

**11<sup>th</sup> Annual Undergraduate Research Symposium**  
**Science Speaker Series**  
**4 October 2019, 1:30-4:00 PM**  
**Jim and Linda Lee Planetarium**

- 1:30PM Bethany Davis (Hillary L. Eaton, Catherine E. Benson, Matthew J. Valente, mentors)  
*A Walk through eDNA Research from the Conservation Genetics and Wildlife Forensics Lab*
- 1:40PM Brad Ratto and Colter Richardson (Michele Zanolin, mentor; collaborators: Cecilia Lunardini and Zidu Lin - Arizona State University, Kei Koake - Fukuoka University)  
*Data Analysis for Gravitational Waves from Core-Collapse Supernovae*
- 1:50PM Nick Bartholet and Josh Chandley (Wallace Morris, mentor)  
*Eagle Aero Sport: Student-Built Aircraft*
- 2:00PM Kevin Dorland and Trace Edmier (Krishna Sampigethaya, mentor)  
*Security Vulnerabilities in Flight Systems*
- 2:10PM Ashley Elliott and Jonah Greenwood (Darrel Smith, mentor; collaborators: Ryder Moreno, Jeramy Gordon, Emily Strawn, and Kate Walker)  
*Coherent Captain Mills: The Search for Sterile Neutrinos*
- 2:20PM Paige Swenson (Curtis James, Mentor)  
*Synoptic and Orographic Influences on The 2010 Northern Arizona Tornado Outbreak*
- 2:30PM Tara Trail (Elliot Bryner, mentor)  
*Film Cooling Effectiveness on Turbine Vanes*
- 2:40PM Brennan Gray, Parker D. Landon, Tristan Minkoff (Kaela Martin, mentor; affiliate: Damon Landau)  
*Julia Language 1.1 Ephemeris Reader and Gravitational Modeling Program for Solar System Bodies*
- 2:50PM Alexandra Erno (Sam Siewert, mentor)  
*Breach of Perimeter Detection using a Wireless Sensor Network*
- 3:00PM Meaghan Moeller, Jason Aronson, Maciek Czyz, Laura Rudnik, Jacob Stites, Virpaul Uppal (Daniel White, mentor)  
*Moon Ice Northern Extracting Craft*
- 3:10PM Forrest Mobley and Anthony Pirone (Shigeo Hayashibara, Earl Duque - Intelligent Light, mentors)  
*New Department of Defense Computational Fluid Dynamics Software Suite Evaluation*
- 3:20PM John Norton and Ryder Moreno, (Daniel White, mentor; collaborators: Tyler Hoover, Kimiya Ghobadi, Parker Ayars, Catilyn Ooms)  
*Design and Construction of a Thrust Stand for Low Power Electric Propulsion*
- 3:30PM Eleanor Pahl (J. Matt Pavlina, Akhan Almagambetov, mentors)  
*Automatic Extraction and Classification of Flow Visualization Features using Machine Vision*
- 3:40PM Matthieu Rada, Eleanor Pahl, Parker Landon (Andy Gerrick, mentor)  
*Arizona Hyperloop: The Fifth Mode of Transportation*