



FOR IMMEDIATE RELEASE

Astronomical Society of the Pacific Announces 2021 Awards for Astronomy Research and Education

San Francisco, California – August 24, 2021 The Astronomical Society of the Pacific (ASP), one of the oldest, innovative, and respected organizations in the U.S. dedicated to increasing the understanding and teaching of astronomy, is honored to announce the recipients of its 2019 awards for excellence in astronomy research and education.

Join us in celebration of these prestigious awards at the 2021 ASP Awards Gala (A Virtual Presentation) on November 19, 2021.



Robert J. Trumpler Award

The **Robert J. Trumpler Award** is presented to a recent recipient of a PhD degree whose research is considered unusually important to astronomy. The ASP is presenting awards both for 2020 and 2021 this year.

The recipient of the **2020 Robert J. Trumpler Award** (presented in 2021) is **Dr. Gudmundur Kari Stefansson**, who completed his PhD in astronomy at The Pennsylvania State University in 2019. His dissertation, *“Extreme Precision Photometry and Radial Velocimetry from the Ground,”* is described by one of his nominators as “the broadest and deepest demonstration of expertise in precision astronomical instrumentation I have seen.” Another nominator called Stefansson “a multidimensional talent who has demonstrated ability and depth in astronomical instrument hardware, data analysis, and observational astrophysics.” As a testament to the importance of his work, Dr. Stefansson was awarded a NASA Earth and Space Science Fellowship, a Leifur Eiríksson Foundation Fellowship, and is currently a Henry Norris Russell Postdoctoral Fellow at Princeton University.

Stefansson’s thesis characterized and developed a revolutionary innovation for achieving high precision differential photometry from the ground where the atmosphere and limitations inherent in the astronomical detectors used make precise measurements of stellar brightness exceedingly difficult. In differential photometry, the brightness of a star is simultaneously compared to the brightness of other nearby stars. Stefansson’s Engineered Diffuser—a nanofabricated piece of optic—is capable of molding the image of a star into a broad and stabilized shape on the detector, substantially improving such brightness measurements. One nominator called his breakthrough “*startling in its simplicity,*” adding that “*this operational simplicity is very important since it allows widespread adoption.*” Currently, Stefansson’s Engineered Diffuser is being used by an increasing number of telescopes around the world to better study extrasolar planets including at the Apache Point Observatory, Mt. Palomar Observatory, the Nordic Optical Telescope, and by the Las Cumbres Network.



Robert J. Trumpler Award (2021)

The **Robert J. Trumpler Award** is presented to a recent recipient of a PhD degree whose research is considered unusually important to astronomy. The ASP is presenting awards both for 2020 and 2021 this year.

The recipient of the **2021 Robert J. Trumpler Award** is **Dr. Jane Huang**, who earned her PhD at Harvard University in 2020. Her dissertation, “Rings and Spirals in Protoplanetary Disks: the ALMA View of Planet Formation,” was described by one nominator as an *“iconic work, masterfully done, by a student who is writing her ticket to the top of a fast-growing field.”* Another called her dissertation “a once-in-a-decade thesis in millimeter astronomy as well as in protoplanetary disks and planet formation studies.”

Dr. Huang’s research took advantage of the sensitivity and precision of the Atacama Large Millimeter/Submillimeter Array (ALMA) to image protoplanetary disks with amazing detail to uncover the surprising amount of substructure inside. These ubiquitous structures, which include multiple rings, spirals, and other features, are images of new solar systems being formed. Huang’s work further revealed how the radial gas and dust substructures are key to understanding the formation and chemical composition of young planets. Her landmark work will help theorists develop better models of planet formation and inform how researchers will use the next generation of infrared and optical instruments to study distant solar systems as they form.

She has also received the 2020 Robert L. Brown Outstanding Dissertation Award administered by the Associated Universities Inc. (AUI) and the National Radio Astronomy Observatory (NRAO) for new observational data obtained at any AUI operated facility considered to be of an exceptionally high scientific standard value and impact within and beyond the area of study. Dr. Huang is currently a NASA Hubble Fellowship Program Sagan Fellow at the University of Michigan.



Klumpke-Roberts Award

Awarded to an individual or individuals who have made outstanding contributions to the public understanding and appreciation of astronomy, the **Klumpke-Roberts Award** for 2021 goes to **Lars Lindberg Christensen**, Head of Communications, Education and Engagement at National Science Foundation's NOIRLab for more than 30 years in bringing science to the public and increasing its awareness of the universe and its role in human understanding.

Christensen's leadership in the field of astronomy communication to the public began with a keen interest in astronomy and vision for science communication. By spearheading the communication and education of large science organizations, such as the European Space Agency's Hubble operation, the European Southern Observatory (ESO) and the International Astronomical Union (IAU), and his efforts of building a global community of astronomy communicators through outreach, technology, and global connections, Christensen has given people the ability to make educated decisions "regardless of nationality, age, gender or socio-economic status."

Through his career he has been a proponent of open public access for instance by using and promoting *Creative Commons* licensing global metadata standards and *Wikimedia Commons* as global repositories of tens of thousands of images, videos planetarium shows and other products from the Hubble Space Telescope, ESO, IAU, and major research facilities, such as National Astronomical Observatory of Japan (NAOJ) and the Institute of Space and Astronautical Science (ISAS/JAXA), in multiple languages and at an approachable level.

All the material produced by Christensen whether it be for planetarium shows, or web pages, print, or social media, television or radio, used his methodology of innovative strategies and technology, forming the best team to produce high quality materials. His ability to produce the most efficient methods of communicating science has created lighthouses of public understanding and advanced the standing of educational and public outreach.

Adding to his accomplishments as Press Officer at the IAU for more than 15 years, Christensen also focused on the developing world. One nominator praised "*Lars' organizational and networking skills were exemplary in dealing with groups in the many countries. He has a gift for presenting education in terms of the local culture, so it makes sense for people to understand.*"

As author of a dozen books, more than 200 publications, video producer of documentaries and planetarium shows, international project leader, and local grass roots developer, he has also contributed to public education and science awareness leading him to one of his largest accomplishments as the global manager of the IAU's International Year of Astronomy 2009. Planetariums, network television, and top vodcasts, have all benefited from Christensen's innovative approach ...and as commented by a nominator, "*...speaks volumes to Lars vision of making scientific educational material of the highest quality available, for free, to anybody in the world with a computer, an internet connection, and the desire to learn more about astronomy.*"



Thomas J. Brennan

The **Thomas J. Brennan Award** is given to an individual demonstrating excellence in the teaching of astronomy at the high school level in North America. **Christine Hirst Bernhardt**, Albert Einstein Distinguished Educator Fellow, mentor, curriculum developer, and education leader, receives the Thomas J. Brennan Award for demonstrating excellence in the teaching of astronomy at the high school level in North America.

Bernhardt's enthusiasm and passion for all things astronomy has led her to be a role model to students in the classroom, mentor to her fellow colleagues, and astronomy ambassador in the community and abroad. Her dedication and enthusiasm have no doubt created future educators, researchers, and lifelong astronomers.

As a teacher, she has developed a signature, hands-on high-altitude ballooning project where students design experiments to be carried into the stratosphere and launch from the school's outdoor stage. She has mentored students in her astronomy club, founded a community space program bringing to them activities, telescopes, and NASA speakers, volunteered her time at elementary schools and with STEM programs focused on girls, and has mentored students how to write science proposals aboard both ISS and NASA SOFIA missions and participate in her student space symposium. A former student and UCSB Physics Major confirms – *"I can say with complete certainty that I wouldn't be where I am today, as an astrophysics major pursuing what I love, without her influence and inspiration."*

Enthusiasm reaches far beyond the classroom as Bernhardt also develops curriculum, both as a teacher and as an ambassador connecting teachers to resources through developing curriculum and on the newly formed National Astronomy Education Committee through the International Astronomical Union. Her educational leadership includes designing and facilitating a program to integrate Earth and Environmental concepts into Next Generation Science Standards (NGSS) including best practices, pedagogy, and progression toward full implementation of NGSS in the greater Los Angeles area.

Bernhardt, as a National Astronomy Education Coordinator, plans to develop impactful professional development for teachers wishing to implement astronomy-based lessons, and connecting teachers to unique learning opportunities in astronomy.



About the ASP

The Astronomical Society of the Pacific (ASP), established in 1889, is a 501c3 nonprofit organization whose mission is to use astronomy to increase the understanding and appreciation of science and to advance science and science literacy. The ASP connects scientists, educators, amateur astronomers and the public together to learn about astronomical research, improve astronomy education, and share resources that engage learners of all kinds in the excitement and adventure of scientific discovery. Current ASP programs and initiatives support college faculty, K-12 science teachers, amateur astronomy clubs, science museums, libraries, park rangers, and girl scouts to name a few.

Through its annual awards, ASP recognizes achievement in research, technology, education, and public outreach. The awards include the ASP's highest honor, the Catherine Wolfe Bruce Gold Medal awarded since 1898 for a lifetime of outstanding research in astronomy. The Bruce Medal has gone to some of the greatest astronomers of the past century, including Arthur Eddington, Edwin P. Hubble, Subrahmanyan Chandrasekhar, and Vera Rubin. The ASP also presents the Klumpke-Roberts Award for outstanding contributions to the public understanding and appreciation of astronomy. Awardees include Carl Sagan, Isaac Asimov, and the Hubble Heritage Project.

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