TechSavvy
A program of AAUW

The University of North Carolina at Greensboro
Sullivan Science Building

Saturday, April 9, 2016
Welcome

Dear Tech Savvy Participants:

We are very thankful to American Association of University Women (AAUW) for making this opportunity available to the Greensboro Community. We are one of 22 sites selected nationally to host this STEM&M (Science, Technology, Engineering, Mathematics and Music) event for girls in grades 6 through 9 and their parents/guardians to further their awareness about STEM&M education and career paths. The day also includes a “Savvy Skills” (critical non-technical skills) session for students.

This event was made possible with the collaboration of AAUW Greensboro Branch, University of North Carolina Greensboro (UNCG), the Joint School of Nanoscience and Nanoengineering (JSNN), NC A & T State University, Guilford County Schools, Guilford Parent Academy, Guilford County-4H, Girls Scouts Carolinas Peaks to Piedmont, and Flying Playtpi FIRST Robotics Team 2655. In addition to funding from AAUW, we are extremely thankful to other sponsors: Mattel Inc., UNCG, Lincoln Financial Group, HondaJet, Evonik, Syngenta, Chick-fil-A, Lenovo, VF Corporation, Wells Fargo, and other donors recognized at the end of the booklet.

On behalf of the session leaders, speakers and volunteers, we welcome you to an exciting and informative day. We are helping these young girls to learn more about STEM&M education and careers, as well as important professional skills. They will be the future scientists, technology professionals, engineers, physicists, chemists and mathematicians!

We greatly appreciate and acknowledge the support given to Tech Savvy by Cheryl Wheaton, President, AAUW, Greensboro Branch.

Thank you for joining us this year. Feel free to talk to the program coordinators, the session leaders, presenters or volunteers if you have any questions during the event.

Get ready to learn, create and have fun!

Lakshmi Iyer, Ph.D.
Tech Savvy Co-Chair and IT is for Girls! Summer Program Director
The University of North Carolina at Greensboro
AAUW Greensboro Branch Board Member and STEM&M Director

Laura Tew, AAUW Greensboro Branch
Fundraising and Committee Co-Chair
## SCHEDULE

### Program for Adults

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<td>8.15 to 8.50 am</td>
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| 9.10 to 9.30 am | Welcome by Ms Ellen Garbarino, AAUW  
Keynote Speaker - Dr. Kathy Loyd | Sullivan 101           |
| 9.40 to 10.50 | 1. Financial Planning for college – Wells Fargo  
2. Q & A with College Foundation of North Carolina (CFNC) | Sullivan 101           |
| 11 to 11.45 am | Visit and experience STEM&M sessions                                    | See Page 8 for STEM&M Location |
| 11:45 to 1:00 pm | Lunch & Networking                                                      | UNCG Dining            |
| 1:10 to 2:20 pm | Panel (Psychologists and Parents): Cognitive and brain development in pre-teen and teen-agers.  
Raising daughters with STEM interest | Sullivan 101           |
| 2:30 to 2:40 pm | Post survey                                                             | Sullivan 101           |
| 2:40 to 3:00 pm | Welcome Remarks by Program Co-Chairs  
Keynote speaker - Dr. Robin Wilkins | Sullivan 101           |
| 3:00 to 3:15 pm | Raffle/Closing - Dr. Lakshmi Iyer                                       | Sullivan 101           |
# Program for Girls

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<td>STEM&amp;M- Choice 1</td>
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<td>11:00 to 11:35 am</td>
<td>Savvy Skills, Strong Minds and Strong Bodies - two parallel sessions</td>
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<td>11:35 am to 12.10 pm</td>
<td>Savvy Skills, Chicks, Chat, and Change: Manage Your Money with 10 Ingredients</td>
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<td>12:15 to 1:00 pm</td>
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<td>Post survey</td>
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MORNING PLENARY SESSION
Sponsored by Mattel, Inc

Welcome Remarks:
Ms. Ellen Garbarino
Board Member, AAUW, NC

Ellen grew up in NJ, and graduated from New Jersey City University, and Christ Hospital School of Nursing, with a BA in Ed, and an RN. After many years as a Public Health and Hospice nurse in upstate NY, her family moved to the Boston area. Ellen joined the staff at Historic New England, coordinating the adult education programs and overseeing the 500 volunteers at historic properties throughout New England. After ten years, Ellen accepted a position as Director (CEO and CFO) of a non-profit home health agency in Wakefield, MA. The agency provided home care for individuals in several communities north of Boston. In 2009 she retired as Director of North American Programs, and moved to Laurel Park, NC. where she joined the Hendersonville Branch of AAUW. She chaired the Tea and Fashion Show fundraiser for two years, and continues to work on the committee. She also participates in the Garden Study Group and the Art Study Group, and is excited about working with STEM on the local and state levels.

Keynote Speaker:

Dr. Kathy Loyd
Mattel Inc. Board Member; Member of the Board of Advisors and Executive-in-Residence at the Bryan School of Business, UNCG.

Dr. Kathy White Loyd serves on the Board of Directors for Mattel, Inc. and is an adjunct associate professor and executive-in-residence in the Bryan School of Business at the University of North Carolina at Greensboro. She is also on the Board of Advisors for the Bryan School of Business. Dr. Loyd founded Rural Sourcing, Inc. in 2003 to provide low-cost technology services to rural America. Prior to founding Rural Sourcing, Dr. Loyd was executive vice-president and Chief Information Officer for Cardinal Health, Inc. She also held executive information technology positions with Baxter Healthcare and Honeywell from 1981–1991. She has served as a Director of Certegy, Inc. since June 2001 and as a Director of Novell, Inc. since December 1, 2003. She served as a member of Compensation Committee of Fidelity National Information Services, Inc. Dr. White Loyd was a professor of information technology at the Bryan School of Business, University of North Carolina at Greensboro. She holds an undergraduate degree and M.B.A. from Arkansas State University and a doctorate degree from the University of Memphis.
**PROGRAM FOR ADULTS**  
**Sponsored by Wells Fargo**

Financial Planning for College:  
In this session attendees will learn the process of applying for financial assistance; from completing the FAFSA to evaluating awards letters from various colleges and universities. There will also be a discussion on how to fill a possible funding gap.

2. College Foundation of North Carolina  
Discover useful tools to help your child plan, apply, and pay for college with regional CFNC director Takeila Hall.

**Visit STEM&M Sessions from 11 am to 11.45 (see STEM&M Locations on Page 7)** with Parent Coordinator Guides: Dr. Barbara Carter, Dr. Johanna Mazlo, Dr. Cristina Moreira, Louise Skillman, Heather Terwillegar

Panel (Psychologists and Parents): Cognitive and brain development in pre-teen and teen-agers and Raising daughters with STEM interest.

**Psychologists** – Drs. Thanujeni Pathman and Janet Boseovski  
**Parent Panelists**: Stephanie Ghotbi-Taheri, Kelly Irvin, and Erika Shaw

Developmental psychologists from UNCG with expertise in social development, cognitive development, and parental involvement in education, will lead a discussion geared towards parents of girls in late childhood and adolescence. Panelists will give a short presentation followed by a question and answer period.
STEM&M Sessions and Location

There will be several parallel sessions for the girls. In addition to the opening and closing sessions, each student will attend 2 pre-assigned STEM&M Sessions and the Savvy Skills Session during the day.

**STEM&M Sessions and Session Coordinator(s)**

**CHEMISTRY - Gluep Anyone? - Sullivan 221**  
Dr. Nadja Cech

**INTERNET OF THINGS - Sullivan 349**  
Ms. Sahana Giridharan and Ms. Michelle Bao

**ROBOTICS – Sullivan 203; Demo on Second Floor Lobby**  
First Robotics Flying Playtpi

**ANIMATION WITH MIT’s SCRATCH - Eberhart 160**  
Ms. Aleah Brown and Mr. Rudolph Bedeley

**NANOSCIENCE AND NANOENGINEERING – Exploring properties at nanoscale - Sullivan 227**  
Ms. Komal Garde and Ms. Kimberly Riddick

**PHYSICS -Building three digit binary number display - Sullivan 218**  
Dr. Vijaya Sankaran

**SCIENCE OUT OF THIS WORLD - Sullivan 355**  
Jennifer Morgan

**STRAWBERRY DNA - Sullivan 233**  
Peggie Lewis Joyce

**NETWORK SCIENCE & THE EFFECTS OF MUSIC ON THE BRAIN – Sullivan 217**  
Dr. Robin Wilkins
This hands-on workshop will give students the opportunity to learn about a common class of chemical compounds called polymers. Students will work in groups of two in a chemistry lab and synthesize polymers from different starting materials. We will also use commercially manufactured polymers and perform tests to compare the properties of these materials.

What are Polymers?

Many of the materials we use every day are plastics. Plastics are made of large molecules (atoms bonded together) that are similar in structure to a chain. Just as chains have many links joined together, polymers contain repeating units called “monomers” that are joined together.

What will we do?

We will spend about 10-15 minutes giving students some background information about the chemistry of polymers. The students will then make a polymer from polyvinyl acetate (glue) and borax. They will be encouraged to write observations about the product obtained. A second polymer derived from polyvinyl alcohol will be made and we will encourage the students to compare the two polymers produced. Next, students will be given a superabsorbent polymer and asked to perform an experiment to determine the amount of water that can be absorbed by the polymer.

Finally, if time permits, the students will complete a crossword puzzle about the session.

Materials that will be used:

Glue, water, borax, polyvinyl alcohol, graduated cylinders and other containers

Learning Outcomes

❖ Students will be able to describe the characteristics of a polymer.
❖ Students will be able to make observations during an experimental procedure.
❖ Students will draw conclusions from an experimental data.
Imagine your makeup bag calling your phone when you’re out of eyeliner. Imagine your fridge ordering your milk when you’re out. Imagine your Trash Can tweeting “Pick me up!” when it’s too full. The Internet of Things is a world of sensors – a network of objects, from your fridge to your phone that can communicate with one another through sensors connected to the Internet.

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**IoT: SMART CREATURES**

- **Homing devices for animals** are nothing new, but the technologies now being used are smaller, more efficient, and now a part of the IoT.

- **Honeybees pollinate** 1/2 of the world’s food crops and are being plagued by a deadly phenomenon called Colony Collapse Disorder.

- **5,000 bees** were each fitted with a tiny RFID chip by Australian company CEDIA in order to track their movements and get answers about what is disrupting their populations.

- **The chips**, which are said to not have an impact on bee flight, are about a square centimeter. The next gen of these chips, for use on smaller insects will be 1mm square.

- **Each cow’s wireless sensor** is expected to generate about 200 MEGABYTES OF DATA PER YEAR.

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**In the session, the students will:**

- Learn the basics of a circuit through easy, fun, magnetic circuits called LittleBits!

- Be exposed to basic Internet of Things concepts through a type of LittleBit called the CloudBit

- Learn unique applications of IoT through the use of sites such as IFTTT (If Then, Than That)

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**AND THE BIGGEST PLAYERS IN INFORMATION TECHNOLOGY ARE STARTING TO TAKE NOTICE:**

*Google*

In Jan 2014, Google announced they were purchasing Nest, a maker of home automation sensor devices -- in this case, a smart thermostat and smoke detector, both of which can be controlled by an Apple iOS mobile app.

*Apple*

Apple is also pursuing opportunities in the connected marketing space with their iBeacon geofencing technology.

*If you want to read in more depth about market forecasts, visit [http://gartnerscope.com/Internet-of-Things-market-share/]*
ROBOTICS

Learn about what it takes to become roboticists
Design, build, and program a small robot or
Help us guide our big robot through an obstacle course so it can find its way home

Lego Mindstorms allows students to design, build and program complex autonomous robots even if the students have limited or no experience with robotics. Lego Mindstorms uses the familiar Lego bricks and also incorporates the Lego Technic bricks. These bricks allow students to build robots that have sensors and motors! More information about Lego Mindstorms can be found at: http://mindstorms.lego.com/en-us/default.aspx.

Work hands on with Students, Alumni and Mentors from FIRST Team 2655, The Flying Platypi Robotics Team
The Flying Platypi is a community based high school robotics team that participates in the FIRST Robotics Challenge (FRC). In our eight year as a team, we are open to all area high school students who have a passion for hands on learning of various STEM skills and the dedication it takes to be part of an award winning FRC team. We meet year round and engage in a number of outreach projects both locally and at the national level. We also have relationships with a number of local companies who supply us with funding and mentors. We encourage everyone to join robotics and get more information about "FIRST" at www.usfirst.org

As part of FIRST team, student members learn a variety of STEM skills such at CAD design, manufacturing, electrical wiring and programing, all needed to build larger robots. Students also learn presentation skills and leadership skills as well as how to effectively work and problem solve as part of group... Our sessions will be run by student team members and alumni with a passion to share what they have learned with younger students. 90+% of our team members are pursuing STEM based career.

This student led demonstration will give younger students the chance to build robots with LEGO bricks, participate in a team building robot brainstorming exercise and see what is involved in programming a larger robot. More information is available at: http://www.lego.com; www.USFIRST.org and www.team2655.org
What is Scratch?

Scratch is a simple programming environment, designed so that it’s easy to create animations and simple games. You’re not going to use it to calculate the 10 billionth digit of pi, or to write a very involved game like Halo, but it allows you to do some really interesting things and share them easily. You can browse the Scratch website and look under “Featured Projects” to find programs that other students have created.

Who Uses Scratch?

Scratch is designed especially for ages 8 to 16, but is used by people of all ages. Millions of people are creating Scratch projects in a wide variety of settings including homes, schools, museums, libraries and community centers.
The "Exploring at the Nanoscale" lesson explores how nanotechnology has impacted the world, and how engineers have to consider the ramifications of working at a very small scale. Students work in teams and explore the increased surface area exposed as items are made smaller and smaller. Students examine and measure large blocks of tofu or gelatin, determining the surface area. Then they slice the block into smaller and smaller pieces, exposing more surfaces, and impacting the surface area.

Students also explore the size of small, comparing various items to understand how large a nano is. They work as an engineering team to determine a new application of nanotechnology for a product or process of their choice. Teams present concepts and proposals to a group of potential research funders (the rest of the class) and each then vote for the proposal with the most potential. Student teams complete reflection documents.

**Lesson Focus:**
Lesson focuses on how nanotechnology has impacted our society and how engineers have learned to explore the world at the nanoscale. Students participate in hands-on activities to understand exactly how small the nanoscale is, explore how surface area changes at the nanoscale, and work in teams to develop futuristic applications of nanotechnology. Anticipated learning outcomes include the following:

- Nanostructures
- Scale
- Surface area
- Engineering design & problem solving
- Teamwork

**Materials that will be used:**
- Student Resource Sheet
- Student Worksheets
- Teacher Resource Documents
Build Your Own Binary Counter

Physics and Electronics
Assistant: Jade Murphy, UNCG

Description:
Students will have the general idea of how engineering is not just one discipline and it requires knowledge from various subjects.

This Session will introduce students to binary numbers and the basics of how an LED works. Students will get to build their own counter that will display three digit binary numbers in a predetermined pattern or by the prompt of a switch. Basics of circuits and circuit elements will be discussed and the building principles will be taught. Students will learn to read a circuit diagram and replicate a circuit in a paper to an actual bread board.

After an initial discussion of LED and their working, applications of the LED in day to day devices will be addressed. Students will be taught how to read a circuit and will be asked to build a circuit that replicates the diagram. The microprocessor will be preprogrammed for the students by the instructor. This can easily be extended to higher levels by interested students.

This project involves all aspects of STEM. Science – physics and how LED’s work, Engineering – packaging of LED’s, constructing a circuit, microcontroller etc. Technology – computer programming and how microcontrollers function based on user requirement, Mathematics – logic of programming.

Materials that will be used:
Arduino Microprocessor, power supply, bread board, LED, switch and cables.
We already know that girls are out of this world but...Megan Hussey, a 11th grader at Valley Academy in Lexington, NC, was given the opportunity to work with NASA. Come explore her findings and experiences and participate in a space related activity. Can you invent something worthy of NASA exploration?

**STRAWBERRY DNA**

What contains the biological instructions that make each species unique? DNA, of course!

It was Swiss biochemist Frederich Miescher who first observed DNA. Have you ever seen DNA? During this workshop, you will experiment with a strawberry extract, isolate, and observe it's DNA. You don't have to be a biochemist or geneticist. It's fun & easy and only takes some simple household materials.
Network Science & The Effect of Music on the Brain

Session Assistants:
Catheryn Shaw, Doctoral Student in Music Education and Brain Imaging
Karen Franks, Masters Student in Music Education and Brain Imaging

Integrating research and network science education to equip young women with the latest ideas, technological know-how and skills is currently a national priority. The pursuit of new ideas, including cross-cutting interdisciplinary research, requires envisioning new formulations of educational approaches that can provide state-of-the-art research opportunities and ensure significant continuing advances across science, technology, engineering, mathematics and education; integrating these with the arts to support the development of a diverse workforce with cutting-edge capabilities.

Harnessing a student’s natural interest in music, this session will focus on new network science techniques for studying the effects of music on the brain. Participating students receive an introduction to complex systems and training in network science tools and techniques by working hands-on with large data sets, in this case, brain imaging data sets. Participants will have the opportunity to use command line computer skills and view structural brain images.

Participants during this session will also learn the basic introductory steps and tools for how to process and view functional magnetic resonance (fMRI) data for network analysis. The aim of this session is to provide an introduction to a technically sound opportunity and broaden participation for young women. Broader aims include generating highly skilled young interdisciplinary minds who are informed and technically prepared to be able to pursue 21st century scientific and engineering-based academic or career endeavors.

Other aims include preparing young minds sufficiently confident in the skills and techniques necessary to pursue a variety of academic pursuits by converging network science, technology, engineering and mathematics with the arts into early onset interdisciplinary Research.
Savvy Skills Sessions for Girls

HEALTHY MINDS and HEALTHY BODIES

This workshop focuses on the importance of self-talk and teamwork. In the STRONG MIND session, participants will reflect on any negative images they project onto themselves and learn how to re-frame these thoughts to better influence their well-being. In the STRONG BODY session, girls will work together using their bodies to tackle certain challenges, emphasizing the importance of strength and teamwork.

MATERIALS TO BE USED:
❖ Paper and writing utensils to write down thoughts

FINANCIAL LITERACY Session

Chicks, Chat, and Change: Manage Your Money with 10 Ingredients

Ann Zuraw, CFP®, CFA®, CDFA™
President, Zuraw Financial Advisors

The aim of the session is to promote self-confidence in young women; to motivate young women to learn about money; and provide the necessary information to be able to successfully manage their money. In our daily lives, we constantly find ourselves face to face with money making decisions. However, many times we are not always prepared to make the correct choice when these situations arise. This presentation will help prepare teens and young adults for some of the everyday money challenges they may encounter. With the aid of ’10 ingredients’ for financial and personal success, we will discuss how their own money history and philosophy affects their money habits and decisions.

We hope to empower the young women with their own creative problem solving skills, knowledge and insight, so that they may learn to take control of their financial future. It’s never too early to start the conversation or begin taking responsibility for your finances, this will assist each of these young women in becoming confident, successful financial decision makers.
CLOSING CEREMONY
Sponsored by HondaJet

Remarks
Lakshmi Iyer and Laura Tew
Tech Savvy Co-Chairs

Keynote Speaker
Dr. Robin Wilkins

Dr. Robin W. Wilkins completed her PhD is in the Cognitive Neurosciences of Music and Music Education with a scientific cognate in fMRI, network science methods and functional brain connectivity. Her scientific presentations and keynote addresses include the International Conference on Network Science in Budapest, Hungary, the Danish Technical University in Copenhagen, Denmark, Harvard University, Boston University, Yale University, Berklee College of Music, Northwestern University, The New York Academy of Sciences, The University of North Carolina Chapel Hill, Georgia State University, The University of Edinburgh, Scotland, Berkeley University, California and The Krasnow Institute at George Mason University. Her research received the Outstanding Student Research Paper Award at the International Conference on Network Science in 2012 and her published dissertation research received a Nature Publishing Group international media announcement in August of 2014. Dr. Wilkins currently serves as the Director of Human Neuroimaging and Research Scientist for the Gateway MRI Center and the Joint School for Nanoscience and Nanoengineering at the University of North Carolina at Greensboro.

Summary & upcoming events
Dr. Lakshmi S. Iyer
Tech Savvy Program Co-Chair
Founder and Director of IT is for Girls/We Make IT Program

Raffle
MEET THE PRESENTERS
(Names are in alphabetical order by last name)

Lauren Bennett (Savvy Skills) is in her final semester in the master’s program for Sport and Exercise Psychology at UNCG. She received her Bachelor’s degree in Psychology from the University of Colorado at Boulder, where she managed a language development research lab for a year following graduation. Currently, she is an assistant in the Program for the Advancement of Girls and Women in Sport and Physical Activity (PAGWSPA).

Michelle Bao (Internet of Things) is currently a sophomore at The Early College at Guilford, but will be attending the North Carolina School of Science and Math next year. She has been interested in technology and computing ever since she was a young girl, and was awarded the National Center for Women & Information Technology State’s Aspirations Award last year. She was also a Young Adult Mentor for an all-girls Lego Robotics team at the Greensboro Science Center, helping the team go to states, and a Program Assistant for the past two years in the We Make IT/IT is for Girls Summer Camp. She has assisted with programs such as Web Design and Arduino/Little Bits. She looks forward to leading the Internet of Things session with Tech Savvy, which will allow girls to learn how to use programs of IFTTT and cloudBits and investigate their own unique ideas in implementing real-world solutions.

Rudolph Bedeley (Scratch Animation) is currently a third-year doctoral student in Information Systems in the ISSM department at UNCG. Prior to starting his Ph.D. program, Rudy earned his dual Master’s degrees in Information System and Civil Engineering from University of Delaware, Newark, DE. Rudy has wealth of experience in both industry and academia. His current research interests include Business Intelligence, Big Data & Analytics and Data Mining.

Dr. Janet Boseovski (Panelist) earned her B.S. degree from the University of Toronto, her M.A. from McGill University, and her Ph.D. from Queen’s University, Canada. She is an Associate Professor in the Department of Psychology at UNCG and is Co-Director of the D.U.C.K. Lab (Development and Understanding of Children’s Knowledge). Janet’s expertise is in developmental science, with particular interests in how 3- to 12-year-old children think and learn about the social and natural world. Her research has been supported by the National Institutes of Health and she is currently an editorial board member for the academic journals, Developmental Psychology and the Journal of Experimental Child Psychology.

Aleah Brown (Scratch Animation) is currently a 10th grader and an A Honor Roll Student at Northern Guilford High School. She is a member of the National Technical Honor Society. She is a Senior Girl Scout of the Girl Scouts Carolinas Peaks to Piedmont. She has attended TechSavvy Day for two years and was a team member of the IT is for Girls Summer Camp 2015. She also volunteered as a Student Educator for the mytechlife fall Saturday Camps at UNCG.

Dr. Nadia Cech (Chemistry): Dr. Cech earned a BS degree in chemistry from Southern Oregon University at the age of 19. This degree was funded in part a large crop of the plant medicine Echinacea, which she helped to cultivate on her family’s organic farm. In 2001, Dr. Cech was awarded her PhD in Analytical Chemistry from the University of New Mexico, where she worked under the direction of Dr. Chris Enke, co-inventor of the triple quadrupole mass spectrometer. Dr. Cech’s initial research efforts were focused on fundamental studies of electro spray ionization mass spectrometry, and her review on this topic is one of the most widely reference in this field. When she joined the faculty at the University of North Carolina Greensboro in 2001, Dr. Cech was excited to apply her theoretical studies of mass spectrometry to her long-dormant interest in medicinal plants. In particular, she tackled the question, “How can mass spectrometry be used to study the synergistic interactions responsible for the biological activity of botanical medicines?” This question has been the topic of 10 consecutive years of external funding from agencies including the National Institutes of Health (National Center for Complementary and Alternative Medicine). Dr. Cech’s work in this area was recently covered by C&E News, and she was awarded the
Jack L. Beal Award from the Journal of Natural Products for best paper by a young investigator in 2011. She currently supervises a dynamic group of 12 undergraduates, graduate students, and post-doctoral research associates. Dr. Cech has been recognized for both her teaching (with the 2008 University of North Carolina Greensboro College Teaching Award) and her research (with the 2011 University of North Carolina Greensboro Junior Research Excellence Award) and has published 34 peer-reviewed papers.

Dr. Donna M. Duffy (Healthy Minds) is a faculty member in the Department of Kinesiology at UNCG. In addition to her faculty responsibilities, Donna is the Program Director for the Program for the Advancement of Girls and Women in Sport and Physical Activity, which is housed in the Center for Women’s Health and Wellness at UNCG. Donna completed her Ph.D. in the Department of Kinesiology at UNCG in 2007. Prior to coming to UNCG, Donna completed her B.S. and M.Ed. at Boston University in Curriculum and Instruction.

Komal Garde (Engineering Curriculum Coordinator) earned her bachelors in Biotechnology and masters in Nanoengineering. Presently she is a PhD student in Nanoengineering. She volunteered for the K-12 STEM students at the Greensboro County School Career Fair and the North Carolina Science Festival in 2012. Komal was a volunteer coordinator and a presenter for the Nanotechnology session of Tech Savvy in 2014 and 2015.

Stephanie Ghotbi-Taheri (Treasurer) is an AAUW Greensboro Branch Board Member and is currently serving as Treasurer, and Fundraising Committee Co-Chair. She is passionate about Science, Technology, Engineering and Math (STEM). She has been a parent participant and volunteer for several years with the Triad Tech Savvy Program at the University of North Carolina at Greensboro (UNCG) in partnership with AAUW Greensboro. Stephanie was a facilitator for the Piedmont Science Fair for non-public schoolers at High Point University. She is an active volunteer in numerous capacities with the FIRST LEGO League (FLL) for ages 6-9 (Grades K-3), FIRST Tech Challenge (FTC) for ages 12-18 (Grades 7-12), and FIRST Robotics Competition for ages 14-18 (Grades 9-12) on the local, state, national, and international levels. Stephanie served on the PTSA Board at The STEM Early College at North Carolina Agricultural and Technical State University (NCA&T)-Guilford County Schools.

Sahana Giridharan (Internet of Things) is a current sophomore at The Early College at Guilford. Her interest was first sparked in the field of computing when she was a camper at the IT is for Girls Summer Camp in 2013. She is a two-time award recipient of the National Center for Women & Information Technology's State Aspirations Award. The award for Aspirations in Computing honors high school women who are active and interested in computing and technology, and encourages them to pursue their passions. For the past two years, she has been the Primary Program Leader, who, along with Dr. Lakshmi Iyer, has successfully received the AspireIT Grant to run the We Make IT/IT is for Girls Summer Camp. Last summer, she introduced the Internet of Things session to the We Make IT Camp at UNCG. This up-and-coming, new field combines the world of sensors and circuits to address social issues and to make the world more efficient!

Karen Grigg (Curriculum Coordinator) is the Science Liaison Librarian at UNCG. She has a Master of Science in Library Science from UNC-Chapel Hill. Though her bachelor’s degree is in English Literature, she has studied Wildlife Biology at the University of Montana and Mathematics at Montana State University. Her work with the Chemistry, Biology and Biochemistry, Physics and Astronomy, Computer Science, Psychology, and Nanosciences departments at UNCG focuses on delivering science information literacy concepts to undergraduate and graduate students, as well as providing research assistance and collection development services. She has volunteered in a Chapel Hill-Carrboro City Schools elementary school helping with STEM day activities, and has volunteered in local Technology Student Association (TSA) events and competitions. She is currently coordinating efforts to start a STEM Focus Group in the North Carolina Library Association.

Takeila Hall (Financial Planning) received a degree in Communication Studies from the University of North Carolina at Wilmington in 1998. She began working with College Foundation, Inc. in August 1999 as a Program
Information and Marketing Specialist. She has 16 years of experience providing information on career planning, academic planning, applying to college, low interest student and parent loans, scholarships/grants, and North Carolina’s National College Savings Plan. In 2000 she was promoted to CFNC Regional Representative for 336 area code for NC. “Our work today makes a better tomorrow by empowering people to achieve their academic goals. We provide financial assistance for higher education to benefit society and strengthen the economy of the State of North Carolina.”

MK Huffman (Savvy Skills) is a graduate student at UNCG. She is working on her Master’s in Kinesiology with a concentration in Sport and Exercise Psychology. Prior to coming to UNCG, MK got her Bachelor’s degree in math from Virginia Tech and worked as a data analyst for Ernst & Young in Washington, DC. Currently, she is an assistant in the Program for the Advancement of Girls and Women in Sport and Physical Activity (PAGWSPA).

Dr. Lakshmi Iyer (Program Chair) is the Director of Graduate Programs in the Information Systems and Supply Chain Management Department in the Bryan School of Business and Economics at UNCG. She founded the “Women in IT” initiatives in 2009 and has been serving as the Director of “IT is for Girls/We Make IT” program at UNCG. This outreach program aims to increase middle and high-school awareness about education and career path in technology areas. Dr. Iyer has successfully organized day-long and week-long camps for students with several hands-on computing/STEM&M activities. She has also established relationships with area organizations that enabled field trips so participants interact with STEM&M professionals and learn about computing careers and use of technology in various STEM&M areas. In addition, over the past 6 years, she has helped raise $115,000 in grants and gifts for offering outreach programs for middle and high-school girls. She has a doctorate in a technology related area and has over 19 years of teaching experience. She is an AAUW Member, STEM programs’ coordinator for AAUW Greensboro Branch, and served as a co-chair for the Association of Information Systems Task Force for Women in IS. She received the Shirley Hall award from AAUW Greensboro branch in 2011 and the National Center for Women in IT’s 2015 Educator Award for exemplary contribution to enrich STEM education for young women.

Peggie Lewis Joyce (Strawberry DNA) graduated from UNC Greensboro with her Bachelors in Biology and she received her masters from NC State University. Peggie works for NC State University with the 4-H Youth Development program in Guilford County. As the 4-H Agent, Peggie connects youth 5-18 years old with experiential learning opportunities so they can develop their leadership, citizenship and community service skills. "I love working with 4-H because 4-H helps youth discover what they want to be when they grow up!"

Mary Krautter (Volunteer Coordinator) is Head of Research, Outreach and Instruction at the University Libraries of the University of North Carolina at Greensboro. Her department provides library research support and collaborates with faculty in a wide variety of disciplines, and she has assisted researchers in many science disciplines. Mary has been a librarian since 1984, at UNCG since 2007 and previously at the University of Kentucky. She has a Master’s in English from Virginia Tech and a Master’s in Library Science from the University of North Carolina at Chapel Hill. She is an active volunteer with the Bookmarks Book Festival, with headquarters in Winston-Salem, NC, an organization devoted to promoting reading for all and literacy for children and young adults. She recently agreed to be one of the UNCG C/U representatives to AAUW.

Tarlon Khoubyari (Student Volunteer Coordinator and Social Media) is a freshman in Information Systems at the University of North Carolina at Greensboro. She was one of the state award recipients of the National Center of Women in Information and Technology Aspire IT award, an incredible honor. It inspired her to get more involved with technology and she had a wonderful time as a student educator for WeMakeIT summer camp as well as being a teacher’s assistant for Alice Camp for girls this past summer. She has a passion for teaching kids about the versatility in STEM and as Vice President of STARS (Students in Technology, Academia, Research and Service) computing club at UNCG she gets to explore that passion.
Jennifer Morgan (Astronomy) received her Bachelors in Business Education and a Masters in Education. She was a Business Instructional Coach at Yadkin Valley Regional Career Academy, a STEM high school in Davidson County, NC. Morgan is currently teaching business and technology courses in Chapel Hill, NC. She is excited to be a part of this program which provides the opportunity for middle and high school girls to be inspired and motivated in science related fields.

Ms. Kimberly Riddick (Nanoengineering): Prior to undertaking her doctoral studies at the Joint School of Nanoscience and Nanoengineering as a Nanoengineering student, Ms. Riddick coordinated NC FIRST’s FIRST Tech Challenge, a robotics competition platform designed to increase accessibility for minorities (female, ethnic, and socioeconomic). In this role she developed workshop curriculum for student participants and adult support. She also has industrial experience as a process engineer in pharmaceutical manufacturing.

Dr. Thanujeni Pathman (Panelist): received her undergraduate degree from McMaster University, and her M.A. and Ph.D. from the Psychology Department at Emory University. She completed postdoctoral training at the Center for Mind and Brain at the University of California, Davis and is now an Assistant Professor in the Psychology Department at UNCG. Her research interests are in cognitive development and developmental cognitive neuroscience. Dr. Pathman and her students study how the brain develops and how children learn and remember. She speaks with parent groups several times a year. She is very interested in initiatives that help females and underrepresented groups in the sciences.

Dr. Vijaya Sankaran (Physics) is an experienced Physics professor who enjoys educating students by engaging and motivating them. Dr. Sankaran also conducted several productive research that has been published in leading journals and conferences. Dr. Sankaran earned her Bachelor’s and Master’s degree from Kanpur University in India and then moved to the US to earn her Ph.D. in Physics from Vanderbilt University, Nashville, Tennessee. She currently teaches high-school Physics at the American Hebrew Academy in Greensboro, NC.

Mrs. Mary Fran Schickedantz (Marketing Coordinator) has been an involved member of AAUW Greensboro since the early 80's. She has served as Treasurer in both the local branch and the state AAUW as well as President of both. She is a retired Administrative Secretary for a local Swim & Tennis Club for 30 years keeping financial records and collecting membership dues. She has been a treasurer for the Greensboro Symphony Guild which continually held fundraisers. She is proficient with e-mail, Excel spreadsheets, QuickBooks and Quicken software as well. Mary Fran has middle and high school granddaughters and feels comfortable working with and encouraging girls at this age level. She has been a prime mover of technical awareness programs with the branch since 2008. Also, she has worked closely with Dr. Iyer from 2009 to the present to be a liaison between her excellent planning and the branch in its commitment to further STEM&M education/awareness in Greensboro.

Catheryn Shaw (NetScience): A native of Perry, Georgia, Catheryn is currently a PhD student at the University of North Carolina at Greensboro. She holds degrees from Columbus State University (B.M.E.) and Valdosta State University (M.M.Ed.). She has taught middle and high school band in Georgia, and her students were consistently selected for various honor bands around the state of Georgia. Catheryn’s middle school band program was also the recipient of several grants for an innovative percussion ensemble. She has served as clinician and adjudicator for numerous events, and her professional affiliations include the Georgia Music Educators Association, where she served as the District Chair Person for the southeast Georgia district, the National Band Association, and the National Association for Music Education.

Corey Sturdivant (Financial Aid) has been in the student loan industry for over 15 years working initially with a lender of the Federal Family Education Loan Program and subsequently with the nation’s second largest student loan guarantor. He has conducted numerous workshops throughout the Carolinas on the financial aid process, responsible borrowing, debt management and credit. Corey has been an Accredited Financial Counselor through the
Association for Financial Counseling and Planning Education for 4 years. He is currently Market Relationship Manager with Wells Fargo’s Education Financial Services Division responsible for North and South Carolina.

Mrs. Laura B. Tew (Fundraising and Publicity) has degrees in chemistry, marketing, and non-profit management. She held technical and management positions in chemical manufacturing for over thirty-five years. After retiring in Greensboro in 2009, Mrs. Tew pursued several interests including master gardening, tax counseling, and women’s advocacy. She is public policy chair of AAUW Greensboro Branch. She is committed to STEM&M education and careers. She believes that her personal experience and success are due in large part to influential mentors who encouraged her along the way. With Triad Tech Savvy, she is passing that tradition along to future generations.

Ms. Jane Terwillegar (Hospitality & Outreach Coordinator) As AAUW member since 1994, Jane Terwillegar has served as President, Northern Palm Beach County Branch AAUW, and President, Charitable Foundation for Northern Palm Beach County Branch AAUW. She retired as Director of Library Media Services in Palm Beach County Schools and also retired as Library Director of Lake Park Public Library, Lake Park, FL. While not professionally involved with science and technology, Mrs. Terwillegar is an experienced educator and administrator, experienced with planning workshops for students and adults, project planning, budgeting, project leadership, grant writing, grant evaluation, fund raising and teaching. Mrs. Terwillegar has served nationally as an elected member of Council, American Library Association (ALA) and on the Executive Board of the American Association of School Librarians (AASL). She has also served as President of the Florida Association of Library Media Educators (FAME). She Co-Chaired Marketing and Outreach, as well as Hospitality, for Tech-Savvy 2014 and 2015 and will continue in 2016.

Dr. Robin Wilkins (Brain Science) An active experimental network scientist and expert in music, Dr. Wilkins is a neuroscientist with a focus on structural and functional brain connectivity and the Cognitive Neurosciences of Music. She currently serves as Director of Human Neuroimaging and research scientist for the Joint School for Nanoscience and Nanengineering and Gateway MRI Center for the University of North Carolina-Greensboro. Her research centers on applying an understanding of music to inform how the brain connects as a complex system. A former student and member of the Laboratory for Complex Brain Networks (LCBN) at Wake Forest Baptist University Medical Center, she holds an interdisciplinary PhD in Cognitive Neurosciences of Music and Music Education with a scientific cognate in fMRI and network science methods, a professional certificate from MGH/Harvard/MIT Athinoula A. Martinos Center for Biomedical Multimodal Neuroimaging and in Mind, Brain and Education from Harvard University.

Zuraw Ann (Financial Aid) has 30 years of professional experience in financial planning, portfolio management, family businesses and stock analysis. She is a Certified Financial Planner, CFP®, Chartered Financial Analyst, CFA® and a Certified Divorce Financial Analyst, CDFA™. She has a strong focus on working with women to help develop a holistic plan to best protect their financial futures as they transition through different stages of their lives. It has been her life goal to learn as much as possible about managing money and in turn, educate others to make positive choices. Ann has an undergraduate degree from the University of North Carolina at Chapel Hill in Business and Speech Communication. Her M.B.A. is from the University of California at Berkeley, a degree she earned at night while managing investments for Bank of America Investment Management Company.

Our special thanks and appreciation to middle and high-school students from Guilford County who are participating in various activities.
YOUR TECH SAVVY COMMITTEE AND VOLUNTEERS

Planning Committee
Dr. Lakshmi S. Iyer, Committee Chair
Laura Tew, Fundraising and Committee Co-Chair
Mary Krautter, Volunteer Coordinator
Karen S. Grigg, Curriculum Coordinator, Technology & Savvy Skills
Sue Metz, Volunteer Coordinator
Mary Fran Schickedantz, Marketing Coordinator
Stephanie Ghotbi-Taheri, Treasurer
Jane Terwillegar, Hospitality
Rudolph Bedeley, Program Assistant, Technology & Savvy Skills
Komal Garde, Curriculum Coordinator, Engineering
Kimberly Riddick, Curriculum Coordinator, Engineering
Tarlon Khoubi-Yari, Social Media Representative

Tech Savvy Volunteers

Adamson, Michael
Adamson, Virginia
Bao, Michelle
Bennett, Lauren
Blocker, Jessica
Boseovski, Janet
Brown, Denise
Brown, Aleah
Caesar, Lindsay
Carter, Barbara
Diggs, Everlena
Dominique, Janie
Franks, Karen
Franks, Megan
Garde, Komal
Giridharan, Sahana
Haile, Libby
Hall, Takeila
Herbin, Beverly
Huffman, MK
Hurewitz Roddy
Irvin, Kelly
Jensen, Linda
Jeong, Sarah
Knox, Peggy
Komljenovic, Tory
Larson, Kate
Leininger, Lea
Lewis, Peggy
Loyd, Kathy
Lytle, Dianne
Mazlo Johanna
Mengert, Sue
Meyer, Charity
Moreira, Cristina
Morgan, Jennifer
Murphy, Jade
Okoh, Amarachi

Ostrowski, Elaine
Pathman, Thanujeni
Perez, Gabriela
Poteat, Kellar
Ryckman, Nancy
Sankaran, Vijaya
Scheabeland, Elizabeth
Schwabeland, Ann
Schumacher, Mark
Scott, Jewell
Shaw, Catherine
Shaw, Erika
Skillman, Louise
Stephenson, Bonita
Sturdivant, Corey
Terwillegar, Heather
Wenig, Mike
Wheaton, Cherrie

NOTE: We apologize for any unintentional omission/errors. We thank all those who have helped make this event possible.
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If you do not have a twitter account and would like to try it out, just go to www.twitter.com and open a new account using your unique email address. It takes just moments, and soon you will be a part of social media!

Women in Information Technology (WIIT) @ UNCG
wiit.uncg.edu
www.facebook.com/wemakeIT
Eberhart & Sullivan are connected (on 3rd floor)
AAUW is proud to present our 2016 National Tech Savvy Pilot Program sites, which will take the AAUW Buffalo (NY) Branch’s highly successful, one-day science, technology, engineering, and math conference for girls nationwide. The 22 sites will be hosted by AAUW branches or states that will each be receiving a grant from AAUW to implement Tech Savvy.

For a list of all 22 sites please visit: http://www.aauw.org/what-we-do/stem-education/tech-savvy/#schedule

A membership discount is offered by AAUW (national membership only) so that Tech Savvy Committee members, volunteers and adult attendees can join AAUW at the special rate of $21.00 for the first year of national membership (March 28, 2015 to June 30, 2016). To avail the discount, go to http://www.aauw.org/national/join/ and enter the code M15TECHSAVVY in the blank. Then click Apply and follow directions to apply online. To apply with a check or cash, see Mary Fran Schickedantz. You may also fill the form, print and send it with $21 check to AAUW Greensboro Branch; P.O. Box 10754, Greensboro, NC 27404. We will send the check to AAUW for you.
Exciting hands-on activities during the week-long summer camp at UNCG:

- **Apply** Computational thinking to solve social problems;
- **Create** animations and video games using MIT’s SCRATCH software; Microsoft Kodu; videos in Film Festival session;
- **Design** web pages;
- **Explore** computer and internet security; Project CS Activities;
- **Build** Internet of things using Raspberry Pi and Arduino; LEGO® Robots, Sphero
- **Develop** Leadership Skills;
- **Attend** field trips to local Businesses;
- **Meet** successful “Tech Divas” from UNCG & area firms to learn about career opportunities, plus interact with Aspirations in Computing Award Recipients and UNCG undergraduate & graduate students.

**wiit.uncg.edu**

**Who:** Rising Middle-school (rising 6th to 8th grade) Girls

**Where:** UNCG Bryan Building

**When:** Mon-Fri, July 25-29, 2016—Day Camp

**Cost:** $25 registration + $75 workshop = $100/student

(after 5 pm Monday May 16th, 2016 fee will be $150 ($25 + $125 camp fee.))

Registration required; limit of 60 students.
Register online & see the tentative schedule at wiit.uncg.edu.
TRIAD TECH SAVVY SPONSORS

Event Sponsors:

Break-out Session Sponsors:

Other Sponsors/Donors/Partners

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- Anonymous
- Mary Fran Schickedantz
- Christopher C and Laura B Tew

We appreciate all donations which can also be made online at:
HTTPS://ww2.aauw.org/program-gift/?treatment=TECHSAVVY (Select UNC Greensboro site)