

THE SCIENCE TALKS SERIES PRESENTS

STAR PARTY

FRIDAY, APRIL 22 • 7:30 - 10PM

AT THE CANYON COUNTRY CAMPUS

Guest speaker

John Callas

Manager, NN-EXPLORE/Former Manager, Mars Exploration
Rover Project NASA's Jet Propulsion Laboratory

The Robotic Exploration of the Surface of Mars

- Hear about the history of Mars exploration and today's missions
- High-powered telescopes for viewing the skies
- Table displays and demonstrations
- Fun for all
- Free and open to the community!

www.canyons.edu/ccs

For more information (661) 362-3800



ABOUT THE SANTA CLARITA COMMUNITY COLLEGE DISTRICT

The Santa Clarita Community College District serves a 367-square-mile service area in northern Los Angeles County. College of the Canyons, the single college within the district, has campuses in Valencia and Canyon Country as well as online. Located on a 153-acre campus in Valencia and a 70-acre campus in Canyon Country, the College offers classes during fall and spring semesters, as well as summer and winter intersessions. Currently, COC offers more than 180 degrees and certificates, along with 30 undergraduate and graduate degree programs available in the University Center from multiple partner institutions.

The Canyon Country Campus, which opened in 2007, has become known as a comprehensive campus that offers high-quality instructional programs, supportive student services, and meaningful community partnerships. Since 2007, the campus has offered more than 8,000 classes and served more than 66,000 students, and the campus is transforming with new permanent structures. The Takeda Science Center at the Canyon Country Campus opened to students in Fall 2021, providing 55,000 square feet of state-of-the-art laboratory and classroom space for high-demand instructional programs. The Science Center is a beautiful facility that has expanded campus opportunities and pathways for students and the community. In Fall 2022, the campus also expects to open a new Student Services & Learning Resources Center to provide integrated student support functions, library, tutoring, and classrooms adjacent to the Science Center.

College of the Canyons has maintained its status over the years as one of the largest employers in the Santa Clarita Valley and is a vital cultural, educational, and economic force in the region. The Canyon Country Campus contributes to this educational work and community impact. For more information, including class registration information, please visit the website below:

COLLEGE OF THE CANYONS CANYON COUNTRY CAMPUS

17200 Sierra Highway, Santa Clarita, CA 91351

(661) 362-3800 | www.canyons.edu/cc

EVENT AGENDA



7:30 – 7:45pm **Welcome & Opening Remarks**

Dr. Ryan Theule, Campus Vice President, and
Mr. Anthony Michaelides, Campus Dean

7:45 – 7:50pm **Local Group Astronomy Club**

Dave Flynn, Member, The Local Group Astronomy Club of SCV

7:55 – 8pm **Meet Our Students**

Professor Teresa Ciardi and the Aerospace and Science Team

8:05 – 8:50pm **“The Robotic Exploration of the Surface of Mars”**

Presenter: John L. Callas, Manager, NN-EXPLORE/
Former Manager, Mars Exploration Rover Project; NASA’s Jet
Propulsion Laboratory

8:50 – 9:05pm **Q & A**

9:05 – 9:10pm **Closing Remarks**

7:30 – 10pm **Explore Interactive Table Displays**

Stop by the table displays to see activities and projects,
provided by College of the Canyons’ student clubs, departments
and other groups

7:30 – 10pm **Telescope Viewing**

Telescopes are provided by the Local Group Astronomy Club of
SCV, and the Antelope Valley Astronomer’s Club, and by College
of the Canyons.

Thank you for joining us!!

SPECIAL GUEST SPEAKER



**John Callas,
Manager, NN-EXPLORE/
Former Manager, Mars
Exploration Rover Project
NASA's Jet Propulsion
Laboratory**

Mars has been the target of exploration since the beginning of the Space Program, first with fly-by missions, then orbiters, then

landers. Since 2004, NASA rovers have been conducting sustained exploration of the surface of Mars. The first rovers of this sustained exploration, Spirit and Opportunity have made significant discoveries in understanding the Red Planet, finding evidence of past habitable environments that could possibly have supported life. More recently, Curiosity, a larger, more capable rover, has extended the exploration to a third location on Mars, Gale Crater and is advancing the current phase of exploration with the ability to search for the chemical building blocks of life, organic molecules, moving closer to answering the questions about extinct or extant life on Mars. NASA recently landed the next rover mission, Mars 2020 Perseverance rover along with the Mars helicopter, Ingenuity to explore, collect and cache samples for eventual return to Earth. The return of those samples will be a major step forward in our understanding and exploration of Mars.

John L. Callas, of NASA's Jet Propulsion Laboratory, Pasadena, Calif., was project manager of NASA's Mars Exploration Rover project from March 2006 to end of the project in September 2019. Previously, as science manager and then deputy project manager, he had supported the rover project since 2000. Callas grew up near Boston, Mass. He received his Bachelor's degree in Engineering from Tufts University, Medford, Mass., and his Masters and Ph.D. in Physics from Brown University, Providence, R.I. He joined JPL in 1987 to work on advanced spacecraft propulsion, which included such futuristic concepts as electric, nuclear and antimatter propulsion. In 1989 he began work supporting the exploration of Mars with the Mars Observer mission and has since worked on seven Mars missions. He has also been involved in the development of X-ray and gamma-ray instrumentation for astrophysics and planetary science. Currently he is supporting the discovery and characterization of exoplanets by leading the joint NASA-NSF Exoplanet Observational Research program. In addition to his JPL work, Callas teaches mathematics at Pasadena City College as an adjunct assistant professor.

EXOPLANETS: WHAT'S OUT THERE

NASA Projects History & Scope

Professor Teresa Ciardi

At College of the Canyons (COC), we have developed an Aerospace & Sciences Team that has successfully competed to place experiments on the NASA High Altitude Student Platform (HASP) balloon and on the NASA RockSat-X suborbital rocket. COC competes with university teams for a limited number of spots on these platforms and is one of only a few community colleges to succeed, and the only community college to succeed 6 years in a row on HASP (2016, 2017, 2018, 2019, 2021, 2022) and 3 years in a row on RockSat-X (2019, 2021, 2022). We were invited to launch a 3rd project this year, and will launch 3 NASA space projects (RockSatX, HASP, and RockOn) in summer (2022).

Students work on their own time to make their ideas a reality while attending school and very often navigating life (e.g., full-time work, families). These student-designed experiments are completed on site by the students under the volunteer mentorship of two faculty advisors (Teresa Ciardi and Gregory Poteat). Students design, fabricate, integrate, and test the entire system. The students solder their own flight computers, develop 3D renderings, create mechanical drawings for machining, machine and construct their payload, develop leadership and time management skills, write initial testing procedures and analyze results, do all of the coding, complete reports and design reviews, and participate in public speaking and fundraising. We are an inclusive team and welcome all who have a desire to participate. The outcome is the achievement students reach from these experiences, and this was recognized when our HASP project was mentioned by the visiting 2022 Accreditation team!

Space Diversity, Equity, & Inclusion in Action

Participation in real space flight projects on student's own time is one way to address the lack of diversity in STEM. All students are welcomed, and inclusivity is expected and practiced. As a result, we have a team comprised of many students who are unrepresented in STEM with women and minorities in leadership positions. Students work collaboratively toward a common goal, to design, build, and launch experiments to space, to do something real. Confidence grows and students who would typically not continue in STEM are facing and overcoming barriers and persisting in their STEM pathways. The NASA projects instill motivation as students volunteer their time to build their skills and learn on their own. The real space flight skills and experiences acquired and developed through participation in NASA HASP and NASA RockSatX are in addition to what is taught in the classroom, and students are fully engaged in the process of doing something that is meaningful to them. There is a social need to remove barriers (perceived and real) and change the face of STEM to include many colors and all genders, a social need to support our underrepresented students in STEM in unique ways so they will persist.

2021 ROCKSATX LAUNCH & 2021 HASP TESTING INTEGRATION



2022 Team Make-up

- 54 current students (40% female, 59% male, 1% non-binary)
- 7 COC alumni participating
- 11 ethnicities (African American/Black, Asian, European, Filipino, Hispanic/Latinx, Indian, Japanese, Korean, Mexican, Middle Eastern, White)

A Challenge

Our largest barrier to the success of this program is the **funding**. We rely on community donations to make this valuable experience possible to promote DEI in STEM in a meaningful way that yields real space flight skills, and these **skills lead to transfer, internships, scholarships, and careers**. Without **donations**, this unique opportunity for the community college team would not exist.

Completing NASA missions does not fit within the framework of community college funding; however, we have proven for 6 consecutive years that these projects are important to the overall education and skill attainment and lead to persistence in STEM for all populations. Furthermore, the diversity seen on our team is not typical of what is seen in a STEM classroom especially in the disciplines of computer science, engineering, and physics.



PARTICIPATING CLUBS/GROUPS

Join us in thanking the following clubs, departments and organizations represented at the demonstration tables this evening:

- Active Minds
- All Can Code Club
- American Cancer Society
- Associated Student Government
- Astronomy & Physics Club
- Biological & Environmental Sciences
- Chemistry Club
- Civic Engagement Club
- College of the Canyons Library
- Hands on Earth Club
- Helping Us Become Club
- STEM Equity Alliance

CANYON COUNTRY CAMPUS DON TAKEDA SCIENCE CENTER

The Don Takeda Science Center is an exciting new facility at the Canyon Country Campus. Opened for initial classes in Fall 2021, the four-story structure is situated at the center of campus on Dr. Dianne G. Van Hook Drive, a campus road named in 2018 to honor the Chancellor's 30+ years of service to College of the Canyons. With nineteen state of the art classrooms and labs, this facility is an important part of student access, engagement, and success on campus. An adjacent terraced amphitheater and plaza also provides student instruction and gathering space outdoors alongside the facility.



The Student Services & Learning Resources Center is currently under construction to the south of the Science Center and will provide a “one-stop” center for student support services.



Our sincere THANKS to all who made this evening possible!

Santa Clarita Community College District Board of Trustees

Edel Alonso • Michael D. Berger • Sebastian Cazares •
Michele R. Jenkins • Joan W. MacGregor

Chancellor Dr. Dianne G. Van Hook

Guest Speaker, John Callas

Manager, NN-EXPLORE/Former Manager,
Mars Exploration Rover Project, NASA's Jet
Propulsion Laboratory

Antelope Valley Astronomy Club

The Local Group Astronomy Club of Santa Clarita Valley

The Star Party Committee

Teresa Ciardi • Anthony Michaelides • Jamie Page •
Maria Sanchez • Nicholas Schutz • Dr. Ryan Theule

COC Departments, Clubs, and Staff

Additional Information about the Canyon Country
Campus, including info on how to support student
scholarships, is available at—

www.canyons.edu/canyoncountry

