil Armstrong’s one small step onto the moon’s surface became the catalyst for mankind’s giant leap into space exploration.
  - To celebrate the 45th anniversary of the Apollo 11 moon landing, NASA and the Conrad Spirit of Innovation Challenge (Conrad Challenge) invite you to take a Giant Leap to Mars and design creative solutions addressing the issues and challenges of a Mars mission including: long duration space travel, healthcare, nutrition and quality of life.
- Thank you to sponsors and mentors Dr. Myra Halpin, Instructor of Chemistry and Dr. Kim Monahan, Instructor of Biology.
- For more information see http://www.conradchallenge.org/2015summitdiplomats/
- The Summit Diplomat teams are the Semi-Final teams with the highest scoring Innovation Portfolios. All Summit Diplomat teams have been accepted to the next phase of the Conrad Challenge! ALL Summit Diplomat teams are invited to the Innovation Summit April 9-11, 2015 at the Kennedy Space Center. This three day event will be a competitive, yet intimate, environment where leading entrepreneurs, government officials, and scientists will join the teams in a collaborative, social forum to learn from each other and help guide the development of your 21st century technologies.
- Summit Diplomat teams are also invited to complete elements G, H and I of their Innovation Portfolio by the next deadline of March 15, 2015. Judges will review the completed Innovation Portfolios and the Finalist teams from each category will be announced on April 1, 2015.
- Conrad also has a very special opportunity for two Diplomat teams to attend a once-in-a-lifetime event on Saturday, April 11 to be part of the Apollo 13 Anniversary Celebration and meet the astronauts and flight directors from that historic and hair-raising mission! All teams at the Summit will be eligible to win. We will hold a drawing during the luncheon on Friday, April 10. Selected teams will be provided transportation to and from the event.
- The Conrad Spirit of Innovation Challenge was founded by Nancy Conrad in honor of her late husband, astronaut, innovator, and entrepreneur, Charles “Pete” Conrad Jr., in 2008. The Conrad Challenge is an annual, multi-phase innovation and entrepreneurial competition that brings together a dynamic community of innovators and entrepreneurs driving a collaborative movement to develop extraordinary and viable solutions to benefit our world in one of four areas: Aerospace & Aviation, Cyber Technology & Security, Energy & Environment, and Health & Nutrition.
- Prizes & Awards
  - Teams compete for the opportunity to be recognized as Pete Conrad Scholars and cash awards!
  - Teams are eligible to receive seed funding grants, investment opportunities, patent support, business services, scholarships and other opportunities (as provided by our partners and sponsors) to grow their solution into a real business.
- Pete Conrad Scholars
  - Conrad Spirit of Innovation Challenge winning teams are recognized as Pete Conrad Scholars. This prestigious ranking acknowledges top entrepreneur achievers and encourages the continued development of their innovative product. These young entrepreneurs are eligible to apply to the Conrad Challenge Brain Trust for exclusive opportunities including consultations, internship introductions, contacts, intellectual property guidance and additional funding as provided by our partners.

- 8 Students Named Semifinalists
  - Henry Bristol
    Shell Thickness Optimization and Method Analysis of MeO,@LSF Core-Shell Catalysts for Methane Partial Oxidation
  - Rachel Cohn
    Emerging Marine Diseases: Variation in Response to Climate Change Conditions Among Strains of Serratia marcescens
  - Alexander Hugh Li
    Enhancing Photoexcitation Energy Transfer in a Novel Graphene-Colloidal Quantum Dot Interface
Accolades and Awards, FBD 3-12-15 and BOT 3-13-15

- Rebecca Shen
  Whole Organ Visualization of T-helper Cells Directly Ex vivo
- Uday Uppal
  Creating a Hybrid Agent/Grid Model of Contact-Induced Lift
- Jenny Wang
  Fully Automated Computational Brain Image Segmentation for Cross-Modality Analysis of Neurodegenerative Diseases
- Katherine Wang
  Novel Design and Synthesis of Optimized Aripiprazole as an Antidepressant
- Shalier Xia
  A Novel Nano-Adsorption Approach for Curing Cardiovascular Diseases

- Thank you to Dr. Myra Halpin, Dr. Dan Teague, Dr. Amy Sheck, Dr. Jon Bennett, and Dr. Sarah Shoemaker for above and beyond mentorship and support to these students.
- For more information see https://student.societyforscience.org/intel-sts
- Intel STS, a program of the Society of Science and the Public, is one of the nation’s most prestigious pre-college science competitions. Each year, more than 1,700 high school seniors present original research project as part of the competition. Of these, only 300 are chosen as semi-finalists. Each of the 300 students named a semi-finalist in the Intel STS 2015 will receive a $1,000 award for his or her outstanding research. Additionally, to recognize excellence in teaching and school support of individual student research, every school will receive an award of $1,000 for each semi-finalist named in the Intel STS 2015. This award is used to further excellence in science, math and/or engineering education.
- Competition Process - News Highlights:
  - Forty high school seniors were named finalists in the Intel Science Talent Search 2015, a program of Society for Science & the Public.
  - Intel Science Talent Search tripled its top award money, replacing the single $100,000 top prize with three Medal of Distinction awards of $150,000 each.
  - Intel Science Talent Search recognizes the most promising young innovators in the United States who are creating the technologies and solutions that will positively impact people’s lives.
  - The Intel Science Talent Search encourages students to tackle challenging scientific questions and create technologies and solutions that will make people’s lives better. The 40 finalists receive an all-expenses-paid trip to Washington, D.C. from March 5-11, where they will compete for more than $1 million in awards provided by the Intel Foundation.
  - Starting this year, the Intel Science Talent Search will feature a new awards structure that includes triple the top award money and new award categories. In place of the competition’s previous $100,000 top prize, three Medal of Distinction awards of $150,000 each will be presented to students who show exceptional scientific potential in three areas: Basic Research, Global Good, and Innovation. There are also three second-place awards of $75,000, and three third-place awards of $35,000.
  - “Intel invests in engineering, math and science education to support the next generation of innovators, who will create the products and services to enrich our daily lives,” said Justin Rattner, president of the Intel Foundation. “This year’s finalists – who are engaged in leading-edge scientific research and the creation of new technology to address global challenges such as renewable energy, cybersecurity and infectious diseases – prove that with the right education and resources, young people can indeed change the world.”
  - Society for Science & the Public, a nonprofit membership organization dedicated to public engagement in scientific research and education, has owned and administered the Science Talent Search since its inception in 1942.
  - “The 40 finalists of the Intel Science Talent Search are some of the best and brightest young scientists in the nation,” said Maya Ajmera, president and CEO of Society for Science & the Public and publisher of Science News. “As an alumna of the Science Talent Search, I am especially proud to join with Intel in congratulating the finalists on their successes and look forward to learning more about them and their research, both at the finals in March and as their careers progress.”
• While in Washington, D.C., Intel Science Talent Search finalists will undergo a rigorous judging process, interact with leading scientists, display their research to the public at the National Geographic Society and meet with national leaders. Winners will be announced at a black-tie, invitation-only gala awards ceremony at the National Building Museum on March 10.

• In the past, young innovators chosen to participate in the Science Talent Search have gone on to receive more than 100 of the world’s most prestigious honors. For example, Science Talent Search alumni have won eight Nobel Prizes, two Fields Medals, five National Medals of Science, 12 MacArthur Foundation Fellowships and even an Academy Award for Best Actress.

• Since assuming title sponsorship of the Science Talent Search 17 years ago, Intel has increased the competition’s annual awards and scholarships from $205,000 to more than $1.6 million to acknowledge and encourage achievement in these important subjects. Over the past decade, Intel and the Intel Foundation have invested more than $1 billion, and Intel employees have donated close to 4 million hours, toward improving science, technology, engineering and mathematics education in more than 100 countries, regions and territories.

• To get the latest Intel Science Talent Search news, visit www.intel.com/newsroom/education, and join the conversation on Facebook and Twitter.

• To learn more about Society for Science & the Public, visit www.societyforscience.org, and follow the organization on Facebook and Twitter.

National Society of Black Engineers (NSBE) – January 16, 2015

• Update: Both teams will go on to compete in the national competition March 25-29, 2015.

• Two teams went to the NSBE Region 2 Fall Conference to compete in the High School Upper Division Try Math-a-lon. The NSBE Region 2 is a multi-state region ranging from PA to SC and it includes the following states: PA, DE, DC, MD, VA, WVA NC, and SC. The Try Math-a-lon is a 3 part competition in which students take an individual written test (PAT), they take a team written test (TEC) and then compete in a quiz bowl style math competition. Based on their performance on the PAT and TEC, the top 6 teams are selected to participate in the quiz bowl.

• Our two teams placed first and second in the region. Our first place team will go on to represent our region at the 41st National Competition in March of 2015. There is a possibility that our second place team may also go on to represent the region at nationals; we will know by the end of the month. The teams are as follows:

  • First Place Team:
    o Sope Eweje
    o Sayo Eweje
    o Margaret Bertoni
    o Liam Riley
    o Maury Jackson

  • Second Place Team:
    o John Fitz-Henley
    o Christian Joseph
    o WIl Guthrie
    o Christine McDow
    o Miles Williams

• Thank you to sponsors Dr. Ershela Sims and Ms. Lynn McGee, Instructors of Engineering,

• Founded in 1975, NSBE has more than 29,000 members and is one of the largest student-governed organizations in the country. It includes 394 College, Pre-College, and Technical Professional/Alumni chapters in the US and abroad. Its mission is “to increase the number of culturally responsible black engineers who excel academically, succeed professionally and positively impact the community.” NSBE has accomplished more for Black engineering students than any other organization in the world. Groups are active in
Africa, Europe, South America, Asia, Canada, Australia and the Caribbean. Projects are hands-on, team oriented, collaborative design projects that involve mathematics, physics, mechanical, software, computer, electrical and industrial engineering. The competition includes Fall Regional Conferences in 6 NSBE regions and a National Convention. The Try-Math-A-Lon is one of NSBE's signature academic excellence programs and competitions for high school students.

**North Carolina Regional Science Bowl – February 13, 2015**

- **NCSSM team takes Finalist top spot at the Regional Science Bowl; they will compete in the National Science Bowl in DC, April 30 – May 4, 2015.**
- **Team A: 1st Place in the Region**
  - Michael An
  - Alex Li
  - Daniel Ren
  - Rishi Sundaresan
  - Justin Yang
- The Finalist team is one of 24 teams nationwide who will complete in the 2014 National Science Bowl. The National Science Bowl brings together thousands of middle and high school students from across the country to compete in a fast-paced question-and-answer format where they solve technical problems and answer questions on a range of science disciplines including biology, chemistry, Earth and space science, physics and math.
- **Team B in the Regional Competition took 3rd Place:**
  - Xinyi Chen
  - Dylan King
  - Erik Salgado
  - Arnav Subramanya
  - Sarah Wu
- Thank you to Ms. Leslie Brinson, Instructor of Biology, for sponsoring and mentoring our students.
- This year marks the 25th year of the competition. "The National Science Bowl has grown into one of the most prestigious science academic competitions in the country and challenges students to excel in fields vital to America's future," U.S. Energy Secretary Ernest Moniz said. "I congratulate these students for advancing to the National Finals, where they will be among some of the brightest science and math students from across the country."
- The NSB brings together thousands of middle and high school students from across the country to compete in a fast-paced question-and-answer format where they solve technical problems and answer questions on a range of science disciplines including biology, chemistry, Earth and space science, physics and math.
- Winners from 118 middle school and high school regional tournaments from across the country will advance to represent their areas at the National Science Bowl, held from April 30 to May 4 in Washington, D.C.
- The top 16 high school teams and the top eight middle school teams in the National Finals will win $1,000 for their schools' science departments. Prizes for the top two high school teams for the 2015 NSB will be announced at a later date. Last year's first-place high school team received a nine-day, all-expenses-paid science trip to Alaska, where they learned more about glaciology, marine and avian biology, geology and plate tectonics. The second-place high school team won a five-day, fully guided adventure tour of several national parks, which included a whitewater-rafting trip.
- Approximately 240,000 students have participated in the National Science Bowl, one of the nation's largest science competitions, since it was established in 1991. More than 14,000 students compete in the NSB each year.
- The NSB Finals competition is managed by the U.S. Department of Energy's Office of Science. More information is available on the NSB website: [http://science.energy.gov/wdts/nsb/](http://science.energy.gov/wdts/nsb/)
• This is the fourth year in a row that a NCSSM team will compete at the national
competition. In 2010, NCSSM was the national winner out of 68 high schools.
• This high school competition began in 1991 as the National Science Bowl (NSB), a highly
competitive science education and academic event among teams of high school students
who compete in a fast-paced verbal forum to solve technical problems and answer
questions in all branches of science and math. Each team is composed of four students,
one alternate student, and a coach. Regional and national events encourage student
involvement in math and science activities of importance to the Department of Energy
and the nation.
• Regional Science Bowl championship teams receive an all-expenses paid trip to compete
at the national event. High school and middle school teams travel to Washington, D.C.
The national events are several days of science activities, sightseeing, and competitions.
Teams enjoy the entire Science Bowl experience with prizes, cutting-edge science
seminars and hands-on science activities.

North Carolina Regional Science Fair – February 2, 2015
• Congratulations to the Winners of the NCSSM Regional Science Fair. These students will
go on to compete at the North Carolina Science and Engineering Fair (NCSEF) in
March.
  • Biological Science A
    o 1st Place – Aaron Lucander. The Mechanistic Basis for Recombinase
      Upregulation in CD4+CD8+ Double-Positive Thymocytes
    o 2nd Place. Mary Overton. Examining Immune Content in Microenvironment of
      NF1 flox/flox vs NF1 flox/null tumors to Determine Cause of Increased Time
      to Tumor
    o 3rd Place – Rachel Cohn. Emerging marine diseases: Variation in response
to climate change conditions among strains of Serratia marcescens

  • Biological Science B
      Aripiprazole as an Antidepressant
    o 2nd Place. Tingzhu Teresa Meng. Roles of DNA precursor biosynthesis
      genes in maintaining replication fidelity in Escherichia coli
    o 3rd Place. Senita Portlock. Assessment of Acrithosiphon pismus responses to
      semiochemical cues from the aphidiphagous predator Chrysoperla rufilabris

  • Chemistry
    o 1st Place. Vibha Puri. The Effect of Formaldehyde Treatment on the
      Biosorption of Chlamydomonas reinhardtii for Lead and Copper Ions in
      Monoionic Solutions
    o 2nd Place. Caroline Liu. Isomer Chemistry: Design Ligands to Adjust
      Thermodynamics and Kinetics for Rare-Earth Metal Extraction and Rhodium
      Catalyzed Hydroformylation
    o 3rd Place. Jack Robertson, John Watters, Jonathon Kuo. The Construction
      and Optimization of Paper-based Enzymatic Glucose Fuel Cells

  • Earth & Environmental
    o 1st Place. Adithya Iyengar. Synthesis of Thinner Electrodeposited Polymer
      Solar Cell Interfaces in Organic Photovoltaics (OPVs)
    o 2nd Place. Shreyas Kolavennu. Using van der Waal Heterostructures to
      Create p-n Junctions in Thin Film Solar Cells

  • Physics
    o 1st Place. Uday Uppal. Creating a Hybrid Agent/Grid Model of Contact-
      Induced Force
    o 2nd Place. Richard Romano. Exploration of Glow Discharge and the effect of
      Electrode Geometry and Material

  • Technology/Engineering
    o 1st Place. Daniel Magley. Novel Application of Far Field Microwave Power
      Transfer for the Recharging of Batteries in Biomedical Devices
2nd Place. Aaron Sartin. *Engineering, Programming and Testing the Efficacy of a Novel Single Cell Array*

3rd Place. Grace Xiong. *Novel Solar Fuel Production of Hydrogen Gas Using Plasmonic-Assisted Heterogeneous Catalysis*

- Thank you to Dr. Amy Sheck, Dr. Myra Halpin, Dr. Sarah Shoemaker, Dr. Jon Bennett and Mr. Goo Gotwals, all NCSSM instructors who prepared and supported these students.
- For more information on the Regional Fair see [http://ncsefreg3b.sfiab.com/index.php](http://ncsefreg3b.sfiab.com/index.php)
- For information on the State Fair see [http://http://ncsciencefair.org](http://http://ncsciencefair.org)

**North Carolina Regional Science Fair Special Awards – February 2, 2015**

- Congratulations to the winners of the Special Awards given at the Region 3b NCSEF
- Evolution (Award from the National Evolutionary Synthesis Center)
- Neeraj Suresh. *Determination of Critical EBNA3A Amino Acid Residues Responsible for Initiating the Onset of Epstein-Barr virus-Associated Cancers*
- Water Prize (Cash Award and Bid for Stockholm Junior Water Prize – SJWP)
  - 1st Place. Rachel Cohn. *Emerging marine diseases: Variation in response to climate change conditions among strains of Serratia marcescens*
  - 2nd Place. Vibha Puri. *The Effect of Formaldehyde Treatment on the Biosorption of Chlamydomonas reinhardtii for Lead and Copper Ions in Monoionic Solutions*
- 3rd Place. Gwyneth Phelps and Bina Amin. *Observation and Analysis of Sediment Deposits, Stream Flow and Morphology, and Erosion Rates along an Urban Stream at the Prairie Ridge Ecostation*
- International Sustainable World Energy, Engineering, and the Environment Project Olympiad (I-SWEEEP); All-expense paid trip to compete at I-SWEEEP:
  - Grace Xiong. *Novel Solar Fuel Production of Hydrogen Gas Using Plasmonic-Assisted Heterogeneous Catalysis*
- International Science and Engineering Fair (ISEF); All-expense paid trip to compete at International Science and Engineering Fair:
  - Alexander Li. *Enhancing photoexcitation energy transfer in a novel graphene-colloidal quantum dot interface*
- Science Fairs provide an opportunity for students, 3rd through 12th grades, who are interested in science and technology to pursue their personal areas of interest and to display their research as a presentation in a public competitive forum. The NC Science and Engineering Fair works to create enthusiasm in science and technology while encouraging project-based inquiry. This fair gives students the chance to compete for college scholarships, awards, honors programs and other exciting prizes.
- The North Carolina Science, Mathematics, and Technology Education Center (NC SMT) focuses its support on competitions that have a local, regional, and national level competition.
- Many are very familiar with Dr. Sam Houston, Jr., President and CEO of NC SMT, and Dr. Tom Williams, President of Strategic Educational Alliances, Inc. Dr. Williams works closely with Dr. Houston in support of these events and is also a NCSSM Trustee.
- Among the competitions that the SMT Center supports are:
  - NC Science and Engineering Fair
  - NC International Science Challenge
  - NC State Math Contest
  - NC Science Olympiad
  - NC Student Academy of Science
  - NC Environthon
Ocean Sciences Bowl State Competition (Blue Heron Bowl) – February 7, 2015
UNCCH
- The NCSSM Ocean Sciences Bowl team won 1st place at the regional competition, the Blue Heron Bowl. They will now advance to the 2015 National Ocean Sciences Bowl competition, April 23-26 in Ocean Springs, MS.
- Team members are: Chase Yuan, Pranav Arrepb, Chandler Gay, Katherine Yang, Justin Zhang
- Thank you to sponsor and mentor Dr. Christine Muth, Instructor of Biology.
- For more information on the Regional Blue Heron Bowl see https://sites.google.com/site/blueheronbowl/
- For the National Ocean Sciences Bowl see http://nosb.org/
- The Blue Heron Bowl is a quiz bowl competition that focuses on marine science and is the qualifier for the National Ocean Science Bowl. For more information on the Blue Heron Bowl see https://sites.google.com/site/blueheronbowl/
- Each February regional competitions are held at 25 locations across the country. Teams of 4-5 students are tested on their knowledge of scientific and technical disciplines through quick answer buzzer questions and more complex, critical thinking team challenge questions (TCQs). The winning team from each of the 25 regional competitions is provided transportation and room and board accommodation to advance to the NOSB Finals Competition held in a different location each year in April. Typically, the teams that place 1st-3rd in the NOSB Finals Competition win experiential award trips to exciting locations.
- The NOSB is a timed competition (defined as the use of “lock-out” type buzzer systems and clocks) between two teams.
- This represents the 18th year of the Regional Marine Science Quiz Bowl. Winners of this year’s bowl will compete in the National Ocean Sciences Bowl in April 2015.

- The Science Communicators (a relatively new leadership position at NCSSM) published to the Duke Research blog.
- The Director of Research Communicators, Karl Leif Bates, worked with the Science Communicators to arrange for interview subjects, compose a set of interview questions, and edit the articles.
- Congratulations to:
  - Aravind Ezhilarasan - Multidimensional Student Maps Multidimensional Data
  - http://sites.duke.edu/dukeresearch/2015/01/01/multidimensional-student-maps-multidimensional-data/
  - Jaye Sudweeks - Passion, Modeling and Viruses are all Cool
  - http://sites.duke.edu/dukeresearch/2014/12/29/passion-modeling-and-viruses-are-all-cool/
  - Chichi Zhu - Is it Computer Science or Biology? A Bit of Both
  - http://sites.duke.edu/dukeresearch/2014/12/26/is-it-computer-science-or-biology-a-bit-of-both/
  - Grace Xiong - Engineer Wants to Get Antibiotics Right
  - http://sites.duke.edu/dukeresearch/2014/12/22/engineer-wants-to-get-antibiotics-right/
  - Teresa Meng - Disease Modeler Does Commentary Too
  - http://sites.duke.edu/dukeresearch/2014/12/19/disease-modeler-does-commentary-too/
- To see the articles go to the Duke Research Blog.
North Carolina Science Olympiad (NCSO) – February 7, 2015

- Congratulations to the NCSSSM Science Olympiad team competing at the National Ready Regional Competition.
- The NCSSM Team took 1st Place for the Varsity Competition and 2nd Place for the Junior Varsity Competition.
- Varsity Team Members: Arjun Bhatt, Peter Cheng, Alisa Cui, Ashwin Ghadiyaram, Austin Holmes, Dylan King, Katherine Li, Mitchell Li, Daniel Magley, Hunter Mayo, Tejal Patwardhan, Vinit Ranjan, Caleb Scott, Rebecca Shen, Deanyone Su, Arnav Subramanya, Rishi Sundaresan, Sarah Wu
  - 1st Place
    - Air Trajectory: Mitchell Li, Daniel Magley
    - Anatomy and Physiology: Arjun Bhatt, Ashwin Ghadiyaram
    - Astronomy: Deanyone Su, Rishi Sundaresan
    - Bridge: Mitchell Li, Deanyone Su
    - Cell Biology: Ashwin Ghadiyaram, Dylan King
    - Chem Lab: Vinit Ranjan, Sarah Wu
    - Compound Machines: Ashwin Ghadiyaram, Rishi Sundaresan
    - Duct Tape Challenge: Hunter Mayo, Caleb Scott
    - Forensics: Alisa Cui, Rebecca Shen
    - Green Generation: Katherine Li, Sarah Wu
    - Scrambler: Mitchell Li, Deanyone Su
    - Write It, Do It: Ashwin Ghadiyaram, Rebecca Shen
    - Bungee Drop: Austin Holmes, Arnav Subramanya
    - Amazing Mechatronics: Ashwin Ghadiyaram, Caleb Scott
  - 2nd Place
    - Geologic Mapping: Rebecca Shen, Arnav Subramanya
    - Wright Stuff: Daniel Magley, Arnav Subramanya
  - 3rd Place
    - Crave the Wave: Vinit Ranjan, Sarah Wu
    - Dynamic Planet: Arjun Bhatt, Tejal Patwardhan
    - Egg-O-Naut: Austin Holmes, Caleb Scott
    - Experimental Design: Dylan King, Katherine Li, Tejal Patwardhan
    - It Matters!: Vinit Ranjan, Sarah Wu
    - Mission Possible: Austin Holmes, Caleb Scott
    - It's About Time: Peter Cheng, Hunter Mayo
- NCSSM Team took 2nd Place in the Junior Varsity Competition
- Team Members: Vikram Aikat, Connie Chen, Joseph Chen, Philip Jacobson, Suk Won Jeong, Isabelle Katz, Amanda Li, Michael Li, Melissa Nie, Suhas Rao, Erik Salgado, Ashok Veeragandham, Alan Xie, Kelly Zhang, Jennifer Zou
  - 1st Place
    - Geologic Mapping: Joseph Chen, Suk Won Jeong
    - Green Generation: Philip Jacobson, Amanda Li
    - It Matters!: Suhas Rao, Kelly Zhang
    - Scrambler: Erik Salgado, Kelly Zhang
    - Technical Problem Solving: Amanda Li, Erik Salgado
  - 2nd Place
    - Chem Lab: Melissa Nie, Jennifer Zou
    - It's About Time: Vikram Aikat, Suhas Rao
    - Protein Modeling: Michael Li, Ashok Veeragandham, Jennifer Zou
  - 3rd Place
    - Compound Machines: Connie Chen, Vikram Aikat
    - Disease Detectives: Vikram Aikat, Isabelle Katz
    - Dynamic Planet: Suhas Rao, Kelly Zhang
    - Experimental Design: Isabelle Katz, Amanda Li, Erik Salgado
    - Wright Stuff: Isabelle Katz, Melissa Nie
• Thank you to sponsors and mentors Dr. Kim Monahan, Instructor of Biology and Dr. Darrell Spell, Instructor of Chemistry.

• North Carolina Science Olympiad (NCSO) is a nonprofit organization with the mission to attract and retain the pool of K-12 students entering science, technology, engineering, and mathematics (STEM) degrees and careers in North Carolina. Every year NCSO hosts tournaments on university, community college, and public school campuses across the state. These tournaments are rigorous academic interscholastic competitions that consist of a series of different hands-on, interactive, challenging and inquiry-based events that are well balanced between the various disciplines of biology, earth science, environmental science, chemistry, physics, engineering and technology.

• In 2014, more than 800 K-12 teams representing over 14,000 students and 70 counties in North Carolina participated in NCSO activities. NCSO is indebted to the thousands of volunteers that donate their time each year to making our activities a success.

• The challenging and self-motivating events of NCSO align with the North Carolina Standard Course of Study as well as the National Science Education Standards. The events are designed to enhance and strengthen both science content and process skills.

North Carolina Student Academy of Science (NCSAS) – February 12, 2015
American Association for the Advancement of Science (AAAS)
American Junior Academy of Science (AJAS)

• The NC Student Academy of Science sent a delegation of 12 students to represent North Carolina at the AJAS Annual Meeting and to present posters at the AAAS Annual Meeting in San Jose, CA.

• The NCSSM students who presented at the poster session were:

• Congratulations to Dr. Steve Warshaw who was elected President of the National Association of Academies of Science (NAAS).

• For more information on NCSAS see [http://www.ncsas.org/](http://www.ncsas.org/)

• For more information on the AAAS meeting see [http://meetings.aaas.org/](http://meetings.aaas.org/)

• From their website: Do you know about the Student Academy? We are not the Science Fair, Science Olympiad, or Junior Science and Humanities Symposium, all organizations that seek to foster student interest in science and mathematics. NCSAS does that, too, but is distinctive in holding competitions at the District and State levels for students who have completed research projects, requiring both a paper and an oral presentation, and providing an opportunity for them to receive personal feedback from research scientists in their field. In addition, we offer mini-grants to student researchers to encourage their efforts.

• Awards given at the State Competition include medals, science magazine subscriptions, books, cash, and bookstore gift cards. For high school students we also select two students to receive a limited number of expense-paid trips to the American Association for the Advancement of Science (AAAS)/American Junior Academy of Science meetings for the most outstanding papers, plus we give a $1,000 college scholarship each year. Finally, through our affiliation with the NC Academy of Science, the North Carolina's association for college level research scientists, we award honorary memberships in the American Association for the Advancement of Science each year.

• The North Carolina Student Academy of Science (NCSAS) is an organization for students in grades 6-12 in alliance with the North Carolina Academy of Science (NCAS). The objectives of NCSAS are 1) promoting the study of science, technology, and mathematics, 2) assisting students to pursue careers in science and technology, and 3) encouraging students to use their talents for the improvement of themselves, their schools, and their communities. Each year, NCSAS holds District and State meetings at which students have the opportunity to share their research in competition.

• The NCSAS is made up of nine districts state-wide with eight of them being geographical and the ninth being the North Carolina School of Science and Math which enrolls
students from all over the state. While many members of NCSAS are affiliated by a club membership, students may also register for individual membership. Registration forms must be filled out to participate in the meetings, and new members may join during registration. While most districts offer district competitions, some do not, and students not in districts that hold competitions are encouraged to send their papers to the Director(s) of the district in which they live for review and approval to compete at the State level. Contact information for District Directors is listed under District Meetings and Competitions.

Institute for Emerging Issues
2015 Emerging Issues High School Prize for Innovation – February 2015
- NCSSM was one of five Finalists.
- Winner selection was by a public voting period.
- Irena Huang and Pranav Kembru - Healthy Me
  - Anti-Obesity Application
  - Obesity is a growing epidemic in the United States, but it can be countered with healthy lifestyles. Our product is a mobile app that utilizes a reward system to encourage healthy living. The app provides motivation and encouragement to users making good choices, and allows consumers to associate their healthy decisions with immediate positive feedback. The app allows users to set their preferences, creating a customized experience. Its learning software allows for further adaptation to each individual’s needs, making the experience unique. Our team brings together people with different backgrounds and different strengths, including experience in app programming, business, and marketing. Most importantly, we are dedicated to healthy lifestyles and are passionate about creating a product that can improve the way users live.
  - To read more about the Finalists and Winner see: http://iei.ncsu.edu/emerging-issues-prize-innovation-high-school/2015-emerging-issues-prize-innovation-high-school-voting/
- From their website: Today’s high school students represent the most technologically connected generation ever. But they need to up their civic engagement game. Here’s how!
- The Contest: The 2015 Emerging Issues High School Prize for Innovation challenged teams of high school students to reflect on the past in order to help improve a community’s future. Teams investigated the historical roots of a local challenge a community had wrestled with in one or more of the following areas: its economy, education, the natural and built environments, health, or civic health. Teams then developed innovative solutions to the challenge, and engaged community members in tackling the issue. Perhaps your team wants to launch a media campaign, create a working group, start a nonprofit, perfect a new technology— or maybe you’ve got an entirely new approach or model in mind. Your team’s goal might have been to:
  - Connect students to local career options.
  - Make your community more walkable or bike-friendly.
  - Raise high school graduation rates.
  - Lower your community’s childhood obesity rate.
- In order to apply, teams were asked to:
- Identify a local challenge the community has historically wrestled with
- Study the local history of the issue and prepare an overview of that history
- Devise a potential solution to the challenge
- Create a plan to engage the community with the proposed solution

Institute for Emerging Issues - Spaces for Innovation Challenge – January/February 2015
- NCSSM Wins Spaces for Innovation Challenge!
- After each Finalist created a short (two- to three-minute) video describing the space for innovation and posted it to the Emerging Issues Commons website, IEI administered an
online public voting period January 19-30, 2015. The Finalists with the most votes was the winner.

- Many thanks to all students, parents, teachers, staff, NCSSM constituents and friends of NCSSM who voted.
- Basis for the competition from Emerging Issues:
  - Innovation thrives when people, organizations, and cultures come together and mix things up, often in the context of supportive policies and programs. Thriving centers of innovation take different forms. Most feature a critical density of ideas, people, and resources. Proximity tends to correlate positively to enhanced innovation capacity, but the interplay of physical location, virtual connections, and innovation is complex. IEI’s “North Carolina Spaces for Innovation” Challenge will showcase the best example among North Carolina’s most promising innovation spaces.
  - When you think about economic development, do you think NCSSM? We sure do! I wanted to let you know that NCSSM is among the 5 finalists in the Spaces for Innovation Challenge. We are competing with other NC organizations that fuel innovation for recognition at the 2015 Institute for Emerging Issues Forum which is being held on February 9th and 10th.
  - The competition highlights innovative spaces. The organizations selected as finalists were asked to develop short videos highlighting their innovative spaces. Our video highlights NCSSM as an innovative space since its inception as the first of its kind, a publicly funded residential STEM school. Along with our innovative residential program, the video highlights our impact across NC and, that at NCSSM creativity and innovation are not tied to a specific time or place. Through distance education, public school partnerships, research, open digital learning resources and community service, our school operates year-round and state-wide. This competition provides an opportunity to showcase our replicable model for innovative educational spaces and to demonstrate our leadership in STEM education in North Carolina and beyond.
  - Thanks go out to Chris Thomas, our Online Coordinator, for putting our school forward as a Space for Innovation. Our rock-star videographer Joyce Ventimiglia, with added content and inspiration from Melissa Thibault, Ross White, Chris Thomas, and others from our Distance Education and Extended Programs area who produced this video on VERY short notice. Assistant Director of Communications Sophie Williams provided editorial and voice talent.

Emerging Issues Prize for Innovation (College Level) NCSSM Alumni – February 2015

- $10,000 FAN FAVORITE WINNER. Winner was chosen by an online public vote.
- FRESHSPIRE INC., NORTH CAROLINA STATE UNIVERSITY, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, EAST CAROLINA UNIVERSITY
- A team of NCSSM alumnae also won $10,000 as the fan favorite winner in the undergraduate category of the Prize for Innovation competition, also part of the Institute for Emerging Issues. Freshspire, Inc., began as a social business project during the team’s senior year at NCSSM. Winning team members Mona Amin, Gabrielle Beaudry, Shraddha Rathod, Hannah Sloan and Jennifer Wu (all class of 2014) took top honors at the 2014 UNC Social Entrepreneurship Conference. The team, now comprised of five first-year college students scattered along the eastern coast of the United States, remains committed to promoting healthy and sustainable living through its FreshSpire application.
- From FreshSpire: There is a gap in effective food distribution in North Carolina. The state is ranked among the top in the nation for citizens experiencing food shortages and for childhood obesity. Yet, grocery stores are throwing out expired food on a daily basis, food that goes into landfills and produces 20 percent of all landfill methane gas emissions. To make matters worse, North Carolina is set to exhaust its remaining landfill space in the
next decade. FreshSpire aims to solve these problems by reducing food waste, food insecurity, and the amount of food deposited in landfills. FreshSpire is a system designed to increase communication between grocery stores and consumers. A mobile app notifies users when grocers offer daily markdowns on foods near expiration dates. This helps shoppers on limited budgets gain access to healthy foods while boosting the bottom line of grocery stores.

- Our team includes college students who came up with the idea as high school seniors and have proven themselves by earning honors such as: the UNC Undergraduate Social Entrepreneurship Challenge (1st place), Eastern North Carolina Innovation Competition, American Dream Seekers competition, and Global Entrepreneurship Week. Team mentors include Dr. Fred Eshelman and Maya Ajmera, founder of the Global Fund for Children. We are in touch with Food Lion executives, as well as Aldi and Publix. The team is passionate about social change and solving food distribution problems with FreshSpire.
- For more information, please visit emergingissues.org.


- Alex Li, Melissa Nie, Conor Stuart Roe, Sarah Wu, and Matthew Zheng qualified for the next round of the North American Computational Olympiad!
- Thank you to our sponsor and mentor, Ms. Tamar Avineri, Instructor of Mathematics.
- "This annual competition, held since 2007, has two rounds, which are held at universities and high schools throughout the USA and Canada. In [2014] 1,600 students took the open round, a three-hour test. Approximately the top 10% of the students from the open round were invited to the next round, a more difficult, five-hour test."
- "The North American Computational Linguistics Olympiad is a contest in which high-school students solve linguistic puzzles. In solving these puzzles, students learn about the diversity and consistency of language, while exercising logic skills. No prior knowledge of linguistics or second languages is necessary. Professionals in linguistics, computational linguistics and language technologies use dozens of languages to create engaging problems that represent cutting edge issues in their fields. The competition has attracted top students to study and work in those same fields. It is truly an opportunity for young people to experience a taste of natural-language processing in the 21st century."
- For more information on NACLO see http://nacloweb.org/#

Physics Olympiad – March 4, 2015

- Congratulations to Justin Yang and Sarah Wu who have qualified as National Semifinalists in the USA Physics Olympiad.
- They will compete at the next level in late March to be on the US Physics Team.
- Thank you to sponsor and mentor Mr. Sam Wheeler, Instructor of Physics.
- Physics Team Selection
  - "AAPT is responsible for recruiting, selecting and training teams each year to compete in the International Physics Olympiad Competition. This selection process begins in early January when high schools register their students to participate in the F=ma exam. Approximately 400 top scorers on this first test advance to the USA Physics Olympiad Exam.
  - The USA Physics Olympiad Exam is used as the basis for selection of the 20 members of the U.S. Physics Team. These students, from schools all over the United States, travel to the University of Maryland-College Park at the end of May for the annual U.S. Physics Team Training Camp. There they engage in ten days of intense studying, testing and problem solving.
  - At the end of that training camp, five students will be selected for the "Traveling Team." The Traveling Team will return for three additional days of intense laboratory work before they are ready for the International Event."
For more information on the Olympiad see http://www.aapt.org/physicssteam/2015/thisfileisnotforyou.cfm

High School Mathematical Contest in Modeling (HiMCM) – November 15-16, 2014

- In the High School Mathematical Contest in Modeling (HiMCM), there were 671 teams from across the US competing. Of the eight teams whose work was deemed Outstanding, two were from NCSSM.
- In addition, we had
  - Two Finalist teams (top 3%) and two Meritorious teams (top 25%). That is extraordinary work.
  - Outstanding:
    - Team 5086 Abhi Kulgod, Howard Li, Vedant Arora, Katherine Wang
    - Team 5089 Franklin Chen, Maggie Knotsman, Ebube Chuba, Shreyas Kolavennu
  - Finalist:
    - Team 5084 Adithya Iyengar; Jay Iyer, Vinay Kshisagar, Sandeep Silwal
    - Team 5088 Keshav Patel, Graham Pash, Dina Chen, Henry Bristol
  - Meritorious:
    - Team 5085 Cindy Chen, Aninda Manocha, Jaye Sudweeks, Sarah Daugherty
    - Team 5087 Michael An, Guy Blanc, Uday Uppal, Evan Liang
- Thank you to sponsor and mentor Dr. Dan Teague, Instructor of Mathematics.
- The High School Mathematical Contest in Modeling (HiMCM) was designed to provide students with the opportunity to work as team members in a contest that will stimulate and improve their problem solving and writing skills. This competition takes place with your teams-consisting of up to four students-working on a real-world problem for a consecutive thirty-six hour period.
- Teams are allowed to work on the contest problem at any available facility and then submit their Solution Papers to COMAP for centralized judging. We want to encourage you and your students to form a team(s) from your school.
- COMAP, the Consortium for Mathematics and Its Applications, is an award-winning non-profit organization whose mission is to improve mathematics education for students of all ages. Since 1980, COMAP has worked with teachers, students, and business people to create learning environments where mathematics is used to investigate and model real issues in our world.
- COMAP develops curriculum materials and teacher development programs that are multidisciplinary, academically rigorous, and fun for teachers to teach and students to learn. COMAP's educational philosophy is centered around mathematical modeling: using mathematical tools to explore real-world problems. Our products are developed in print, video, and multi-media formats.
- COMAP conducts research and analysis on the preparation of future mathematics educators and issues the results in newsletters and reports.
- COMAP provides technical assistance and professional development support to educators at all levels.


- Congrats to 26 students who, based on their AMC-12A score, are eligible to sit for the 2015 American Invitational Math Exam on March 19.
- Thank you to sponsor and mentor Mr. Philip Rash, Instructor of Mathematics.
- Students who perform exceptionally well on the AMC 10/12 are invited to continue participating in the series of examinations that culminate in participation in the International Mathematical Olympiad (IMO), the most prestigious and difficult secondary mathematics examination in the world. The AMC administers a series of increasingly selective contests to determine the six member team that will represent the United States of America at the IMO.
The American Invitational Mathematics Examination (AIME)
The American Invitational Mathematics Examination (AIME) is a 15 question, 3 hour examination in which each answer is an integer number from 0 to 999. The questions on the AIME are much more difficult and students are very unlikely to obtain the correct answer by guessing. As with the AMC 10 and AMC 12, all problems on the AIME can be solved by pre-calculus methods.

The AIME is intended to provide further challenge and recognition, beyond that provided by the AMC 10 or AMC 12, to the many high school students in North America who have exceptional mathematical ability. All students who took the AMC 12 and achieved a score of 100 or more out of a possible 150 or were in the top 5% are invited to take the AIME. All students who took the AMC 10 and had a score of 120 or more out of a possible 150, or were in the top 2.5% also qualify for the AIME. Two versions of the AIME are given on two different dates, about two weeks apart, in late March. Unlike the AMC 10/12, a student can only take the AIME once, and is encouraged to do so on the first date offered. There is no additional registration fee for the American Invitational Mathematics Examination, unless you choose to take the second sitting of the exam.

The top scoring U.S. citizens and students legally residing in the United States and Canada (with qualifying scores, based on a weighted average) are invited to take the USAMO.

United States of America Mathematical Olympiad (USAMO/USAJMO)
The United States of America Mathematical Olympiad (USAMO) and the United States of America Junior Mathematical Olympiad (USAJMO) are six question, two day, 9 hour essay-proof examinations. All problems can be solved with pre-calculus methods. Approximately 270 of the top scoring AMC 12 participants (based on a weighted average of AMC 12 and AIME score) are invited to take the USAMO. Approximately 230 of the top scoring AMC 10 participants (based on a weighted average of AMC 10 and AIME score) are invited to take the USAJMO. The USAMO and USAJMO are given on two consecutive days in late April.

U.S. citizens and students legally residing in the United States and Canada (with qualifying scores) are eligible to take the USAMO and USAJMO.

Hannah Clementine ’16 Publishes First Novel - March 9, 2015
She’s been writing since she was nine, and now Hannah Clementine ’16 has published her first novel.

Clementine published Nothing But Your Memories (BookLogix/2014) after winning the 2013 BookLogix Young Writers Contest. Her book explores the emergence of “The Alternation of Generation” society in which overpopulation forces bodies and time to be shared. The novel ponders the connection between memory and identity, the importance of race, and the significance of social constructs like the family unit.

Hannah talked about her book with WUNC’s Frank Stasio on WUNC’s “The State of Things.”

Distributive Education Clubs of America (DECA) – March 1, 2015
Career Development Conference

Katherine Li – 1st Place Team, Top 10, Entrepreneurship Innovation Plan Team; also 2nd Place, Top 10, Principles of Business Management

Jennifer Zou – 1st Place Team, Top 10, Entrepreneurship Innovation Plan Team; also 1st Place, Top 10, Principles of Business Management

Suk Won Jeong – Top 10, Business Finance

Erick Aguilar – 4th Place, Top 10, Hotel and Lodging Management

Guy Blanco – 2nd Place, Top 10, Marketing Management

Michael Yang – Top 10, Principles of Finance

Kelly Zhang – Top 10, Principles of Finance

Larry Zhang – Top 10, Principles of Finance

Sunwoo Yim – Top 10, Principles of Hospitality and Tourism
• Kimberly Zhang – Top 10, Principles of Marketing
• Caroline Liu – 3rd Place, Top 10, Principles of Marketing
• Jodie Chan – 1st Place, Top 10, Principles of Marketing
• Jiuyu Cheong – 1st Place, Team, Top 10, Sports and Entertainment Team Decision Making
• Natalie Sherman-Jollis – 1st Place, Team, Top 10, Sports and Entertainment Team Decision Making
• Thank you to sponsors and mentors Ms. Kathy Mueller, Administrative Assistant, Academic Programs and Ms. Leah Englebright, Controller, NCSSM Foundation.

With over a 60 year history, DECA has impacted the lives of more than ten million students, educators, school administrators and business professionals since it was founded in 1946. Their strong connection with our organization has resonated into a brand that people identify as a remarkable experience in the preparation of emerging leaders and entrepreneurs.

• DECA by the numbers:
  o 200,000 members
  o 5,000 high schools and colleges
  o 50 states
  o 9 countries
  o $500,000 in scholarships and awards
  o More than 60 partnering sponsors
  o $475,000 raised in 2010/2011 for the Muscular Dystrophy Association
  o 62 competitive event categories

• DECA’s programs and activities have constantly evolved as we use the latest technology and apply cutting edge educational research. Our core focus has remained consistent and is captured in our mission.

• DECA prepares emerging leaders and entrepreneurs for careers in marketing, finance, hospitality and management in high schools and colleges around the globe.

• Our guiding principles explain how we fulfill our mission by addressing what we do and the outcomes we expect. DECA enhances the preparation for college and careers by providing co-curricular programs that integrate into classroom instruction, applying learning in the context of business, connecting to business and the community and promoting competition. Our student members leverage their DECA experience to become academically prepared, community oriented, professionally responsible, experienced leaders.

• Our attributes and values describe DECA’s priorities and standards. We value competence, innovation, integrity and teamwork.

• DECA is organized into two unique student divisions each with programs designed to address the learning styles, interest and focus of its members. The High School Division includes 190,000 members in 3,500 schools. The Collegiate Division (formerly known as Delta Epsilon Chi) includes over 15,000 members in 200 colleges and universities.

• DECA Inc. is a 501(c)(3) not-for-profit student organization with members in all 50 United States, the District of Columbia, Canada, China, Germany, Guam, Hong Kong, Korea, Mexico and Puerto Rico. The United States Congress, the United States Department of Education and state and international departments of education authorize DECA’s programs.

**2015 National Achievement Scholarship Program**

• 15 Finalists (January 16, 2015)
• 16 Semifinalists (September 2014)
  o Of more than 160,000 Black Americans who entered the program this year, only 1,600 were named as Semifinalists.
  o In late January approximately 1,300 will qualify as Finalists.
  o 800 Winners of $2,500 scholarships will be selected from the Finalists according to specific criteria in late February.
The National Achievement Scholarship Program is an academic competition established in 1964 specifically to provide recognition for outstanding Black American high school students. Black students may enter both the National Achievement Program and the National Merit Program by taking the Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT®) and meeting other published requirements for participation. Both annual scholarship competitions are conducted by National Merit Scholarship Corporation (NMSC). The National Merit Program is open to all U.S. high school students. The two annual programs are conducted concurrently but operated and funded separately. A student's standing is determined independently in each program. Black American students can qualify for recognition and be honored as Scholars in both the National Merit Program and the National Achievement Program, but can receive only one monetary award from NMSC. This test is one of several included in The College Board's Readiness Programs. The College Board is a not-for-profit membership organization committed to excellence and equity in education.

2015 National Merit Scholarship Program

- **77 Finalists** – Highest number from any school in NC (February 2, 2015)
- **78 Semifinalists** (September 2014)
  - 16,000 Semifinalists selected from 50,000 high scorers.
  - In February approximately 15,000 will become Finalists.
  - 8,300 Merit Scholarship Winners of these $2,500 scholarships will be notified in March, April, May, and July.
  - 1,300 Special Scholarships provided by corporate sponsors will be awarded beginning in March.

The National Merit Scholarship Program is an academic competition for recognition and scholarships that began in 1955 and is open to all high school students. Students enter the National Merit Program by taking the Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT®) and by meeting published program entry/participation requirements. This annual scholarship competition is conducted by National Merit Scholarship Corporation (NMSC), which also conducts the National Achievement Scholarship Program designed specifically to honor outstanding Black American high school students across the nation. The PSAT/NMSQT® serves as an initial screen of more than 1.5 million entrants each year. Scholarships are awarded without consideration of family financial circumstances. This scholarship is one of the most sought-after and prestigious scholarship programs available today. This test is one of several included in The College Board's Readiness Programs. The College Board is a not-for-profit membership organization committed to excellence and equity in education.

Speech and Debate Tournaments – Winter – 2014-15

**Sponsored by the National Forensic League Speech & Debate Honor Society**

- **Northwest Guilford High Speech Debate Tournament** – December 13, 2014
  - Tejal Patwardhan – 1st Place Varsity Lincoln Douglas
  - Kailyn Price – 3rd Place Debate Varsity Congress
  - Arjun Bhatt – 4th Place Speech Impromptu
- **Northwest Guilford High Speech Debate** – December 13, 2014
  - Tejal Patwardhan – 1st Place Varsity Lincoln Douglas
  - Kailyn Price – 3rd Place Varsity Congress
  - Arjun Bhatt – 4th Place Impromptu Speaking
- **Blake National Debate Tournament Minneapolis** – December 19, 2014
  - Tejal Patwardhan – Double Octafinalist Varsity Lincoln Douglas
- **Myers Park High School Speech and Debate National Level** – January 9, 2015
  - Howard Li – Semifinalist Speech Original Oratory
  - Brendan Geideman – Octafinalist Novice Public Forum; Semifinalist Debate Varsity Lincoln Douglas
  - Tejal Patwardhan - Semifinalist Debate Varsity Lincoln Douglas
- Edwin Moore – Semifinalist Congress
- Michael Yang - Octafinalist Novice Public Forum
- Nidharshan Ramshkumar – Octafinalist Debate Varsity Lincoln Douglas
  - Cheryl Wang – Semifinalist Extemporaneous Speaking
- Durham Academy Speech and Debate Tournament – January 17, 2015
  - Nidharshan Ramshkumar – Semifinalist Varsity Lincoln Douglas Debate
  - Cheryl Wang – 4th Place Extemporaneous Speaking
  - Abhi Kulgod – 6th Place Varsity Public Forum
  - William Oles – 6th Place Varsity Public Forum
  - Tejal Patwardhan – 1st Place Varsity Lincoln Douglas; National Qualifier
  - Nidharshan Ramshkumar – 2nd Place Varsity Lincoln Douglas; National Qualifier
- Tarheel East District National Qualifier – February 21, 2015
  - Kailyn Price – 1st Alternate; 3rd Place Varsity Congress
- Thank you to Mr. Dave Thaden and Ms. Effie Padula, sponsors and mentors.
- Speech and Debate promotes academic performance and prepares students to excel in college. The North Carolina School of Science and Mathematics' Speech and Debate Team is looking forward to attending many more state and national tournaments.
- The League is the national honor society for secondary and middle school speech and debate. It works to spark transformation in the lives of students. The League honor society recognizes participation and progress in public speaking and debating activities as a means to meet Common Core State Standards in listening, speaking, reading, and writing. This nonprofit organization empowers educators with resources, fostering in students the ability to think critically, research persistently, articulate clearly, and lead ethically in a democratic society. Since 1925, more than 1.4 million alumni have participated in the League, with more than 120,000 active members representing nearly 3,000 schools. The League awards more than $200,000 in college scholarships at its annual National Tournament, the largest academic competition in the world. To attend nationals, students must place among the top competitors at one of 109 District Tournaments. Qualifiers compete in a variety of speech, debate, and performance events. The National Tournament moves to a different city each year. Final rounds are judged by blue ribbon panels including CEOs, former Cabinet members, stage and screen celebrities, sponsors, and acclaimed community members.
- A total of 109 district committees are elected to represent member schools in their respective regions, and are charged with running the District Tournament to determine qualifiers to the National Tournament.

**NCSSM Students Repair Trails at Duke Forest**
- The 2014 Duke Forest Miniterm group was featured in the Duke Forest newsletter.
- They worked on trail restoration and erosion control with teachers Gail Boyarsky and Emily Maxwell.

**Online Students**

**Meghana Ganapathiraju - Online Student Presents at Medical Informatics Meeting - January 16, 2015**
- NCSSM Online student Meghana Ganapathiraju was one of the youngest presenters at a recent American Medical Informatics Association meeting.
- Ganapathiraju, a student in the NCSSM Online program and senior at Green Hope High School in Cary, is an intern at the Duke Center for Health Informatics. She traveled to Washington, D.C., in November to present her work on the U.S. Department of Defense-funded project, “Novel Visualization of Health Related Data.”
The project is an interactive method of visualizing information, which allows a person to move a cursor over specific variables to illuminate how and why researchers are accessing the information within a database.

Ganapathiraju’s participation in the annual meeting is part of the organization’s new high school development program, Building New Paths to Biomedical Informatics Education.

Eligible students are participating in educational and research partnerships with university biomedical informatics programs in the U.S. This year, six student and teacher/mentor teams from North Carolina, California, Indiana, Maryland and Tennessee presented during the annual symposium that draws 2,500 people for meeting and features more than 600 papers, panels and posters.

Read more at the News and Observer.

Athletics

2014-15 Winter Awards

Women’s Basketball - 8th Place Northern Carolina 2A Conference
All-Conference
Emma Railey

Men’s Basketball - 7th Place Northern Carolina 2A Conference, State Playoff Berth
All-Conference
Justice Obasohon

Indoor Track and Field - Men’s Team Finished 13th and Women’s Team 28th In State Championship, Nick Walker 2nd Place in NCHSAA State Championships in Boys 3200 Meter Run

Competitive Cheerleading - 17th Place NCHSAA Championships in Medium Varsity Non-Tumble Division

Women’s Swimming - Northern Carolina 2A Conference Champions, Regional Runner-ups, 5th place 2A State Championships
All-Conference
200 Med Relay - Shreya Patel, Caroline Liu, Dina Chen, Stephanie Ding
200 Free - Claudia Aiello
200 IM - Caroline Liu
50 Free - Stephanie Ding
100 Fly - Dina Chen
100 Free - Stephanie Ding
200 Free Relay - Caroline Liu, Claudia Aiello, Shreya Patel, Stephanie Ding
100 Breaststroke - Caroline Liu

Men’s Swimming - Northern Carolina 2A Conference Champions, Regional Champions, 3rd place 2A State Championship
All-Conference
200 Free - Nolan Hopkins
200 IM - Richard Lang
50 Free - Blake Creighton
100 Fly - Nolan Hopkins
500 Free - Richard Lang
200 Free Relay - Blake Creighton, Xavier Boudreau, Braxton Baird, Richard Lang
400 Free Relay - Braxton Baird, Nolan Hopkins, Blake Creighton, Richard Lang
Accolades and Awards, FBD 3-12-15 and BOT 3-13-15

Wrestling - 4th Place Northern Carolina 2A Conference, 17th in the State, Finished 17th in team standings, Caleb Cox (126 lbs. made the finals, finished in 2nd place in the State), Dylan Millson (152 lbs. finished in 4th place in the State), Elijah Whitsett (220 lbs., made state championships)

All-Conference
Dylan Millson - 152

School

Burroughs Wellcome Fund Endowment – March 5, 2015
Dr. Roberts’ Email to the NCSSM Community:
• I shared with our community just before Thanksgiving that we were going to receive a $1,000,000 gift from the Burroughs Wellcome Fund (BWF). The official announcement of this gift, The Burroughs Wellcome Fund Endowment for Student Research, Mentorship, and Innovation, was held last night at the Governor’s Mansion. A picture of the “big check” is attached.
• I want to take this opportunity to again say thank you to the Burroughs Wellcome Fund and to their President John Burris, and to Carr Thompson for their support in helping make this possible! Many of you know Carr. She is is a member of our Board of Trustees and just recently retired from BWF. She has been a great friend to NCSSM over many years. Over the past two decades BWF has been one of NCSSM’s largest supporters and this gift would certainly not have been possible without Carr and Dr. Burris’ great support.
• This endowment comes as a recognition of the outstanding work each of you, and many others over the years at NCSSM, have done providing students from across North Carolina with truly unique and exceptional educational opportunities. In the next two years this endowment will begin to provide funding to help support student research and mentorship, as well as other innovative learning opportunities.
• I want to thank our Advancement Team for all of their efforts in making this gift happen.

TEDxNCSSM Event – Saturday, January 17, 2015
• TEDxNCSSM returned to campus when NCSSM hosted its fourth annual conference, “Flow,” on Saturday, January 17, 2015.
• TEDx is a conference dedicated to the sharing of ideas and knowledge. NCSSM is the first high school in North Carolina to sponsor a TEDx event. The organizing committee is comprised solely of NCSSM students and has played an instrumental role in inviting speakers and selecting audience members. The invitation-only event is capped at 100 attendees and included NCSSM students, other local students and teachers and NCSSM faculty and alumni, as well as professionals from the area, including university professors, entrepreneurs, scientists and politicians. The conference is designed to optimize interaction between speakers and audience members and to potentially spark new ideas from open discourse and facilitated discussion.
• The theme for this year’s conference was “Flow.” The conference presented four speakers, including a current NCSSM student, presenting on topics from biomimetics to feminism and photography.
• For more information on the speakers, visit the TEDxNCSSM website.
• Dr. Amy Sheck, Dean of Science, organizes the event.
Powwow Celebrates Native American Culture - February 5, 2015

- NCSSM hosted its annual Native American Powwow on Saturday, February 7, 2015, from noon to 5:00 p.m. The event was held at the Charles R. Eilber Physical Education Center on the school’s historic Durham campus. This family-friendly gathering featured Native American dancers, musicians and artists from all across the region. Admission to the Powwow was $5, with children five years old and younger admitted for free.

- Thank you to Admissions staff for doing an amazing job!

- This year is the 24th year for the Powwow, hosted by NCSSM’s Office of Admissions and the American Indian Club at NCSSM. The program began at 12 p.m. with a grand entry of dancers dressed in traditional and modern dance regalia. Host Drum was Southern Sun, representing the Lumbee tribe of North Carolina. Other drums from throughout the region were also in attendance. Explanations of the significance of the music and dance were interspersed throughout the program by Master of Ceremonies J.D. Moore of the Waccamaw Siouan tribe of Buckhead, NC. Also from the Waccamaw Siouan tribe was Head Female Dancer Shiana Thomas. Head Male Dancer was Kevin Chavis from the Lumbee tribe of North Carolina. Presentations throughout the afternoon included Native American flute music, hoop dancing and dancing demonstrations in traditional and contemporary American Indian dance styles. Audience members were invited to participate in a social round dance and a two-step dance. The powwow ended with a closing song at approximately 5:00 p.m.

- Before the start of the Powwow, the NCSSM Office of Admissions hosted its Dreammakers Open House from 7:30 a.m. to 12 p.m. Dreammakers is an event that gives Native American students in grades six through nine a chance to familiarize themselves with NCSSM academics and student life. Students and families also get the chance to meet with admissions counselors, participate in interactive learning presentations, tour the NCSSM campus and attend the Powwow. These students were recognized in a special Honor Dance during the Powwow.

- For more information and photographs of past Powwows, visit www.ncssm.edu/powwow.

Faculty

Dr. Steve Warshaw – February 12, 2015

- Elected President of the National Association of Academies of Science (NAAS)

UNC Board of Governors Excellence in Teaching Awards – January 22, 2015

- Dr. Noreen Naiman - Excellence in Teaching, $12,500 (Instructor of Biology and Chemistry)

- Mr. Bob Gotwals – NCSSM Outstanding Teacher, $2,500 (Instructor of Chemistry, including Computational)

- Mr. Scott Laird – NCSSM Outstanding Teacher, $2,500 (Instructor of Fine Arts)

- Ms. Cheryl Gann - Exception Contribution – Classroom Innovation, $1,125 (Instructor of Mathematics)

- Dr. Linda Schmalbeck – Exceptional Contribution – Outreach, $1,125 (Instructor of Biology)

- Dr. Kyle Hudson – Exceptional Contribution – Scholarship, $1,125 (Instructor of Humanities)

- Dr. Jianbei Deng – Exceptional Contribution – Service to Students, $1,125 (Instructor of Chemistry and Biology)
Jeff Milbourne '99 – Instructor of Physics – February 5, 2015
- Jeff Milbourne (c/o '99) is on leave from NCSSM while he serves as an Einstein Fellow in Washington, DC.
- Read his reflections about life on Capital Hill in the Albert Einstein Fellows Newsletter http://www.trianglecoalition.org/einstein-fellows/fellows-news/a-view-from-the-hill-reflections-on-four-months-on-congress

Dr. Zo Webster – Instructor of Physics – December 12, 2014
- Congratulations to Dr. Zo Webster for becoming Board Certified by the National Board for Professional Teaching Standards. The certification process involves extensive documentation of teaching practices.
- NCSSM now has 33 NBPTS teachers.
- For more information on National Board Certification see http://www.nbpts.org/

Alumni

Alexandra Deets '12 – February 13, 2015
- Deets '12 jumps to parachuting gold
- Alexandra Deets, a graduate from the Class of 2012, loves soccer and lacrosse. But the sport that has really captured her attention is skydiving.
- “Parachuting takes all my time,” she said by phone from West Point, N.Y., where she is a junior at the U.S. Military Academy.
- She joined the parachuting team her freshman year.
- She recently won a gold medal at the 2014 National Collegiate Parachuting Championships of the U.S. Parachute Association, held in Arizona.
- Deets won in the category of advanced four-way formation skydiving with her team, West Point Revival.
- So what’s it like to jump out of an airplane?
- “The first time I was a little nervous. I had butterflies going up in the plane,” she said. “But as soon as you’re in the door, it’s fun. There’s a breeze in your face and it’s a blast.”
- Read the full story from Star News Online.
- Deets was also named Best New Cadet of her training company at West Point in November 2013. Read the full story from The Business Insider.

Bryant Lin '12 – January 14, 2015
- Bryant Lin '12, publishes in Neurotoxicology
- Bryant Lin '12 is the second author on an article published in the journal, Neurotoxicology. Bryant conducted this research while he was a student at NCSSM.
- Neurotoxicology - Volume 40, January 2014, Pages 75–85
- Burst and principal components analyses of MEA data for 16 chemicals describe at least three effects classes
- Cina M. Mack, NHEERL, ORD, U.S. Environmental Protection Agency, Research Triangle Park, NC, United States
- Bryant J. Lin, N.C. School of Science and Mathematics, Durham, NC, United States
- James D. Turner, North Carolina State University, Raleigh, NC, United States
- Andrew F. M. Johnston, NHEERL, ORD, U.S. Environmental Protection Agency, Research Triangle Park, NC, United States
- Lyle D. Burgoo, NCEA, ORD, U.S. Environmental Protection Agency, Research Triangle Park, Durham, NC, United States
- Timothy J. Shafer NHEERL, ORD, U.S. Environmental Protection Agency, Research Triangle Park, NC, United States
• Received 19 November 2012, Accepted 28 November 2013, Available online 8 December 2013
• http://www.sciencedirect.com/science/article/pii/S0161813X13001800

Note: This is by no means meant to be a comprehensive list of NCSSM alumni and the extraordinary work they are doing. Be sure to check the Alumni Connections website for additional information.