

Pamela K. Harman

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Current Position and Recent Programs:

Acting Director of Education 2017 to present

Education Manager, SETI Institute 2002 to present

- Reach for the Stars: NASA Science for Girl Scouts, PI NASA Cooperative Agreement. Developing and testing space science badges for Girl Scouts; facilitating camps and trainings for girls and adults; managing sub-awards and cross-collaboration agreements.
- Girls Go To Mars, NASA MAVEN Sub-award Co-I. Developed Cadette Girl Scout Patch Program aligned with Girl Scout Journey.
- NASA, formerly SOFIA, Airborne Astronomy Ambassador Education Program Co-Manager. Program includes curriculum development, Airborne Astronomy Ambassador professional development and facilitation of flight week experience for formal and informal educators.
- Education administration; manage conference exhibits; developed and managed resident summer institute for high school science teachers; developed and facilitated workshop for Junior Girl Scouts and for Cadette Girls Scouts; school site visits and presentations; investigated funding opportunities; prepared proposals and budgets; and forming a network to develop an out-of-school program proposal.

Outreach Manager 2002 - 2017

- NASA Stratospheric Observatory For Infrared Astronomy (SOFIA) Outreach Staff.
- Outreach administration; managed conference exhibits and costs; edited quarterly electronic newsletter; and public speaking.

Relevant Experience

- STEM Teacher As Research (STAR) Program, Lab Liaison, 2009 to present
- Co-I, Reach for the Stars: NASA Science for Girl Scouts, 2015 to 2018
- Co-I, NASA Airborne Astronomy Ambassadors, 2015 to present
- PI, Mysteries of Science, 2008 - 2010
- Co-I, Girls Go To Mars, 2013 - 2016
- Astrobiology Summer Science Experience for Teachers, program manager 2004 – 2013
- Astrobiology For Youth, Astrobiology Institute, Cartagena, Colombia invited speaker, 2012
- Review Panel Chair, NASA ROSES Education Supplements and Outreach Supplements, 2010 - 2011
- NASA Kepler Mission EPO Staff 2002 - 2010
- *Astrobiology Adventure: Exploring the Solar System* workshop manager for Junior Girl Scouts 2006 - 2009
- Astrobiology Science Conference (AbSciCon) 2008 Local Organizing Committee

- Australian School Innovation in Science Technology Mathematics Project (ASISTM), The Search for Life on Mars project team 2008.
- NASA Astrobiology Institute Lead Team EPO Staff 2003 -08
- NASA Stratospheric Observatory for Infrared Astronomy (SOFIA) Outreach Staff 2000 – 2017
- Astrobiology for Teachers Instructor, Penn State University and University of Hawaii 2004-2005
- National Lead Teacher, *Evolution Project*, WGBH Boston, 2001 – 2011
- NSF Informal Science Education Proposal Review Panelist 2008 and 2009
- Astrobiology workshop for teachers, Reykjavik, Iceland, 2004
- Active Astronomy Kit Pilot Test Manager 2002
- Australian-American Fulbright Symposium 2002: “Science Education in Partnership,” planning committee member
- Education Associate, SETI Institute, September 1999 – 2002
- High School Science Teacher, Oceana High School, Pacifica, CA 1995 – 99
- Tech Writer, *Voyages Through Time* Curriculum Project, SETI Institute 1998-99
- Steering Committee San Mateo County Biotech Education Partnership 1997-99
- Earthwatch Mentor Teacher, Stanford Human Genome Center 1998

Professional Development

- Next Generation Science Standards (NGSS) curriculum design, development, alignment and implementation, over 80 hours
- Leadership Institutes, NSTA 2016 and 2017
- Institute for Inquiry: Assessment for Learning Training 2011
- National Science Resources Center K-16 Science Education Symposia 2010
- Project 2061 Atlas of Science Literacy Training 2007 and 2008
- Beyond The Solar System, Expanding the Universe in the Classroom, 2007
- Designing Exemplary Professional Development Experiences for Educators, 2004
- Project 2061 Curriculum Alignment Training 1998
- PE Applied Biosystems Methods in PCR, 1997

Other Related Experience:

- Engineering Student Mentor,
- Project Manager and Estimator, Dillingham Construction Co., Inc, Pleasanton, CA
- Project Engineer, DYN Construction Co., Martinez, CA
- Division Engineer, Kaweah Construction Co., Visalia, CA
- Assistant Engineer, The Weitz Co., Des Moines, IA

Education:

California Teaching Credential: Biological Sciences
 Alternative Employed Teaching Credential Program, San Francisco State University
 B.S. Construction Engineering, Iowa State University

Professional Memberships:

American Astronomical Society
 Astronomical Society of the Pacific

American Geophysical Union
California Academy of Sciences
National Association of Biology Teachers
California and National Science Teachers Association

Honors:

2014 NASA Group Achievement Awards, Planetary Lake Lander Team, SOFIA Outreach Team, and SOFIA Program

2012 NASA Group Achievement Awards, SOFIA AAA Pilot Program Results, and SOFIA Outreach; NASA Ames Honor Awards, Kepler Science Conference Local Committee, and SOFIA @ Ames

2011 NASA Group Achievement Award, Kepler EPO; NASA Ames Honors Award, SOFIA Outreach SOFIA at Ames

2009 NASA Ames Honor Award, Kepler Launch and Commissioning Team

2008 and 2009 San Mateo County Science Fair Judge and Awards Ceremony MC

2008 State of California Senate, Biotech Partners, Innovative Programming and Outstanding Service in Connecting Youth to Viable Future Opportunities in Biotechnology

Publications:

Backman, D Clark C, Harman P, The Airborne Astronomy Ambassadors (AAA) Program and NASA Astrophysics Connections 231st AAS Meeting, abstract 131.05, 2018.

Harman, P, Chen, W, Friedman, W, Girl Scouts and Subject Matter Experts: What's the Connection? 231st AAS Meeting, abstract 131.06, 2018.

Harman P., DeVore E., Chin W., Friedman W., Engaging Girl Scouts In The 2017 Total Eclipse and Beyond, Astronomical Society of the Pacific Annual Meeting, 2017.

Backman, D., Clark C., Harman P., NASA Airborne Astronomy Ambassadors AGU Fall Meeting, ED14A-02, 2017.

Harman P., DeVore E., Chin W., Friedman W., Girl Scout Stars: Engaging Girl Scouts In The 2017 Total Eclipse, AGU Fall Meeting, ED34B-04, 2017.

Harman P., DeVore E., Chin W., Friedman W., Girl Scout Camps and Badges: Engaging Girls in NASA Science, AGU Fall Meeting, ED54A-01, 2017.

DeVore, E., Harman P., Reaching for the Stars: NASA Science for Girl Scouts (Girl Scout Stars), 439.07 (2017) AAA 229th Meeting

Backman, D., Clark C., Harman P., NASA Airborne Astronomy Ambassadors AGU Fall Meeting ED42A-05, 2016.

DeVore E., Harman P., et al, Reaching for the Stars: NASA Science for Girl Scouts, AGU Fall Meeting, ED43B-0855, 2016.

Clark, C., Backman D., Harman, P., SOFIA Technology: The NASA Airborne Astronomy Ambassador (AAA) Experience and Online Resources, AGU Fall Meeting, ED23E-03, 2016.

Clark, C., Backman, D., Harman, P., Veronico, N., NASA SOFIA International Year of Light (IYL) Event: Infrared Light: Hanging out in the Stratosphere, 228.05 (2015) AAS 225th Meeting.

Harman, P., Backman, D., Clark, C., NASA SOFIA AAA Program Evaluation Results, 410.08 (2015) AAS 225th Meeting.

Sneider, C., ed., Harman, P., DeVore, E. “Voyages through Time and the Evolution of Technology”, *The Go-To Guide for Engineering Curricula*, Grades 9-12, Corwin, 2015.

DeVore, E., Gould, A., Koch, D., Komatsu, T., Harman, P., “Kepler’s Third Law and NASA’s *Kepler Mission*” (2015) *The Physics Teacher*

Sharman, M., Smith, D., Eisenhamer, B., Ryer, H., Dussalt, M., et al., including Harman, P., “Astro4Girls and Their Families: Sharing Science via Public Libraries” *Communicating Science: A National Conference on Science Education and Public Outreach*, ASP Conference Series, Volume 473, 2013

Gould, A., DeVore, E., Harman, P., “Graphing, Gravity, and Kepler’s Laws – Activities from NASA’s Kepler Mission EPO” *Earth and Space Science: Making Connections in Education and Public Outreach*, ASP Conference Series Volume 443, 2011

DeVore, E., Harman, P., Koch, D., Gould, A., “NASA’s Kepler Mission: Lessons Learned from Teacher Professional Development Workshops” *Science Education and Outreach: Forging a Path to the Future*, ASP Conference Series Volume 431, 2010

Grinspoon, D., CoBabe, E., Harman, P., Prather, E., “Collaboration Across the Sciences: How Can We Improve Our Practice and Prepare the Future?” *Science Education and Outreach: Forging a Path to the Future*, ASP Conference Series Volume 431, 2010

Harman, P., DeVore, E., “Astrobiology as a Context for High School Science: Teachers’ Professional Development” *Molecules, Microbes and Extraterrestrial Life*, ASP Conference Series Volume 420, 2009

Koch, D. G., DeVore, E., Gould, A., Harman, P. *Seeking Other Worlds*, Vol. 33 No. 4 2009 *Science Scope*, NSTA.

Koch, D. G., DeVore, E., Gould, A., Harman, P. *Take Off With NASA’s Kepler Mission!* Vol 76 No. 1, 2009 *Science Teacher*, NSTA.

Bug, L., Brown, L., Harman, P., DeVore, E., Bahr, M., et al, *NASA Astrobiology Institute Science Researchers and Educators: Collaborating to Enhance Teacher Professional Development*, (2008) 24-05-O *AbSciCon*, *Astobiology* Vol. 8 Number 2.

DeVore, E., Harman, P., Graduate Science Education for Teachers, (2008) 35-05-O
AbSciCon, Astrobiology Vol. 8 Number 2.

Reinfeld, E., Bailey, J., Harman, P., Lee, M., “Professional Development in the
International Year of Astronomy: Expanding the Universe in the Classroom” Preparing
For The 2009 International Year of Astronomy: A Hands-on Symposium, ASP
Conference Series Volume 400, 2008

DeVore, E., Gould, A., Harman, P., and Koch, D. G., Engaging the public in the discovery
of other worlds: the Kepler discovery mission education and public outreach program,
110-11 (2006) AAS 207th Meeting.

Harman, P., DeVore, E., Gould, A., Koch, D., Engaging the Public in the Discovery of
Other Worlds: The Kepler Discovery Mission Education and Outreach Program, (2006)
#71 AbSciCon, Astrobiology Vol. 6, Number 1.

Koch, D. G., DeVore, E., Gould, A., Harman, P. Celebrating 400 years of *Astronomia Nova*:
Johannes Kepler, the *Kepler Mission* and the International Year of Astronomy 2009

Harman P., DeVore E., “Learning Progressions in *Voyages Through Time*™ High School
Science Curriculum and Astrobiology Summer Science Experience for Teachers (ASSET)
IMD Conference Series, 2006

DeVore E., Gould A., Koch D., Harman P., “Kepler Mission Education and Public
Outreach” AAS Conference Series 2003, 2006

Harman P., DeVore E., “Astrobiology as a Context for High School Science Teacher
Professional Development” # 882 NAI General Meeting, 2005

Scalice, D., Harman, P., The Astrobiology Education Poster, (2005) #911 Astrobiology,
Vol 5. Number 2.

Tarter J., DeVore E., Pendleton Y., O’Sullivan K., Burke M., Harman P., “Implementing
Voyages Through Time in High School Science Classes” ASP Conference Series, 2005

Tarter J., DeVore E., Pendleton Y., O’Sullivan K., Burke M., Harman P., “Implementing
Voyages Through Time in High School Science Classes” IMD Conference Series, 2004

Harman P., DeVore E., “Astrobiology as a Context for High School Science Teacher
Professional Development” Habitable Worlds, Bioastronomy Conference, 2004

DeVore E., O’Sullivan K., Madfes T., Harman P., Beard M., “Web-based Evaluation in
Curriculum Development: The *Voyages Through Time* Experience” IMD Conference
Series, 2004

Tarter J., et al *Voyages Through Time* Integrated Science Curriculum for High School
Cosmic Evolution, Planetary Evolution, Origin of Life, Evolution of Life, Hominid Evolution and
Evolution of Technology, 2003

Harman, P., DeVore E., Habitats for Life: Voyages Through Time, Proceedings of the Australian-American Fulbright Symposium 2002: "Science Education in Partnership," 2002

Federspiel, N.A., Palm, C.J., Conway, A.B., Conn, L., Hansen, N.F., Altafi, H., Araujo, R., Huizar, L., Rowley, D., Chen, S., Harman, P., Hicks, R., Huerta, M., Mason, S., Siepel, J., Zimmerman, M., Buehler, E., Dunn, P., Gonzalez, A., Kremenetskaia, I., Kim, C., Lenz, C., Li, J., Liu, S., Luros, S., Schwartz, J., Shinn, P., Toriumi, M., Vyotskaia, V., Walker, M., Yu, G., Ecker, J., Theologis, A. and Davis, R.W. Entrez Nucleotides Arabidopsis thaliana chromosome BAC F3N23 genomic sequence Accession: AC008017 1999
<http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?CMD=Display&DB=nucleotide>

Talks, Short Courses and Workshops Conducted:

- Visible and Invisible Light in 3-Dimensional Learning Settings, NSTA and CSTA 2015 – present
- Multi-wavelength Astronomy, 2009 to present
- NASA SOFIA: Infrared Astronomy and Cosmic Origins, 2009 to present
- AAS and DPS Student Events at conferences, 2008 to present
- NASA NEWEST, Explorer School and MUREP workshops at NASA Ames, 2003 to present
- High school and middle school classroom presentations, various topics, 1999 – present
- Presentation to NASA Astrophysics Advisory Committee, July 2017
- Girls Go To Mars pilot test workshops, 2013 – 2016
- Bay Area Earth Science Institute (BAESI), proposed and delivered workshops, 2013 – 2014
- Resource Area For Teachers (RAFT), proposed and delivered workshops, 2001- 2004
- NASA's *Kepler Mission: Discovering Extrasolar Planets*, 2006 to 2015
- Voyages Through Time, workshops and short courses, CSTA and NSTA, 1999 to 2014
- Astrobiology Adventure workshops for Junior Girl Scouts, 2005 – 2009
- Colorado Space Science Teachers Summit, 2006 - 2008
- National Girls Collaborative, Astrobiology for Girls, 2007
- Cosmic Evolution educator workshops, AAPT, 2005
- Origin of Life, educator workshops, and short courses, CSTA, NSTA, 1999 to 2014
- Origin of Life, educator workshop, NOBCChe Educator Workshop, 2006
- Evolution of Life, educator workshops and short courses, NABT, CSTA and NSTA, 1999 - 2014
- Hominid Evolution, educator workshops and short courses, CSTA, and NSTA, 1999 to 2014
- Life in the Universe Series short courses and workshops, CSTA and NSTA, 1999 to 2004
- Hominid Evolution, educator workshops and short courses, NABT, 2000 to 2014
- Life in the Universe Series short courses and workshops, NABT, 2000 to present
- The Evolution Project, short courses for educators, NABT, 2000 to 2014
- What is SETI? public, science center and school talks 1999 - present
- Biotechnology educator workshops, CSTA and San Mateo County Office of Education 1998 - 99