Educational tools in action to educate and inspire students in science and technologies and topics of astrobiology.

**Chairs:** William Alejandro Gonzalez Amezquita  
German Alexis Sarmiento Lopez

2:00 p.m. Chambers N. M. * Zimmerman-Brachman R.  
*Teaching Astrobiology as a High School Science Course* [#5057]  
Astrobiology is an ideal bridge between high school science and the professional community, inspiring high student enthusiasm. An existing upper-level elective course is outlined, including lab activities, standards, and outreach opportunities.

2:15 p.m. Fried B. * Dash H. B.  
*Astrobiology in an Urban New York City High School: John Dewey High School’s Space Science Academy* [#5065]  
John Dewey High School’s participation in NASA’s MESDT and DLN projects and other partnerships provide opportunities for our diverse population, focusing particular attention to under-represented and under-served groups in the field of Space Science.

2:30 p.m. Mayeur P. A. * Whittet D. C. B. Delano J. Smith C.  
*Bringing Astrobiology to Middle School Students: ExxonMobil Bernard Harris Summer Science Camp* [#5115]  
Astrobiology is a great method of teaching, because of its use of multiple fields of science. The Bernard Harris Summer Science Camp is an opportunity for middle school students to begin learning about Astrobiology.

2:45 p.m. Venner L. *  
*Engineering Design Challenge: The Search for Life* [#5189]  
Engineering Design Challenge: The Search for Life; engages students in hands-on activities enabling them to identify planets that may have the ingredients to support life. The challenge concludes with the students building a rover, orbiter, or probe.

3:00 p.m. Ebrahimi M. * Khanlar A. Yoosefi M. H. I Tabatabaifar M.  
*Necessity of Familiarizing Student to Astrobiology High Schools* [#5237]  
High school students are preparing themselves for entering the university, having basic knowledge on astrobiology could lead to train better and more efficient researchers and scientists in future of astrobiology.

3:15 p.m. BREAK

3:30 p.m. Arino de la Rubia L. * Butler J. Gary T. Kuner S. Mumma M.  
*Using Edible Models to Communicate Principles of Comet Science: Assembling Amino Acids from Simpler Molecules* [#5349]  
This presentation outlines the ways in which edible models can be used to demonstrate principles of astrochemistry and explain current research in comet science to high school and undergraduate students.

3:45 p.m. LiCata V. J. *  
*“Meet an Astrobiologist”: A Series of Short, Dynamic Video Profiles of Astrobiology Researchers Designed for General Audiences* [#5446]  
A series of short video profiles of astrobiologists at the Louisiana State University have been produced in collaboration with a local video company. Strategies, content, and design approach will be discussed along with the videos.
4:00 p.m. DeVore E. K. * Harman P. K.  
**Astrobiology Professional Development for Teachers: Online vs. In-person, Lessons Learned** [#5505]
Astrobiology offers an engaging interdisciplinary theme for teacher professional development (TPD). We compare lessons learned from online vs. in-person TPD in graduate science education courses for teachers. Each has its merits and challenges.

4:15 p.m. Edmonds J. P. * Brandenburg G. F.  
**Cheap and Sturdy Student Telescopes Made with Plumbing Parts** [#5552]
This rugged telescope design uses readily available PVC pipe and connectors to house the optics and may be constructed for under $20. The low cost, durability and portability make it ideal for individual student observations in the field.

4:30 p.m. Cola J. * Williams L. D. Harris B. Snell T. Gaucher E. Usselman M.  
**Summer Research Experiences for Teachers to Explore Astrobiology** [#5562]
The Georgia Tech Center for Ribosome Adaptation and Evolution, a center funded by the NASA Astrobiology Institute, developed an educational Astrobiology program titled, “Life on the Edge: Astrobiology.”