Registration is now open to all interested girls and boys, grades 6-12.

To enroll in this year’s San Juan Summer CodeCamp, please scan the QR code and complete the online registration form at: http://tinyurl.com/SJUSDCodeCamp2015

Email Matt Rowland and Jon Leister at codecamp@sanjuan.edu or call 916-971-7808 for assistance or additional information.
Summer Coding & Robotics Camp
Technology Fee Based Programming Course (Middle and High School Students)

Program Design
The Coding and Robotics Summer Enrichment Camp is open to any middle or high school aged student (11-18) and will provide an introduction to computer science, programming, and robotics. Two San Juan teachers, Matt Rowland and Jon Leister, will team teach using a project-based, student-centered approach that incorporates whole group, small group, and individualized learning activities. Schoology will serve as a digital hub for shared resources, online activities, collaboration, and as platform for academically focused, social interaction (student voice through blogging and digital literacy reflections).

Course Structure
- Whole group........................................ 50 students, 2 teachers
- Large Group............................................. 25 students, 1 teacher
- Small Group or Team Breakout Sessions... 3–4 students with instructor

Day 1
- Whole group introduction and team-building activities, expectations, etc.
- Large or whole group instruction on use of Schoology
- Large group intro to coding concepts using Code.org (http://code.org)

Day 2
- Large group intro to graphic programming using Scratch & Robomind
  o https://scratch.mit.edu/
  o http://www.robomind.net/en/index.html

Day 3 - 6
8:00 AM - 10:00 AM
- Large Group A - robotics workshops including virtual and physical robotics
- Large Group B - game design and modding Minecraft using Learntomod.com (http://www.learntomod.com/)

10:00 AM - 12:00PM
- Large Group A - game design and modding Minecraft using Learntomod.com
- Large Group B - robotics workshops including virtual and physical robotics (http://tinyurl.com/mqlnpuh)

Day 7 - 8
- Student selected independent study
  - Continued exploration of game design and MinecraftEDU Mod Development
  - Continued exploration of more advanced robotics
  - Command line programming using CodeAcademy (http://www.codecademy.com/)
    Programming Languages: Java, Python, C++
  - Explorations in iOS App development
    - Xcode and Swift
Why Code?
In a recent symposium held by The Alliance for Distance Education in California (http://www.adec-ca.org/), Mia Keeley of the California Community Colleges Chancellor’s Office reported that from the college admissions point of view, there is virtually no difference between College or Career readiness. Both realms seek recent high school graduates who can problem solve, work collaboratively, think creatively, and communicate effectively.

“Computer science develops students’ computational and critical thinking skills and shows them how to create, not simply use, new technologies. This fundamental knowledge is needed to prepare students for work and life in a 21st century economy, regardless of their ultimate field of study or occupation.”

Couple this with the fact that the Bureau of Labor Statistics estimates that by 2018 computing occupations in the United States will grow by 21 percent, or about 800,000 new jobs – more than double the growth rate of all occupations in the United States – it becomes clear that schools will need to incorporate coding literacy into their academic programs to ensure students’ have a foundation for success in a digital economy.

Utilizing freely available coding resources on the web such as Code.org, CodeAcademy.com, LearnToMod.com, RoboMind Academy, and other highly engaging areas of game design and robotics, San Juan teachers, Matt Rowland and Jon Leister, will lead students through an introduction to basic coding concepts, full game modification, robotics design, and engineering. STEM (science, technology engineering and math) concepts will be fully integrated as students test robotic designs with Lego MindStorms and Arduino Microprocessor controlled robots. The entire experience will be captured by participants though video snippets and via personal blogs on the district’s LMS, Schoology.

**Date and Time**
June 8th - June 19th (Monday - Thursday)
8:00AM - 12:00PM

**Location**
San Juan USD D.O.
Digital Edge Learning Center and Board Room (Whole Group Activities)

**Computing Devices**
Computers from Digital Edge Training Room or Selected Camp Site

*Transportation is the responsibility of participant families*

**Programming Environments**
To optimally capture and hold students’ interest, specific tools and programming environments will be utilized and paired with high-yield academic pedagogy. One such resource builds on research around the “Gamification of Education.” Gamification attempts to recreate the success found in video games (e.g., short and long terms goals, intrinsic motivation, full immersion in storylines and social, community-based activities) to inspire students’ creativity and tap individual learning styles. The academically focused application, Minecraft EDU (based on the wildly popular Minecraft program), will leverage students’ existing interest in the immersive learning environment and provide them with the skills and knowledge to customize and tailor their worlds through coding with, “LearntoMod Minecraft.” LearntoMod leverages the universal programming language, JavaScript, with intuitive visual building elements that teach students to modify (“Mod”) Minecraft worlds; providing a scaffold to the basics of computer language and logic. Additionally, hands on activities that integrate the exciting and engaging field of robotics will be used to support STEM learning opportunities, bringing the worlds of computer programming (technology and math), electronics (science), and mechanical engineering to life.