

Innovate for Good



APPALACHIAN STATE UNIVERSITY®

WALKER COLLEGE OF BUSINESS



Aspire IT Summer Camp

Innovate.appstate.edu

July 23rd – 27th 2018

Camper Handbook

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Welcome

Dear Campers,

Welcome to this year's Aspire IT program which is part of the "[Innovate for Good](#)" STEM (Science, Technology, Engineer and Math) initiative in the Walker College of Business at Appalachian State University, Boone, NC. The camp is possible due to funding from the National Center for Women in Information Technology (NCWIT) and support of the American Association of University Women, Greensboro Branch. The camp has four programs: IT is for Girls, We Make IT, Girls Innovate IT, and Reinvent IT. Details of each session and other fun activities are outlined in this program booklet. On behalf of all the session leaders and volunteers, we would like to welcome you to an exciting opportunity to learn more about integration of STEM areas. The camp focuses on using Information Technology (IT) ranging from programming and mobile application development to robotics and Internet of Things. We hope to give you a rewarding experience where you can explore your interests and use your creativity to propose solution to relevant social problems. The goal of our program is to *increase awareness about IT education and careers among girls in grades 4 through 9*. High-school students who have participated in past IT summer camps are serving as Program Leaders and/or as near peer mentors. Through hands-on activities, you will:

- Create animations and video games using MIT's "SCRATCH" software (<http://scratch.mit.edu>)
- Develop mobile applications using MIT App Inventor 2
- Build Internet of things using Arduino
- Build and program LEGO EV3 robots using LEGO Mindstorms software
- Learn about the skills needed to be an effective leader
- Learn about being safe in using your computer and on the Internet (social media)

We are happy to provide you with a camp bag filled with useful materials and a complimentary flash drive in order take your projects home. We hope that you begin the program with an open mind ready to learn and experience new ways of creating and using technology. Feel free to talk to the session leaders and volunteers if you have any questions during the camp. In case of an emergency, you can contact us at the numbers given below:

Get ready to learn, create, and have fun!

Sincerely,

Lakshmi Iyer, Ph.D.

Professor and Director of Applied Data Analytics Graduate Program
Founder of Innovate for Good Initiative, Walker College of Business
Appalachian State University, Boone, NC
innovate@appstate.edu; Cell: 336-254-1190

Frances Keel

Program Director | Office of Conference and Camp Services | Appalachian State University
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Program Leaders: Aleah Brown, Advika Kumar, Ambica Ramachandra, and Christa Simaan

Biographies of Program Leaders

Aleah Brown: Girls Innovate IT and MIT Scratch Animation Session Leader

Hello All! I am Aleah Gennise Brown, Magna Cum Laude graduate from Northern Guilford High School. I was a member of the National Honor Society, National Beta Club, National Technical Honor Society, Film and Animation Club (President), Skills USA, and have received several awards and scholarships. I am as 2018 and 2017-NCWIT-Affiliate Award Winner and received the 2018 STEM Scholarship. I was also selected as a 2017 Girl of Merit Award from the Girls World Expo. I served as a Session Leader at the 2016 and 2017 IT is for Girls & We Make IT Summer Camps. I have been a Presenter/Session Leader at 2016, 2017 and 2018 Tech Savvy Day sponsored by AAUW. Aleah will be attending Savannah College of Art and Design where I will be majoring in Animation and minoring in Graphic Design.

Advika Kumar: Reinvent IT and MIT App Inventor 2 Session Leader

Hello everyone! My name is Advika Kumar, and I am a rising junior at The Early College at Guilford. This will be my fifth year being part of this camp. Over the last three years, I have volunteered and taken on a greater role by contributing to last year's grant proposal. This will be my first year as a Program Leader. Upon receiving a National Honorable Mention of the NCWIT Award for Aspirations in Computing last year and being a Local Affiliate Winner for the past two years, I've continued exploring

my passion and introducing more young women into the STEM fields. As a Young Adult Mentor at the Greensboro Science Center and active participant and coordinator of community outreach efforts through my FTC robotics team, I have learned about many exciting opportunities I hope to share with you all this week! In the App Inventor session, you will be introduced to several programming fundamentals and create your very own Android app designed to address a social issue. We are all looking forward to seeing the creations you present.

Ambica Ramchandra: We make IT and IoT and VR Program Leader

Hello Everyone! My name is Ambica Ramchandra, and I am a rising Senior at The STEM Early College at NC A&T University. I first attended the IT Camp 6 years ago as a participant, and I returned two years later to serve as a session assistant, which I has been one of the best decisions I have made. This camp opened doors of hope and unique success to me at a very young age, and the positive influence received here has encouraged me to pursue my interests in computer science in greater depth. This year we will have a brief session on public speaking/marketing. We will discuss how you can take your creative projects to the next level of impact by discussing different strategies of marketing and soft skills you may apply in your presentations. The beauty of this program is its interdisciplinary nature. The world we live in today is becoming ever so increasingly interdisciplinary, and we would like to show you how you can use this interdisciplinary nature in your studies and pursuits of interest. Please be open-minded and determined as your progress through the camp. I am eager to see all the wonderful ideas you coin this week. I hope you have a fun and memorable next five days of your summer.

Christa Simaan: IT is for Girls and Robotics Session Leader

Hello! This is Christa Simaan and I am currently 16 and a rising Junior at Northwest Guilford High School. I play golf and have a passion for Science and Mathematics. I have been involved in STEM related activities since fourth grade. My favorite STEM related activity is Robotics. I participated in First Lego League (FLL) for five years and this past year was my first year on First Technical Challenge (FTC). I have also mentored an FLL team at the Greensboro Science Center. I participated in Tech Savvy for many years while I was eligible, and two years ago I helped teach a session at Tech Savvy on the Internet of Things and Virtual Reality. I also had participated in this camp a few years ago and had an extreme passion for it. Last summer, I got the opportunity to take on a more active role in the camp, by being able to be a part of the grant for the Internet of Things and Virtual Reality session and was a Session Assistant. This past year, I also received an award for my inspiration in STEM from the National Center for Women & Informational Technology for Aspirations in Computing. This year, I will be the Program Leader for the Robotics and Sphero sessions of the camp and I am truly looking forward to it.

Opening Session

Welcome from Dr. Heather Norris, Dean, Walker College of Business



Dean Heather Norris is Professor of Finance and Dean of Walker College of Business. Her teaching and research interests involve corporate finance and investments, with a particular emphasis on corporate restructuring. She has been published in the *Journal of Portfolio Management*, *Financial Management*, *Managerial and Decision Economics* and the *Journal of Applied Business Research*. Her work on corporate restructuring has been cited in The Wall Street Journal, Fortune, Business Week and Dow Jones Online News. Norris is a member of Beta Gamma Sigma and Phi Kappa Phi. Prior to her time at Appalachian, Norris served on the faculty at Bowling Green State University, the Pennsylvania State University and West Virginia University.

Dr. Norris serves on the board of directors of Children's Hope Alliance, the parent organization of Grandfather Home for Children and Barium Springs Home for Children. She is a member of the board's finance committee, and previously chaired the organization's Foundation Board. Norris has also served on the board of directors for the Boone Area Chamber of Commerce. Norris and her husband, Rob (Appalachian '87), have a young daughter, Emma, who aspires to be a future Mountaineer.

Introduction of Keynote Speaker by Dr. Lakshmi S. Iyer



Lakshmi Iyer is Professor of Information Systems and the Director of the Applied Data Analytics Graduate Program in the Walker college of Business at Appalachian State University. Dr. Iyer obtained her Ph.D. in Management Science and Information Technology with a minor in Computer Science after completing her Master's in industrial engineering and her bachelor's degree in Chemical Engineering from Bangalore University, India.

For over ten years, Dr. Iyer has developed programs to enhance STEM educational opportunities for women and girls through the Women in Information Technology ([WIIT](#)) initiative at UNC Greensboro. She founded the *IT is for Girls* program in 2009 which expanded to a week-long summer camp since 2010 at UNCG. She received the Dr. Shirley Hall Award from the American Association of University Women (AAUW) Greensboro Branch in April 2011 and the 2015 Aspirations in Computing, Educator Awards from the National Center for Women in IT for her Community Engaged Teaching, "IT is for Girls". She served as the STEM education coordinator for the AAUW Greensboro Branch from 2012-17. The AAUW Greensboro Branch established the "Iyer" Award to recognize a member whose work has enabled the Branch to make a lasting difference in its mission of service on behalf of women and girls. Based on these experiences, she has started the "[Innovate for Good](#)" initiative in the Walker College of Business that aims to promote interdisciplinary and collaborative activities to arrive at innovative solutions to address social problems. The primary goal of the initiative is to increase diverse students' awareness about STEM (Science, Technology, Engineering and Math) education and career paths. In addition, there will be research projects that investigate pedagogical and practice themes that help advance under-represented groups in STEM education and workforce.

Keynote Speaker – Dr. Robin W. Wilkins



Dr. Robin W. Wilkins completed her PhD 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.

Dr. Wilkins' 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.

About NCWIT's Aspire IT Program/Awards

NCWIT AspireIT connects high school and college women with K-12 girls interested in computing. Using a near-peer model, program leaders teach younger girls fundamentals in programming and computational thinking in fun, creative environments that are supported by program partners from the NCWIT community. The relationship between the program leaders and their program partners fosters mentoring with technical professionals, increases young women's confidence in their computing abilities, and develops valuable leadership skills.

A little bit about the NCWIT Aspire IT Award:

The NCWIT Aspire IT Award recognizes young women who demonstrate...

- Outstanding leadership skills
- A passion for IT and STEM
- High achievement in IT and STEM
- Good academic record
- Show initiative to inspire and teach other women to pursue their passions and achieve high using STEM and IT

The Aspire IT Award recognizes young women from all around the country on national and state levels. Aspire IT Award winners are given access to...

- A network of other young women who are equally as passionate about STEM and IT as they are, including previous award winners
- Successful and competent women who work in STEM and IT related fields
- Opens up doors to jobs, internships, and colleges (looks great on an application!)
- Lots of cool swag and prizes.



For more information, please visit ncwit.org

Camp Supporters

(Speakers/Session Leaders/Program Assistants/Judges/Volunteers)

High School Near Peer Mentors

Lindsay Alexander-Eitzman
Azariah Banks
Zakiya Banks
Alicia Bao
Aleah Brown
Kimberly Brown
Rithika Jonnalagadda
Sanvi Korsapathy
Advika Kumar
Shreya Manikandan
Maggi Mugi
Hannah Napper
Serenity Phillips
Suhani Ramchandra
Ambica Ramchandra
Christa Simaan

Watauga County Schools

Scott Elliott
Ike Smith

Watauga High School Robotics

Cole Ardoin
Elizabeth Ardoin

Speakers

Sarah Alberti
Robin Wilkins

Swags and Plaques

Lyn Englert
Brian Keliher

Walker College of Business

Maureen Allen
Sabrina Cheeves
Haley Childers
Dinesh Dave
Wendy Deng
Rachel Drye
Samantha Fuentes
Regina Hartley
Lakshmi Iyer
Kim Kirby
Donna Lindabury
Dawn Medlin
Heather Norris
Amy Odom
Will Sears
Chris Taylor
Sandra Vannoy

ASU IT Services

Danny Moorhead
Tung Ong
Julie Taubman

ASU Sponsored Programs/Special Finds

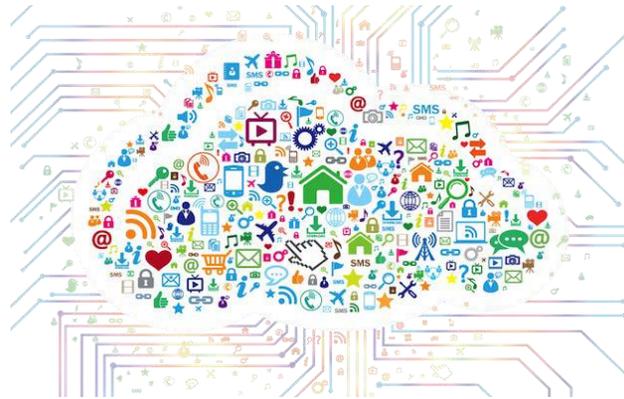
Kerri McCaffrey
Amy Roberts

ASU Camps and Conferences

Frances Keel

Note: We apologize for any typos or omission of names.

Internet of Things

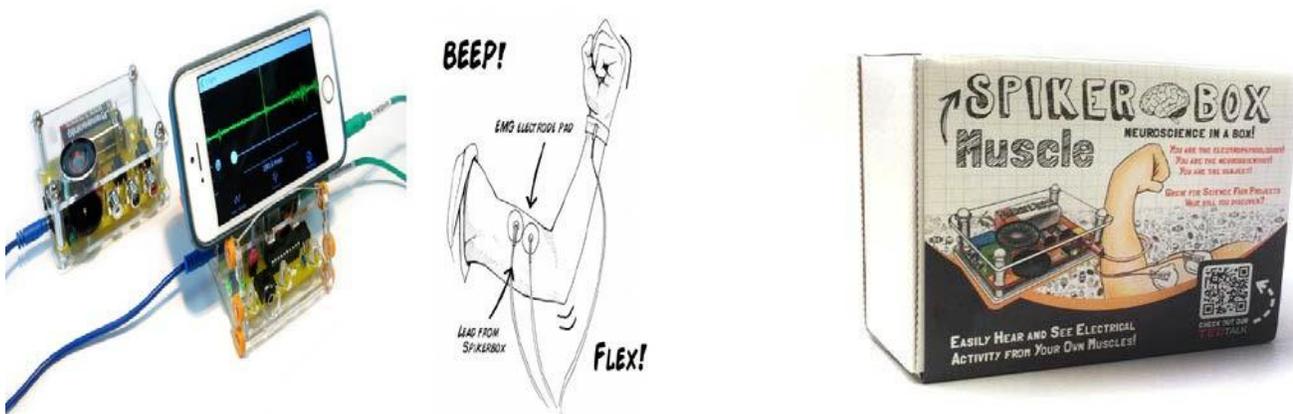


Session Leader: Ambica Ramchandra

Session Assistants: Sanvi Korsapathy and Lindsay Alexander

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.

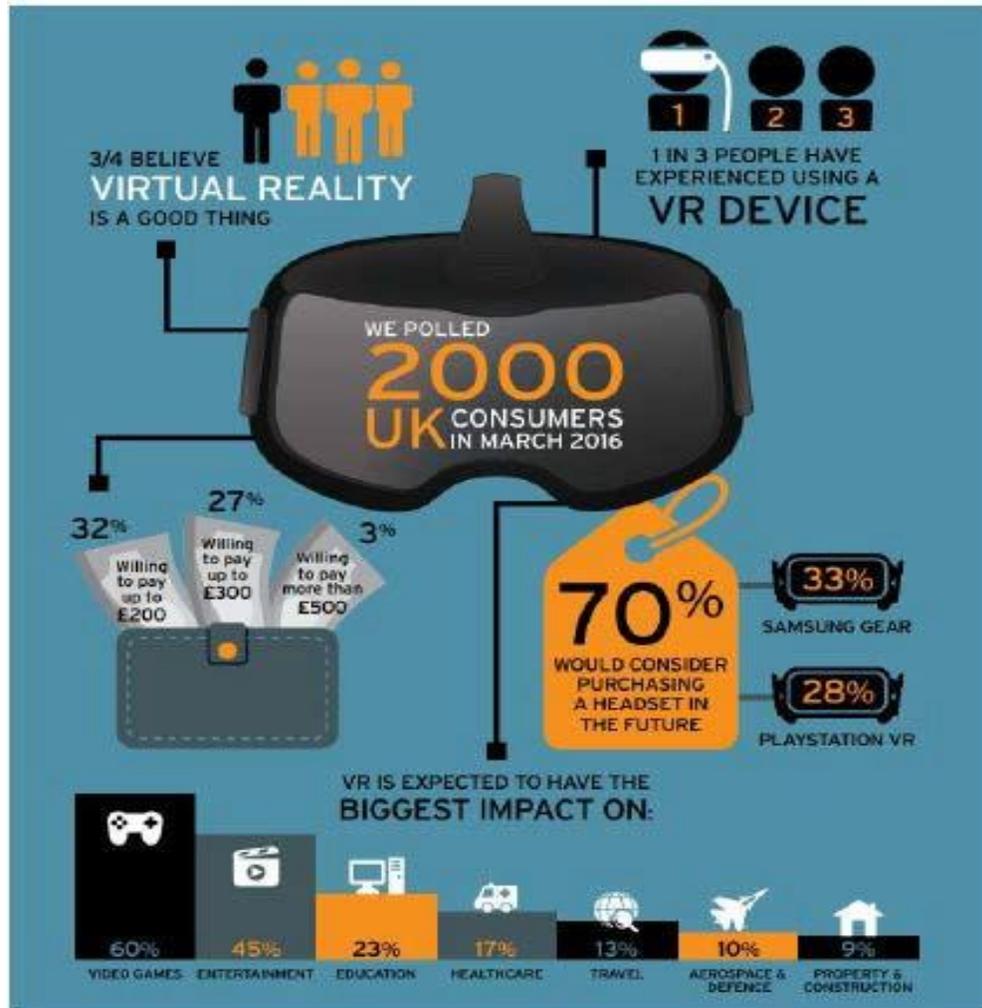
This year, we are introducing two new components: Backyard Brains, a unique kit that combines neuroscience and coding, and a marketing/public speaking booster class!



The girls will learn:

- The basics of a circuit through easy, fun circuits called LittleBits!
- Be exposed to basic Internet of Things (IoT) concepts and applications in healthcare
- How to visualize electrical activity from the muscles through Backyard Brains kits.

IoT as a Virtual Reality Enabler



Using Google Cardboard and Styros VR headsets, the girls will:

- learn the basics behind what a virtual reality is.
- discuss applications of VR in healthcare, entertainment, and education.
- apply VR to their financial projects in some aspect.

Reinvent IT: MIT App Inventor 2

Session Leader: Advika Kumar

Session Assistants: Mansi Gupta and Maggi Mugi

Reinvent IT will be exploring the use of MIT App Inventor 2 for Android app development. MIT App Inventor 2 was a collaboration between Google and the Massachusetts Institute of Technology (MIT) to make programming more accessible to people of all ages. Through this online program, participants will be able to build fully functional apps for smartphones and tablets.

The blocks-based tool, as well as its intuitive, visual programming environment, is a powerful tool that can serve as a gateway to understanding more traditional programming techniques, such as event handlers and conditionals, that they will be able to apply to more advanced programming languages in the future. They will also document their experiences to create a digital diary of their trials and successes to share with their fellow campers and judges.

If participants choose this program to create a project with, they have the potential to achieve a positive social impact in the local communities and beyond, just as many users have done before them. For example, a group of young women from Moldova built a crowd-sourcing app to help people access safe drinking water, thus combatting the high rate of water-borne Hepatitis A. A group of middle-school girls in Texas created an app to help blind students navigate the halls in their school. A girl from Chennai, India created an app to coordinate relief efforts following major floods. We're excited to see what you do next!





Session Leader: Christa Simaan

Session Assistants: Rithika Jonalagadda and Suhani Ramachandran

Lego Mindstorms allows students to design, build, and program complex autonomous robots, even if the students have limited or no experience with robotics. Lego Mindstorm uses the familiar Lego bricks and also incorporates the Lego Technic bricks. These bricks allow students to build robots that have sensors and motors!

Lego Mindstorms includes six unique components with these sensors:

- 1. The EV3 computer:** This is what powers the Lego Mindstorm sets, using a point and click programming interface that tells the EV3 computer what to do with the input from the sensors.
- 2. The touch sensor:** This allows the robot to feel and react to its environment.
- 3. The sound sensor:** This allows the robot to hear and react to sound.
- 4. The light sensor:** This enables the robot to detect not only light, but different colors.
- 5. The ultrasonic sensor:** This motor gives the robot the ability to see, measure distances, and react to various movement.
- 6. The servo motors:** These motors are used to move the robot around with precision. These motors can be designed in such a way that they equip the robot with partial angles or a continuous tread like that found on a tank.

All of these pieces make up the physical aspect of Lego Mindstorm. This enables the students to become incredibly creative with their designs and see those designs come to life. Beyond just the physical Lego pieces that make up Mindstorm, it also comes with software to program the EV3 brain of the robot. This software uses a visual interface that allows the builder to drag and drop the various sensors of the robot to trigger events without having to write any code!

The benefits the student will gain from this workshop falls into every category of STEM (Science, Technology, Engineering, and Mathematics.)

Science: investigating energy, forces and speed, power relationships and the effect of friction

Technology: programming and controlling input and output devices, using wireless communication, researching and sharing information via networks

Engineering: developing solutions, selecting, building, testing and evaluating

Mathematics: measuring, using coordinate systems, conversion and applied mathematics



Sphero is a robot ball with several features that can be controlled through mobile apps, including computer programs that the students build. The main features are:

1. Rolling - The Sphero can roll at a given speed and heading for a given amount of time.
2. Colors - The Sphero can light up in any color.
3. Bluetooth - Sphero connects to devices such as iPads, iPhones, and Android phones and tablets through wireless Bluetooth connections. This allows the Sphero to be controlled by several apps.

There are 4 education related apps available to control Sphero. Each of these is available for free from app stores such as iTunes and Google Play.

1. Sphero - This is the main Sphero app used for firmware updates and general driving.
2. Draw and Drive - Allows you to draw a shape with multiple colors and have Sphero roll in that shape and color.
3. MacroLab - Creates simple programs (“macros”) that are a series of instructions for the Sphero through an easy-to-use graphical user interface.
4. OrbBasic - Creates more complex programs using a text-based programming language.



Watauga High School Robotics Demo

FIRST FTC, VEX and Mindstorms Robotics Demo – WHS Robotics Club is a high school robotics team that participates in the FIRST Tech Challenge (FTC) and VEX robotics competitions. 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 robotics club. We meet during the school year and engage in a number of local outreach projects. We also have relationships with a number of local companies who supply us with funding and mentors. Through our club, and membership in related clubs, student members learn a variety of STEM skills such as CAD design, 3D printing, manufacturing, electrical wiring and programming, 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 a group. Our sessions will be run by student team members with a passion to share what they have learned with younger students. The student-led demonstrations will give younger students some hands-on robotics experiences and see what is involved in programming a larger robot.

More information is available at :

<https://wataugarobotics.wixsite.com/home/our-team>

<https://www.lego.com/en-us/mindstorms/about-ev3>

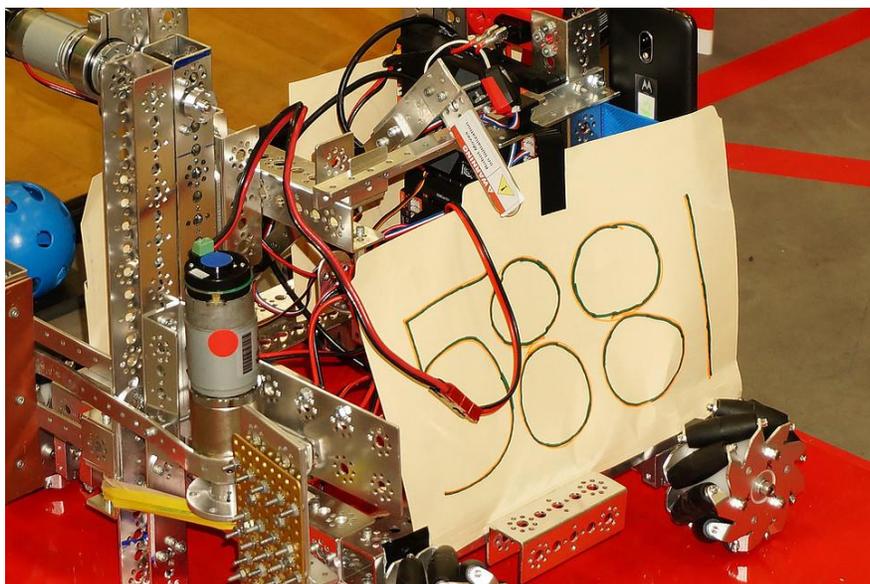
<https://www.firstinspires.org/robotics/ftc>

<https://www.vexrobotics.com/>



Presenters: Cole Ardoin and others

Adult Volunteer/Coach: Elizabeth Ardoin



MIT's Scratch Session

scratch.mit.edu



Session Leader: Aleah Brown

Session Assistants: Kimberly Brown and Serenity Phillips

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.



How do I use Scratch?

To create animations/games in Scratch, you need to download and install scratch.

- Open a web browser and go to <http://scratch.mit.edu>. Click the "Download Scratch" button, which takes you to a registration page. If you don't mind sharing your information, you can fill out the form because it is information that the people who made Scratch would like to see. However, for now, it works fine just to leave everything blank and hit the button at the bottom ("Continue to Scratch download").
- Select the **Windows** installer, and it will do the install (click through a few "continue" and "next" buttons). At the end of this, you should have the option to start Scratch!

Once you are in the Scratch software, you can Click "File ... Open" and select "Examples" to see lots of sample Scratch apps.

What do I need to know about using Scratch?

You must understand the main Scratch concepts. Open up the Trampoline example under Animations in order to follow along with this next section (*File ... Open > Examples > Animations > Trampoline*).

1. **Stage**: The "**stage**" is the background in the program environment. In the Trampoline example, the stage is the beach background that is shown.
2. **Sprites**: Any object in a scratch animation/game is referred to as a "sprite" - this can be characters, inanimate objects, backgrounds, ... A Sprite has three things associated with it:
 1. How it acts ("**Scripts**"),
 2. How it looks ("**Costumes**"), and
 3. How it sounds ("**Sounds**").

Question: What are the sprites in this example?

- There are two Sprites at the bottom right - *Allison* and the *Trampoline*.

3. The “**Scripts**” tab should be selected. You can switch between the sprites to show how the actions (scripts) change for each sprite.
4. Go over to “**Costumes**” for Allison. Click on the different costumes to show how it changes the main window.
5. Next look at “**Sounds**” - note that the ones that are in the sample include “Meow” - is that used in the app? Doesn’t look like it, but someone just left it there unnecessarily! You can record different sounds and add it into a program.
6. Now go back to the **Scripts** and look at the parts.
 - The first one just makes Allison jump up and down (glides up, glides down, and repeats forever).
 - Others are reactions to actions. So, what happens if you repeat turning 30 degrees 12 times (answer: you rotate 360 degrees, or one full turn - that’s how you make a sprite “flip”).

Now that you understand the basics in a Scratch program, you can run the app by clicking the green flag. Pressing the arrow keys allow for *Allison* to do different actions, depending on what was defined in the scripts.

There is a lot more that can be added to scripts. Go through different operations on the left that can be added to scripts. You can actually click on them in the left panel to execute them immediately, or you can drag them into scripts in the scripts panel. The different operations include: **Motion, Looks, Sound, Pen, Control Sensing, Operators, and Variables**

How do I save a Scratch program?

You can save a Scratch project by clicking on “File ... Save As”. Always save your work on a USB drive. There is a “Share” button you can click on to share your creation with others on the Scratch web site!

Exploring Tools for Visual Representation

Session Leader: David Schouweiler

In this activity, participants will explore various tech tools for visually representing information in this choice-driven session. Participants will be given a brief demo of some technology tools for Representation, Discovery, and Communication, followed by time to explore and tinker with the tech tool of their choice. The objective of this activity is to provide youths with the opportunity to explore technology tools related to Representation, Discovery, and Communication.

<http://bit.ly/TechTableSummer18>

Outline

(5 mins) See: Youths will first be prompted to think about something cool that they saw online that someone created using technology. What did it look like? Why did they find it interesting? Youths will first share what they thought of with a partner, then share with the whole group.

(10 mins) Know: Youth will be given an overview of three different uses of technology:

- Tech tools for Representation: Transforming the physical map into a digital format.
- Tech tools for Discovery: Using technology to learn more about the things being mapped.
- Tech tools for Communication: Using technology to communicate what is discovered with a wide audience.

They will then be given a brief introduction to each of the tech tools in the table below. Specifically, they will learn what each tool does and view an example or two.

(1 hour) Do: Youths will be given time to explore the technologies in the table below using the links provided. They may choose what tools to explore and whether to work with a partner or by themselves.

(10-15 minutes) Share: Youths will reunite to share what they explored, what they learned, what they created, and what ideas they have for using these technologies in relationship to the theme of the week.



David Schouweiler moved to North Carolina to be a high school Science teacher in 2011 after graduating from the University of Michigan. He taught Science for five years in both traditional and magnet school settings and loved every minute of it. His specialties were instructional technology and making cool explosions. He left the classroom in 2016 to pursue his PhD in Teacher Education at the University of North Carolina at Greensboro, where he currently works as a research assistant. He also teaches teachers at Lenoir Rhyne University as an adjunct instructor. He lives in the Hickory area with his wife and two lovable dogs.

Build a Computer

Session to be held in Anne Belk Hall, room 135

Session Leader: Mr. Danny Moorhead

In this session students will take a Dell desktop computer apart, put it back together, then install the Windows 10 operating system. Step by step instructions will be provided and any questions will be answered as they arise throughout the session.

Mr. Danny Moorhead is an IT Analyst/Supervisor at Appalachian State University with about 22 years of experience. He is specialized in computer systems and hardware, is an A+ Certified, Apple Certified Mac Technician and Apple Authorized Service Provider Administrator.

Technical assistants:

Michael Morgan
Sam Devine
Trevor Sawyer
Forrest Roberts
Ethan Hahn



Computer and Internet Security

Session Leader: Ms. Julie Taubman and Mr. Chris Taylor

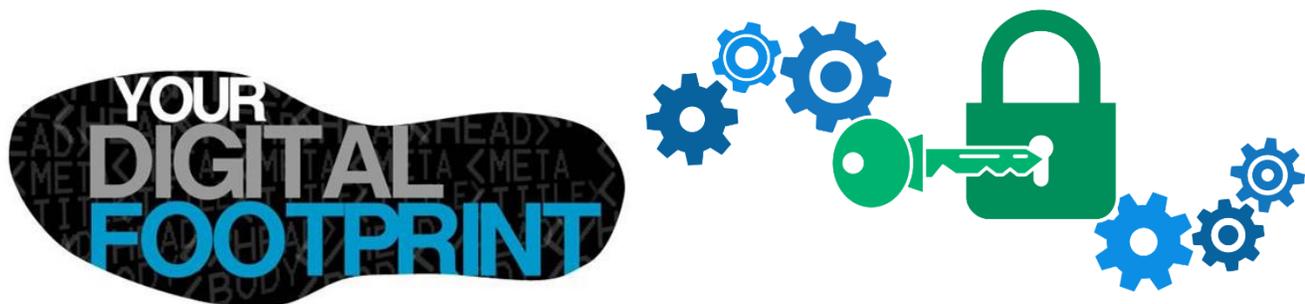
Session Assistants: Near Peer Mentors

This session explores issues that arise in computer and internet security. The first topic will be on encryption, discussing where it came from, and how widely it is used today. Students will experience first-hand how to utilize basic encryption standards to keep their information safe. This will be accomplished through discussions with interactive demos and ending with a hands-on simulation showcasing the ability to send covert (encrypted) messages between the participants.

The second topic will discuss the importance of social media and how to stay safe while using it. This will be accomplished by providing students with examples of good secure apps, showcasing ways to secure mobile devices and ending with a participant-led case study on the effects of cyberbullying.

Christopher W. Taylor is a Senior Lecturer of Computer Information Systems in the Walker College of Business at Appalachian State University. He obtained his Master of Business Administration and Bachelor of Science in Business Administration from Appalachian State University. He holds the Certified Ethical Hacker Certification. He is also a consultant for the Security Operations Center for Quadrant Information Security, a firm with a focus on Information Security. His works have been published in the Southeast Decision Sciences Institute Conference Proceedings, The Journal of Information Technology Management as well as the Appalachian State University archives.

Julie Taubman is an IT Project Manager in Information Technology Services at Appalachian State University. She earned a Bachelor of Arts in political science from Pennsylvania State University and a Master of Science in computer science from Montana State University. Following her graduate studies, she worked as a computer scientist at the National Institutes of Health and a patent writer before joining Appalachian in 2008 as the University's first research compliance officer.

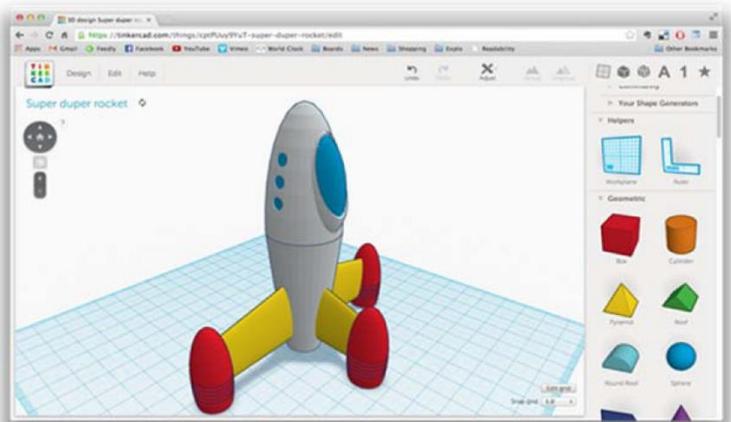


3D-Design

Session Leaders: Ms. Sarah Burns and Mr. Jesse Cummings

Session Assistants: Near Peer Mentors

Tinkercad is a simple, online 3D design and 3D printing app for everyone. Start by creating an account on Tinkercad prior to the day of the 3D Design camp. Keep account info on hand such as Username and Password for the day of the camp.



Tinkercad is used by designers, hobbyists, teachers, and kids, to make toys, prototypes, home décor, Minecraft models, jewelry, the list is truly endless! Learn to use a free online 3D modeling program to create virtually anything! In this mini-course, we will learn how to model a name badge and then you will get the chance to see it printed! (Actual printing of all objects may take a few weeks due to the number of students involved in this workshop.)

Sarah- My name is Sarah Burns, and I am a third year Industrial Design student at Appalachian State concentrating in product design. My main passion within design is for 3D modeling and I have a special interest in automated modes of fabrication such as 3D printing and different types of 2D and 3D vector cutting. While I haven't decided exactly what I want to focus on within the field of Industrial Design, I am especially interested in prop and set design for film and theatre.

Jesse- My name is Jesse Warner (@JesseJoKnows), and I am majoring in Industrial Design with concentration in Product and a minor in Apparel Design & Merchandising. My aspirations are to have a career in designing performance footwear for sports brands like Nike or Adidas while also having my own small business for freelance work outside of shoe design such as furniture, homegoods/interiors, apparel/fashion, etc. 3D design is a crucial part in conceptualizing and creating the forms and function in any physical sense, whether it be for sketch models, prototypes, or final models. Thus, 3D design is heavily important to my career and self-interests/hobbies.

Girls LEAD/Life Skills

Session Leaders: Ms. Maureen Allen

Session Assistants: Ms. Crispin Hydock and Near Peer Mentors



What is your game plan for success? How can your interaction with others give you power and confidence to chase your dreams and tackle adversity? Maureen Nowak Allen will share basic communication skills which are needed to succeed in today's IT world. Maureen will discuss stumbling blocks that can impede your plans, confidence builders, special challenges, gestures, technology world taboos, team work and savvy solutions for excellence. This session will be an interactive session and each girl will walk away with confidence and skills for success.



Maureen Nowak Allen is a Lecturer of Computer Information Systems in the Walker College of Business at Appalachian State University. Maureen is President and owner of Technical Consulting in Elon NC. She is also co-owner of MAP Enterprises, Inc. in Graham, NC. Maureen worked in manufacturing as a Metallurgical Engineer and then pursued her career in Information Technology and Management after completing her master's at Elon University and Post graduate studies in Information

Systems and Operations Management at the University of North Carolina Greensboro. Maureen has worked as a consultant for over 29 years specializing in Engineering and Technology fields. Maureen is a Microsoft Office Specialist and specializes in advanced Excel certification for business. Maureen is active in her community in Ashley Woods, Buck Mountain and Hickory Shores.

Maureen Nowak Allen has been active as a session leader in the "IT is for Girls" in Greensboro since its inception in 2009 which has served over 850 girls in middle and high-school in the Triad area and beyond. Maureen is an active member of the Women's resource center which is dedicated to empowering women to improve and enrich their lives. Maureen worked as a faculty advocate and a speaker assisting faculty for over 10 years nationwide to utilize the latest technological advances in the classroom. Maureen Allen is also an active honorary member of the Alamance County service league. She is also a Kernodle center service learning faculty scholar at Elon University.

Crispin Hydock graduated from The Pennsylvania State University in Communication Disorders and Education of the Hearing Impaired. She worked as a teacher of the hearing impaired for 7 years at the Central North Carolina School for the Deaf. Since then, Mrs. Hydock has worked as an elementary school teacher for 16 years at Hunter's Creek Elementary School in Orlando, FL. During this time, she acquired multiple Duke Energy grants that promoted science and STEM education. She was a trainer and mentor for multiple educational innovations such as The Rube Goldberg Project, Thinking Maps, DBQ, and Project Lead the Way at her school. She was honored as the HCES Teacher of the Year recipient in 2012 and given the High Impact Teacher Award showing the greatest achievements in value-added model scores from 2012 to 2015 in Florida. As a Girl Scout leader, volunteer, and teacher, she has spent many years promoting and encouraging women young and old to empower themselves through the sciences.

The future belongs to those who believe in the beauty of their dreams. ~Eleanor Roosevelt

Closing Session Friday July 20th, 2018

Remarks by Dr. Sandra Vannoy, Associate Dean for Graduate Programs and Research



Dr. Sandy Vannoy joined the Walker College of Business faculty as a lecturer in the department of computer information systems in 1998 and remained in this role until 2005. After achieving her PhD in Information Systems in 2010, Vannoy returned to the Walker College as an assistant professor. She was named assistant dean for graduate programs and research in 2014 and was promoted to associate professor and associate dean in 2015. Vannoy was drawn to Appalachian State University and the Walker College of Business because of its student focus and sense of community. Prior to her career in academia, Vannoy owned a small software development company and held administrative positions in the healthcare and banking fields. Vannoy's teaching and research interests involve the role of information technology in organizational decision-making and social dynamics. Vannoy is the director of the MBA program, and has lead the Walker College's graduate programs team to implement two new programs during her tenure as associate dean, a master of science in applied data analytics and professional education..

Introduction of Speaker by Dr. Dawn Medlin, Professor of Information Systems



Dr. B. Dawn Medlin is a Full Professor of Computer Information Systems and Supply Chain Management in the John A. Walker College of Business. Dawn also serves as Coordinator for the College of Business Honors Program. Her teaching, research, and consulting activities have primarily been in the areas of security, health care information systems, webpage development and design, and the interaction between computers and people. Dr. Medlin has taught in France, Spain, Ethiopia and Taiwan as a Visiting Professor. Before joining ASU she owned a Business/Marketing company and worked in the IT field for more than 10 years.

Speaker: Ms. Sarah Alberti, MetLife



A North Carolina Native, Sarah Alberti graduated Cum Laude from Appalachian State University in 2016 with a Bachelor's of Science in Business Administration in Computer Information Systems. While attending ASU, Sarah was a part of many organizations, such as Women of Walker, Women in IT, Project Management Club, Alpha Iota Mu IT Honor Society, and Gamma Beta Phi Honor Society. After graduation, Sarah accepted a job with MetLife in Cary, NC where she currently works within Data and Analytics in Enterprise Data Governance.

Award presentation by Program Leaders

Remarks by Program Leaders, Acknowledgements, and Awards

Thank you and Enjoy the rest of your Summer!

Look forward to hearing about your creations, engagements, and achievements – Stay Connected on Facebook for updates on future events – www.facebook.com/innovateforgood

Addition Information for Residential Campers

RESIDENT CAMPERS: Arrival and Check-in on Sunday July 22, 3:00-4:00pm at LLC residence hall, located at 301 Bodenheimer Dr., Boone, NC 28608. Please see below for packing list.

Residential campers will get a dining card that allows them to have breakfast, lunch and dinner in the dining hall.

Breakfast - 7.30 am to 8.15 am (Monday to Friday)

Lunch - 12.15 pm to 1 pm (along with day campers) (Monday to Friday)

Dinner - 5.00 pm to 6.00 pm. (Sunday to Thursday)

There will be scheduled activities on campus from 6 to about 8.30 pm.

Students will be required to be in their room for roll call each night at 9 pm.

Lights out by 10 pm.

Students must be ready each morning by 7.15 am to walk across to dining hall for breakfast that starts about 7.30 am.

PACKING LIST (FOR RESIDENTIAL CAMPERS):

- Sheet set for extra-long twin bed, pillow, and a blanket.
- Housing is available in Appalachian's Living Learning Center (LLC). This residence hall is set up suite style, where two bedrooms connected by a bathroom to make a suite. Each bedroom has 2 twin beds. The suite will house 4 campers. The residence hall is air-conditioned.
- Toiletries (soap, shampoo, etc.), shower caddy, and towels.
- Flip flops (may want to wear in the shower)
- Water bottle (can fill from water fountains on campus)
- Light jacket/hoodie for cool mornings and evenings...temps drop to 50's
- Shorts/Short sleeves/sleeveless shirts/tops...days are in 80's
- optional: favorite board game(s)/deck of cards/frisbee/football to play games in the evenings
- Optional: Fan, extra money for souvenirs, snacks from vending machines, money for laundry facilities (laundry facilities are located in the dorm and the cost will be \$2.50 to wash and dry one full load)
- A spiral notebook, a few pencils, and pens

CHECK-OUT FOR RESIDENT CAMPERS: Friday July 27, 4:30pm-6:30pm. In lobby of LLC Residence Hall, located at 301 Bodenheimer Dr., Boone, NC 28608



	8:15A - 8:45A	8:45A - 9:15A		9:30A - 10:45A				10:45A-11:00A	11:00A-12:15P			
Mon July 23	Check-in	Orientation / Welcome	Session	Scratch Animation	App Inventor	Lego Robotics	IoTs	Break / Transition	Scratch Animation	App Inventor	Lego Robotics	IoTs
	Peacock Hall (PH) 1020 Lobby	Peacock Hall (PH) 1020	Room	PH 3017	PH 3018	PH 3019	PH 3020		PH 3017	PH 3018	PH 3019	PH 3020
			Leader	Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra		Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra
			Assistant	Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay		Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay
All	All	Group#	Group 1	Group 2	Group 3	Group 4	Group 4	Group 3	Group 2	Group 1		
Tue July 24	Check-in	Daily Group Activity	Session	Scratch Animation	App Inventor	Lego Robotics	IoTs	Break / Transition	Scratch Animation	App Inventor	Lego Robotics	IoTs
	Peacock Hall (PH) 1020 Lobby	Peacock Hall (PH) 1020	Room	PH 3017	PH 3018	PH 3019	PH 3020		PH 3017	PH 3018	PH 3019	PH 3020
			Leader	Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra		Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra
			Assistant	Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay		Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay
All	All	Group#	Group 2	Group 1	Group 4	Group 3	Group 3	Group 4	Group 1	Group 2		
Wed July 25	Check-in	Daily Group Activity	Session	Scratch Animation	App Inventor	Lego Robotics	IoTs	Break / Transition	Scratch Animation	App Inventor	Lego Robotics	IoTs
	Peacock Hall (PH) 1020 Lobby	Peacock Hall (PH) 1020	Room	PH 3017	PH 3018	PH 3019	PH 3020		PH 3017	PH 3018	PH 3019	PH 3020
			Leader	Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra		Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra
			Assistant	Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay		Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay
All	All	Group#	Choice 1	Choice 2	Choice 3	Choice 4	Choice 1	Choice 2	Choice 3	Choice 4		
Thu July 26	Check-in	Daily Group Activity	Session	Scratch Animation	App Inventor	Lego Robotics	IoTs	Break / Transition	Scratch Animation	App Inventor	Lego Robotics	IoTs
	Peacock Hall (PH) 1020 Lobby	Peacock Hall (PH) 1020	Room	PH 3017	PH 3018	PH 3019	PH 3020		PH 3017	PH 3018	PH 3019	PH 3020
			Leader	Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra		Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra
			Assistant	Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay		Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay
All	All	Group#	Choice 1	Choice 2	Choice 3	Choice 4	Choice 1	Choice 2	Choice 3	Choice 4		
Fri July 27	Check-in	Daily Group Activity	Session	Scratch Animation	App Inventor	Lego Robotics	IoTs	Break / Transition	Scratch Animation	App Inventor	Lego Robotics	IoTs
	Peacock Hall (PH) 1020 Lobby	Peacock Hall (PH) 1020	Room	PH 3017	PH 3018	PH 3019	PH 3020		PH 3017	PH 3018	PH 3019	PH 3020
			Leader	Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra		Aleah Brown	Advika Kumar	Christa Simaan	Ambica Ramchandra
			Assistant	Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay		Kimberly Brown/ Serenity Phillips	Alicia Bao/ Maggi Mugi	Rithika J / Suhani R	Sanvi K / Lindsay
All	All	Group#	Choice 1	Choice 2	Choice 3	Choice 4	Choice 1	Choice 2	Choice 3	Choice 4		

12:15P-1:00P		1:00P-1:15P	1.15 to 2.45 pm		2.45 to 3 pm	3:00 to 4.30 PM		4.30 to 4.45 pm	
Break	LUNCH	Transition to next session	Girls Lead/Life Skills	FTC/FLL Robotics	Break and Transition	Girls Lead/Life Skills	FTC/FLL Robotics	Pick-up	Mon July 23
	Dining Hall		PH 3017	PH 4th Floor Holland		PH 3017	PH 4th Floor Holland Engagement Room		
			Maureen Allen	WHS Robotics		Maureen Allen	WHS Robotics		
All		Advika, Aleah	Ambica, Christa, Lindsay	Advika, Aleah	Ambica, Christa, Lindsay	Groups 1 and 2	Groups 3 + 4	Groups 3 + 4	Groups 1 and 2
12:15P-1:00P		1:00P-1:15P	1.15 to 2.45 pm		2.45 to 3 pm	3:00 to 4.30 PM		4.30 to 4.45 pm	
Break	LUNCH	Transition to next session	Computer and Internet Security	Build a Computer	Break and Transition	Computer and Internet Security	Build a Computer	Pick-up	Tue July 24
	Dining Hall		PH 3017	Anne Belk Hall 135		PH 3017	Anne Belk Hall 135		
			Chris and Julie	Danny Morehead		Chris and Julie	Danny Morehead		
All		Advika, Aleah	Ambica, Christa	Advika, Aleah	Ambica, Christa	Groups 1 and 2	Groups 3 + 4	Groups 3 + 4	Groups 1 and 2
12:15P-1:00P		1:00P-1:15P	1.15 to 2.45 pm		2.45 to 3 pm	3:00 to 4.30 PM		4.30 to 4.45 pm	
Break	LUNCH	Transition to next session	3-D Design	Tools for Visual Representation	Break and Transition	3-D Design	Tools for Visual Representation	Pick-up	Wed July 25
	Dining Hall		PH 3017	PH 3018		PH 3017	PH 3018		
			Sarah and Jesse	David Schouweiler		Sarah and Jesse	David Schouweiler		
All		Advika, Aleah	Ambica, Christa	Advika, Aleah	Ambica, Christa	Groups 1 and 2	Groups 3 + 4	Groups 3 + 4	Groups 1 and 2
12:15P-1:00P		1:00P-1:15P	1:15P-4.30 PM					4.30 to 4.45 pm	
Break	LUNCH	Transition to next session	Work on Projects in Respective Groups					Pick-up	Thu July 26
	Dining Hall		Work on Projects in Respective Groups						
			All	Session Leaders and assistants same rooms as AM					
12:00P-12:15P	12:15P-1:00 PM	1:00P-1:15P	1:30P-2:30P		2:30P-2:45P	2:45P-4:00P	4.30 to 4.45 pm		
Complete Surveys (ALL)	LUNCH	Transition to next session	Presentations			Break / Transition	Awards & Conclusion	Pick-up	Fri July 27
	Dining Hall		PH 1020	PH1018	PH 1020				
			Students+Parents+ Judges		Students+Parents+ Judges		All		
All		IOT/Robotics		Scratch/ App Inventor 2					

Sponsors and Upcoming STEM Events

We appreciate your donations in cash/kind that will make this event possible!

Event Sponsors



In-kind Sponsors



Upcoming STEM Events in Triad Area

AAUW Greensboro and UNCG announces the event below for 2018-2019:

Saturday October 20th Triad Tech Savvy for Ninth Grade Girls
Topic - mathematics and computer science applied to bio-technology

Watch for details on the website: <http://greensboro-nc.aauw.net/techevents/>