



**Wednesday
November 18, 2026
3:10 pm
Room 1003 EECS**

Dr. Dan Goebel

NASA Jet Propulsion Laboratory (JPL)

The Psyche Mission and Advances in Electric Propulsion at JPL

The Psyche spacecraft was launched on October 23, 2023 from Kennedy Space Center on a Falcon Heavy Rocket. The launch began the spacecraft's 2.2 billion mile journey to the asteroid 16 Psyche in the outer part of the main asteroid belt between the orbits of Mars and Jupiter. The Psyche asteroid, composed of over 50% metal by weight is possibly the metal core of a planetesimal whose formation was interrupted early in the solar system by collisions with other bodies that created the asteroid belt. The Psyche spacecraft is a hybrid. Maxar/Intuitive-Machines, now known for taking photographs from space over Ukraine, fabricated the spacecraft bus based on heritage hardware, and JPL installed scientific payload, avionics and autonomous flight software for deep space operation. This \$900M NASA mission is the first spacecraft to use Hall thrusters in deep space to rendezvous and orbit the asteroid, and recently completed a Mars Gravity Assist on the way to rendezvous in 2029. A 2-year science program will determine the asteroid's composition and remnant magnetic field to determine if this unique object really is a planetary core...and what that actually looks like. The talk will describe the Psyche mission and provides updates on electric propulsion at JPL.

About the Speaker: Dr. Dan M. Goebel received a B.S. in physics in 1977, an M.S. in EE in 1978, and a Ph.D. in applied plasma physics in 1981 from UCLA. He is a Fellow and Senior Research Scientist at JPL and an Adjunct Professor of Aerospace Engineering at UCLA. At JPL he is the Chief Engineer of the Psyche Mission and responsible for the development of advanced spacecraft technologies. Dr. Goebel is a member of the National Academy of Engineering, the National Academy of Inventors, and Fellow of the AIAA, IEEE, and APS. He is the author of over 300 technical and conference papers, two textbooks on Electric Propulsion, and holds 60 patents.