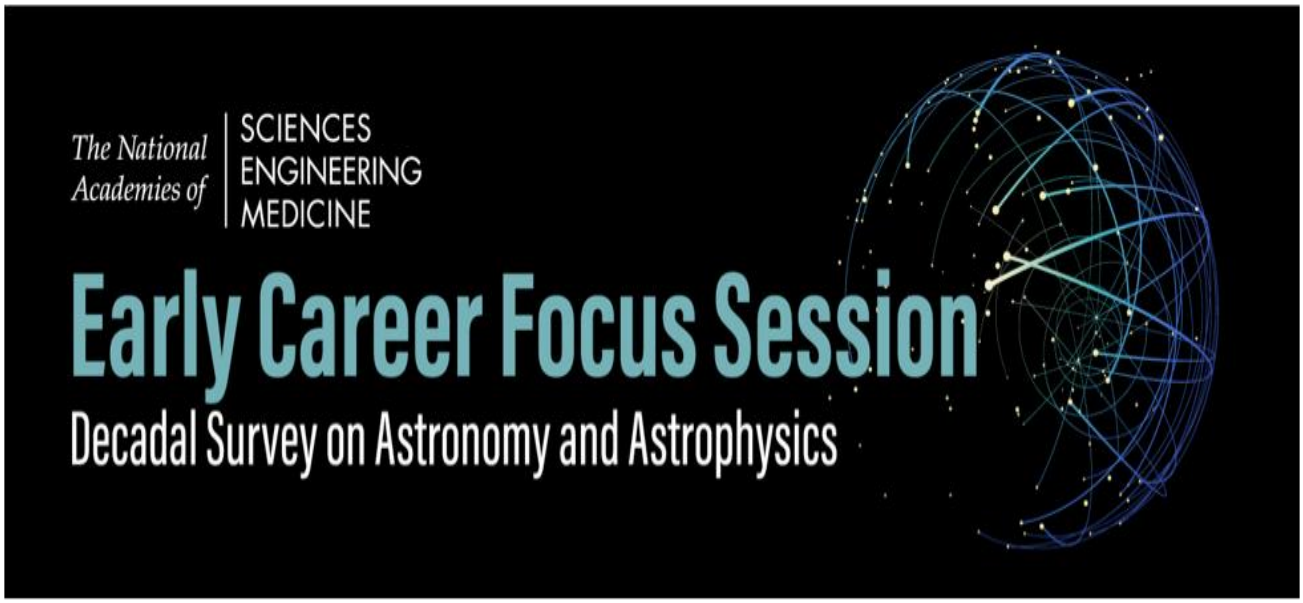

AGENDA BOOK

October 8-9, 2018

Washington, DC

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The National Academies of
SCIENCES • ENGINEERING • MEDICINE

October 8, 2018

Dear Delegate:

Welcome to the National Academies of Sciences, Engineering, and Medicine! I personally want to thank you for participating in this first-ever Early Career Focus Session for the Decadal Survey on Astronomy and Astrophysics 2020.

The National Academies was created in 1863 with a core mission of advising decision-makers on critical issues impacting the nation with independent nonpartisan, objective guidance. Through the Decadal Survey on Astronomy and Astrophysics 2020, the Academies' has been charged with the task to conduct a study that will generate consensus recommendations to implement a comprehensive strategy and vision for a decade of transformative science at the frontiers of astronomy and astrophysics.

We are hosting this focus session with the primary goal of engaging early career scientists in the decadal survey planning and input process by assembling astronomers and astrophysicists, National Academy of Sciences members, and the National Academies staff to exchange perspectives on past and future decadal surveys.

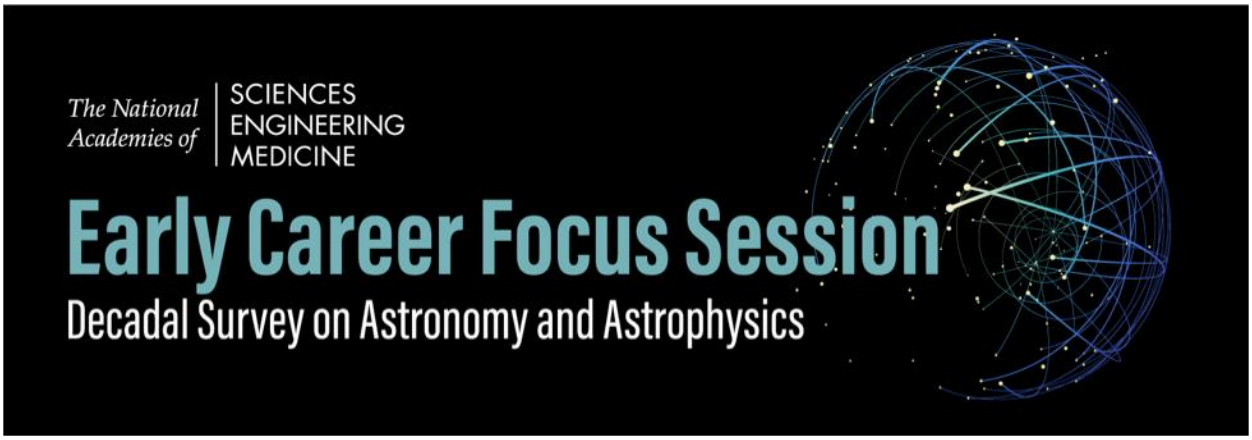
As delegates of the Early Career Focus Session, your contributions will play a critical role and directly feed in to into the Decadal Survey in Astronomy and Astrophysics. We are excited that the next generation of leaders in the astronomy and astrophysics community has taken such a strong keen interest in the decadal survey process.

On behalf of The National Academies, I urge you to take this opportunity to ensure that as the generation that will inherit the decisions that are being cast today, your ideas and visions are considered in this next decadal survey.

Yours sincerely,

Marcia McNutt

Marcia McNutt
President
National Academy of Sciences



ABOUT THE EVENT

This event, sponsored by the Heising-Simons Foundation, will engage early career astronomers and astrophysicists in the decadal survey planning and input process by assembling early career scientists, National Academy of Sciences members, and the National Academies staff to exchange perspectives on past and future decadal surveys. Participants will participate in a two-fold approach. After acquiring a thorough understanding of past and present astronomy and astrophysics decadal survey processes through information sessions, participants will participate in group discussions to provide their perspectives and suggestions concerning the decadal survey process and their potential roles in it.

Monday, October 8th

Room 100 — Keck Center
500 Fifth Street NW — Washington, DC 20001

8:00 – 9:00 a.m.	*Registration and Breakfast Available Outside Meeting Room*	
9:00 – 9:30 a.m.	***Welcome, Overview of Focus Session, Introductions****	Emily Moravec, University of Florida
	Premise of Event and Structure *(15 mins)* Introductions *(15 mins)*	
9:30 – 10:30 a.m.	***Session 1: Science and Technology Policy for Astronomers by an Astronomer****	Ashlee Wilkins, AAS Bahcall Fellow
10:30 – 11:00 a.m.	***Session 2: The National Academies****	Jim Lancaster, BPA
	Overview: History, Mission, Implementation, Historic Reports, Report Process *Presentation 20 mins / Q&A 10 mins*	
11:00 – 11:15 a.m.	*Coffee Break*	
11:15 a.m. – 12:30 p.m.	***Session 3: The Decadal Survey****	Marcia Rieke, University of Arizona
	History, Purpose, and General Structure (Committee Selection, Meetings, Community Input, White Papers) *Presentation 55 mins / Q&A 20 mins*	

12:30 – 1:30 p.m.	*Lunch Available in the Cafeteria* Lunch tickets provided.	
1:30 – 4:00 p.m.	***Session 4: Decadal Discussion***	Emily Moravec, University of Florida
1:30-1:45	The Charge: Questions to be Discussed	
1:45-2:45	Small Group Discussion	
2:45-3:00	*Coffee Break*	
3:00-4:00	Report Back and Large Group Discussion	
4:00 – 5:45 p.m.	***Session 5: Career Preparation and Outlook Discussion***	Emily Moravec, University of Florida
4:00-4:10	The Charge: Questions to be Discussed	
4:10-5:00	Small Group Discussion	
5:00-5:45	Report Back and Large Group Discussion	
5:45 p.m.	*Adjourn for the Day (Dinner on your own)*	

Tuesday, October 9th

Room 100 — Keck Center
500 Fifth Street NW — Washington, DC 20001

8:00 – 9:00 a.m.	*Breakfast Available Outside Meeting Room*	
9:00 – 10:20 a.m.	***Session 6: White Papers***	Lee Hartmann, University of Michigan
9:00-9:20	What is a White Paper?	
9:20-10:00	Previous White Papers. Small Group Discussion	
10:00-10:20	Speaker Insight and Advice	
10:20 – 10:40 a.m.	*Coffee Break*	
10:40 – 11:40 a.m.	***Session 7: Vision Casting***	Emily Moravec, University of Florida
10:40-10:50	The Charge: Questions to be Discussed	
10:50-11:20	Small Group Discussion	
11:20-11:50	Report Back and Large Group Discussion	
11:50 a.m. – 12:15 p.m.	***Concluding Remarks***	Emily Moravec, University of Florida
12:15 – 1:15 p.m.	*Lunch Available in the Cafeteria* Lunch tickets provided.	
1:15 p.m.	*Meeting Adjourns*	

VIDEOTAPING OF THE MEETING

Portions of this meeting will be videotaped by the National Academies of Sciences, Engineering, and Medicine ("The Academies"). Please be aware that by attending the meeting, you consent to your voice and likeness being videotaped for use on the Committee's website and in any media now known or hereafter devised in perpetuity, and you release The Academies from any liability due to such usage.

Table 1	Name	Note Taker	Table 2	Name	Note Taker
Facilitator	Chris McKee		Facilitator	Scott Ransom	
Graduate Student	Ryan Norris	Session 4	Graduate Student	Wanda Feng	
Postdoc	Michelle Ntampaka	Session 5	Postdoc	Melodie Kao	Session 4
Postdoc	Kirit Karkare		Postdoc	Alexandra Amon	
Postdoc	Miao Li	Session 7	Postdoc	Michael Lund	
Early Career	Andrew Wetzel		Early Career	Knicole Colon	Session 5
Early Career	Allison Kirkpatrick		Early Career	Casey DeRoo	
Early Career	Nimish Hathi		Early Career	Giada Arney	Session 7
Table 3	**Name**	**Note Taker**	**Table 4**	**Name**	**Note Taker**
Facilitator	Tom Greene		Facilitator	Lynne Hillenbrand	
Graduate Student	Travis Gabriel		Graduate Student	Emily Moravec	
Postdoc	Jacqueline McCleary		Postdoc	Jared Rice	Session 4
Postdoc	Krista Lynne	Session 4	Postdoc	Paul La Plante	
Postdoc	Joseph Simon		Postdoc	Rachael Roettenbacher	Session 5
Early Career	Chanda Prescod-Weinstein	Session 5	Early Career	Jamie Lomax	
Early Career	Kevin Stevenson	Session 7	Early Career	Robyn Sanderson	Session 7
Early Career	Darcy Barron		Early Career	Andres Plazas Malagon	

Table 5	Name	Note Taker	Table 6	Name	Note Taker
Facilitator	Neal Evans		Facilitator	Crystal Brogan	
Graduate Student	Rebecca Nevin	Session 4	Graduate Student	Eliad Peretz	Session 4
Postdoc	Ian Czekala		Postdoc	Erika Hamden	
Postdoc	Rahul Datta		Postdoc	Michael Florian	Session 5
Postdoc	Allison Youngblood		Postdoc	Erin Kara	
Early Career	Anthony Pullen	Session 5	Early Career	Keith Hawkins	
Early Career	Elisabeth Mills	Session 7	Early Career	Todd Veach	Session 7
Early Career	Katherine Follette		Early Career	Amy Bender	
Table 7	**Name**	**Note Taker**	**Table 8**	**Name**	**Note Taker**
Facilitator	Marcia Rieke		Facilitator	Lee Hartmann	
Graduate Student	Christine O'Donnel	Session 4	Graduate Student	Kirsten Hall	
Postdoc	Rebecca Jensen-Clem		Postdoc	Keri Hoadley	Session 4
Postdoc	William Armentrout	Session 5	Postdoc	Mehmet Alpaslan	
Postdoc	Joanna Bridge		Postdoc	Edward Montiel	Session 5
Early Career	Zeeshan Ahmed	Session 7	Early Career	Jarron Leisenring	
Early Career	Amy Kimball		Early Career	Alina Kissling	Session 7
Early Career	Nicholas Nelson		Early Career	Eric Bellm	

Early Career Focus Session for the Astro2020 Decadal Survey Delegate List

Name	Affiliation
Zeeshan Ahmed	SLAC National Accelerator Laboratory
Mehmet Alpaslan	New York University
Alexandra Amon	Stanford University/SLAC
Will Armentrout	Green Bank Observatory
Giada Arney	NASA Goddard Space Flight Center
Darcy Barron	University of New Mexico
Eric Bellm	University of Washington
Amy Bender	Argonne National Laboratory
Joanna Bridge	University of Louisville
Knicole Colon	NASA Goddard Space Flight Center
Ian Czekala	UC Berkeley
Rahul Datta	NASA Goddard Space Flight Center
Casey DeRoo	University of Iowa
Wanda Feng	Harvard-Smithsonian Center for Astrophysics/ASU
Michael Florian	Observational Cosmology Lab/NASA GSFC
Katherine Follette	Amherst College
Travis Gabriel	Arizona State University
Kirsten Hall	Johns Hopkins University
Erika Hamden	California Institute of Technology
Nimish Hathi	Space Telescope Science Institute
Keith Hawkins	University of Texas at Austin
Keri Hoadley	California Institute of Technology
Rebecca Jensen-Clem	UC Berkeley
Melodie Kao	Arizona State University
Erin Kara	University of Maryland
Kirit Karkare	University of Chicago
Alina Kiessling	Jet Propulsion Laboratory
Amy Kimball	National Radio Astronomy Observatory
Allison Kirkpatrick	University of Kansas
Paul La Plante	University of Pennsylvania
Jarron Leisenring	University of Arizona
Miao Li	Center for Computational Astrophysics, Flatiron Institute
Jamie Lomax	University of Washington
Mike Lund	Vanderbilt University
Jacqueline McCleary	Jet Propulsion Laboratory
Elisabeth Mills	Boston University
Edward Montiel	UC Davis
Emily Moravec	University of Florida
Nicholas Nelson	California State University, Chico

Rebecca Nevin	University of Colorado, Boulder
Ryan Norris	Georgia State University
Michelle Ntampaka	Harvard University
Christine O'Donnel	University of Arizona
Eliad Peretz	NASA
Andres Plazas Malagon	Astronomical Society of the Pacific
Chanda Prescod-Weinstein	University of Washington
Anthony Pullen	New York University
Jared Rice	Texas State University
Rachael Roettenbacher	Yale University
Robyn Sanderson	University of Pennsylvania
Joseph Simon	Jet Propulsion Laboratory
Krista Lynne Smith	Stanford University
Kevin Stevenson	Space Telescope Science Institute
Todd Veach	Southwest Research Institute
Andrew Wetzel	UC Davis
Allison Youngblood	Universities Space Research Association

Speaker and Facilitator Biographies

CRYSTAL BROGAN became a staff member of the North American ALMA Science Center at the NRAO headquarters in Charlottesville, Virginia, where she is currently a tenured astronomer. She is presently the North American ALMA Deputy Program Scientist, and is also visiting faculty at the University of Virginia. She obtained her Ph. D. in 2000 from the University of Kentucky. Her thesis was on the role magnetic fields play in the process of star formation, which she studied using the Zeeman effect to measure magnetic field strengths in radio wavelength HI and OH absorption lines and OH masers. Subsequently, she was a Jansky Fellow in Socorro, New Mexico, from 2000-2003, and then was the James Clerk Maxwell Telescope Fellow at the University of Hawaii from 2003-2006. Her Jansky Fellowship research included supernova remnants, supernova remnant/molecular cloud interactions, and triggered star formation. Later in Hawaii, she began studying the formation of massive stars at very high angular resolution in the (sub)millimeter, research which continues today, along with several other diverse lines of research including mid-IR spectroscopy of massive protostars and maser emission from extragalactic super star clusters. In 2008, she gave an invited plenary talk at the Austin AAS meeting entitled "Searching for the Secrets of Massive Star Birth." She has used most of the radio to submillimeter telescopes in the world including the VLA, ATCA, VLBA, GMRT, MERLIN, JCMT, CSO, GBT, BIMA, CARMA, and SMA. She has also been the PI or co-PI on several successful Spitzer, SOFIA, and Chandra proposals. Dr. Brogan has served on several advisory panels and committees including the ALMA North American Science Advisory Committee, the Astro2010 RMS Program Prioritization Panel, and is a member of the AAS executive committee for the Laboratory Astrophysics Division.

MIA BROWN joined the Space Studies Board as a Research Associate in 2016. She comes to SSB with experience in both the civil and military space sectors and has primarily focused on policies surrounding US space programs in the international sector. Some of these organizations include NASA's Office of International and Interagency Relations, Arianespace, the United Nations Office for Disarmament Affairs (Austria), and the U.S. Department of State. From 2014 to 2015, Mia was the Managing Editor of the International Affairs Review. She received her M.A. in International Space Policy from the Space Policy Institute at the Elliott School of International Affairs. Prior to entering the Space Policy Institute, Mia received her M.A. in Historical Studies from the University of Maryland-Baltimore County (UMBC), where she concentrated in the history of science, technology, and medicine and defended a thesis on the development of the 1967 Outer Space Treaty.

NEAL EVANS is Edward Randall, Jr. Centennial Professor, emeritus, at the University of Texas at Austin, Astronomy Department. He is a member of the American Astronomical Society, the International Union of Radio Science, and the International Astronomical Union. He is the Oort Professor at Leiden University in 2014 and he was a distinguished visiting fellow at KASI, the Korean Astronomy and Space Science Institute. He is a fellow of the American Association for the Advancement of Science and a member of the American Astronomical Society, the International Union of Radio Science, and the International Astronomical Union. Dr. Evans served on the MMA Advisory Committee (NRAO), the NRAO Visiting Committee (AUI) as a member and the chair, the ALMA Scientific Advisory Committee as both a member and the chair, and the ALMA Program Advisory Committee, as a member then chair. He received a Ph.D. in physics from the University of California, Berkeley. His efforts with the National Academies' includes chair of the Astro2010 Panel on Radio, Millimeter, and Submillimeter from the Ground, as a member on the Committee on Review of Progress in Astronomy and Astrophysics toward the Decadal Vision, and the Committee on Panel Radio and Submillimeter-wave Astronomy, and as a member on the Committee on Astronomy and Astrophysics.

THOMAS GREENE is an astrophysicist in the Space Science and Astrobiology Division at NASA Ames Research Center. He is a co-investigator on the NIRCam and MIRI science instruments of the James Webb Space telescope and also conducts observational studies of exoplanets and young stars. While at NASA Ames he has served as the Director of the Ames Center for Exoplanet Studies, the SOFIA Project Scientist, and the Chief of the Astrophysics Branch. Before joining NASA, he worked at the Lockheed Martin Advanced Technology Center on NASA astrophysics missions. Prior to that, Dr. Greene was on the faculty of the University of Hawaii where he was a support astronomer and later Director of the NASA Infrared Telescope Facility (IRTF). He received his Ph.D. in astronomy from the University of Arizona. Dr. Greene served as a member on the National Academies' Astro2010 Panel on Electromagnetic Observations from Space and is currently on the CAA.

COLLEEN HARTMAN is the Director of the Aeronautics and Space Engineering Board (ASEB) and the Space Studies Board (SSB) of the U.S. National Academies of Sciences, Engineering, and Medicine. Dr. Hartman has served in various senior positions, including Acting Associate Administrator, Deputy Director of Technology and Director of Solar System Exploration at NASA's Science Mission Directorate and Deputy Assistant Administrator at the National Oceanic and Atmospheric Administration. Dr. Hartman was instrumental in developing innovative approaches to powering space probes destined for the farthest reaches of the solar system, including in-space propulsion and nuclear power and propulsion. She also gained administration and congressional approval for an entirely new class of competitively selected missions called "New Frontiers," to explore the planets, asteroids and comets in the Solar System. Dr. Hartman has built and launched balloon and spacecraft payloads, worked on robotic vision, and served as Program Manager for dozens of space missions, including the Cosmic Background Explorer (COBE). Data from the COBE spacecraft gained two NASA-sponsored scientists the 2006 Nobel Prize in Physics. Dr. Hartman earned a bachelor's degree in zoology from Pomona College in Claremont, Calif., a master's in public administration from the University of Southern California, and a doctorate in physics from the Catholic University of America. She started her career as a Presidential Management Intern under Ronald Reagan. Her numerous awards include the Claire Booth Luce Fellowship in Science and Engineering, the NASA Outstanding Performance Award, and multiple Presidential Rank Awards, one of the highest awards bestowed by the President of the United States to senior executives.

LEE W. HARTMANN is the Leo Goldberg Collegiate professor of Astronomy at the University of Michigan. He has worked as an astrophysicist at the Smithsonian Astrophysical Observatory and was a vice-president of the American Astronomical Society. Dr. Hartmann's research interests include the formation of stars and star clusters, molecular cloud structure and dynamics, protostellar accretion, evolution of protoplanetary disks and planet formation, and mass function of stars. Dr. Hartmann is a fellow of the American Association for the Advancement of Science. He received his Ph.D. in astronomy from the University of Wisconsin System. Dr. Hartmann has served on three National Academies' committees: chair of the Astro2010 Panel on Planetary Systems and Star Formation, member of the U.S. National Committee for the International Astronomical Union, and member of the CAA.

JAMES C. LANCASTER is the director of the BPA and director of the National Materials and Manufacturing Board. He joined the BPA as a program officer in 2008 and has been responsible staff officer for a number of studies, including the decadal survey on nuclear physics—Nuclear Physics: Exploring the Heart of the Matter, An Assessment of the Science Proposed for the Deep Underground Science and Engineering Laboratory (DUSEL), Research at the Intersection of the Physical and Life Sciences, Frontiers in Crystalline Matter: From Discovery to Technology, and Selling the Nation's Helium

Reserve. Prior to joining the BPA, Dr. Lancaster served on faculty at Rice University, where he taught introductory physics to science and engineering students, and as a staff researcher, where he participated in experimental investigations of the interactions of highly excited atoms with electromagnetic pulses and surfaces. In addition to his M.A. and Ph.D. degrees in physics from Rice University, Dr. Lancaster holds a B.A degree in economics from Rice University and a J.D. degree from the University of Texas School of Law. Prior to entering the field of physics, Dr. Lancaster practiced law for more than 12 years, specializing in the financial structuring and restructuring of businesses.

LYNNE HILLENBRAND is a professor of astronomy and a previous executive officer for astronomy at the California Institute of Technology (Caltech). Her research interests are in star formation, young stars stellar clusters, pre-main sequence evolution, accretion and outflow, planet formation, young extrasolar planets, and debris disks. Dr. Hillenbrand's engages with observations and data analysis from x ray to millimeter wavelengths. Over the past decade, she has served as chair and member of the U.S. National Committee for the International Astronomical Union (IAU), on NASA's WFIRST Independent External Technical/Management/Cost Review (WIETR), NASA's Cosmic Origins Program Assessment Group (COPAG), on the board of directors of the Association of Universities for Research in Astronomy (AURA), and on the Board of Directors of the Astronomical Society of the Pacific (ASP). She is currently a member-at-large of the Astronomy Section for the American Association for the Advancement of Science, and on the National Science Foundation's Mathematics and Physical Sciences Science Advisory Committee, as well as science advisory groups for the W.M. Keck Observatory and the Las Cumbres Observatory. Dr. Hillenbrand received her Ph.D. in astronomy in 1995 from the University of Massachusetts. Her service with the National Academies' includes executive officer for the Astro2010 Decadal Survey, ``New Worlds, New Horizons," and was on the subsequent Panel on Implementing Recommendations from New Worlds, New Horizons Decadal Survey, as well as the Panel on A Strategy to Optimize the U.S. OIR System in the Era of the LSST. On the 2001 astronomy and astrophysics decadal survey, she was a member of the Panel on Ultraviolet, Optical, and Infrared Astronomy from Space. Dr. Hillenbrand has also served twice on the CAA, and is a national associate of the U.S. National Academies.

CHRISTOPHER F. McKEE (NAS) is a professor emeritus of physics and of astronomy at the University of California, Berkeley. His research focuses on the theory of the interstellar medium and of star formation. He helped develop the three-phase model of the interstellar medium, which has been widely used to organize and interpret observational data. He is currently carrying out numerical simulations of star formation. During his time at the University of California at Berkeley, Dr. McKee led the establishment of the Theoretical Astrophysics Center at Berkeley and served as its first director. He subsequently directed the Space Sciences Laboratory and served as the chair for the Department of Physics as well as the Interim Dean of Mathematical and Physical Sciences and the Interim Vice Chancellor for Research. Dr. McKee earned his Ph.D. in physics from the University of California at Berkeley. He is a member of the National Academy of Sciences and serves as the NAS Section 12 liaison. He previously served on the Academies' Board on Physics and Astronomy, the Committee on Review of Progress in Astronomy and Astrophysics toward the Decadal Vision, and co-chaired the 2000 astronomy and astrophysics decadal survey. He also serves on the CAA.

EMILY MORAVEC is a Ph.D. candidate in astronomy at the University of Florida. Her research interests include galaxy evolution, galaxy clusters, AGN, and radio galaxies. Beyond research, she strives to foster effective and insightful communication between scientists and the public through public outreach and science policy activities. During the spring of 2018, she was a Christine Mirzayan Science and Technology

Policy Fellow at the National Academies and worked jointly with the Board on Physics and Astronomy and the Space Studies Board. Her primary project while at the Academies was to design and coordinate this Focus Session, which she has continued to do throughout this year.

SCOTT RANSOM is a tenured astronomer with the National Radio Astronomy Observatory (NRAO) in Charlottesville, VA where he studies pulsars and gravitational waves. He is also a Research Professor with the Astronomy Department at the University of Virginia where he has several graduate students and teaches the occasional graduate class. He works on a wide variety of projects involving finding, timing, and exploiting pulsars of various types, using data from many different instruments and at energies from radio waves to gamma-rays. His main focus is on searching for exotic pulsar systems, such as millisecond pulsars and binaries. Once these pulsars are identified, he uses them as tools to probe a variety of basic physics, including tests of general relativity, the emission (and hopefully soon the direct detection) of gravitational waves (as part of the NANOGrav collaboration), and the physics of matter at supra-nuclear densities. Much of his time is spent working on the state-of-the-art signal processing instrumentation, high-performance computing and software that pulsar astronomy requires. Scott was awarded a Hertz Foundation Fellowship for a Ph.D. while in his last year as a cadet at West Point. He completed a Master's degree in astronomy at Harvard and then entered active duty in the U.S. Army as a Field Artillery officer. After almost six years of service, he returned to Harvard and completed his Ph.D. thesis on “New Search Techniques for Binary Pulsars” in 2001. After his Ph.D., he was a Tomlinson postdoctoral fellow at McGill University in Montreal, Canada until 2004 where he moved to NRAO as a staff astronomer. In 2006 he won the Bart J. Bok prize which is awarded for “distinguished research by a Harvard Astronomy Ph.D. recipient under age 35,” and in 2010 he won the American Astronomical Society's Helen B. Warner Prize “for a significant contribution to observational or theoretical astronomy during the five years preceding the award.” He is a fellow of the American Physical Society and has authored or co-authored over 175 refereed publications including 15 in Nature or Science. He was a member of the Academies Astro2010 Panel on Stars and Stellar Evolution Committee.

MARCIA J. RIEKE (NAS) is a Regents’ Professor of Astronomy and an astronomer at the University of Arizona in the Department of Astronomy. Her research interests include infrared observations of galactic nuclei and high-redshift galaxies. Dr. Rieke has served as the deputy PI on the near-infrared camera and multi-object spectrometer for HST (NICMOS), and she is currently the PI for the near-infrared camera (NIRCam) for the James Webb Space Telescope. Dr. Rieke has worked on the Spitzer Space Telescope as a co-investigator for the multiband imaging photometer and as an outreach coordinator and as a member of the Science Working Group. She was also involved with several infrared ground observatories, including the Multiple Mirror Telescope in Arizona. Dr. Rieke is a fellow of the American Academy of Arts and Sciences. She received her Sc.D. in physics from the Massachusetts Institute of Technology. Dr. Rieke just finished a term as co-chair of the NAS Committee on Astronomy and Astrophysics. Her previous National Academies service includes as Program Prioritization Chair of the Astro2010 Decadal Survey Committee, as a member on the 2000 astronomy and astrophysics decadal survey including as a vice chair on the Panel on Ultraviolet, Optical, and Infrared Astronomy from Space, and as a member on the Steering Committee for the Task Group on Space Astronomy and Astrophysics.

Ashlee Wilkins is the John N. Bahcall Public Policy Fellow at the American Astronomical Society (AAS). As the AAS Bahcall Fellow, Ashlee serves as a liaison between federal policymakers and the astronomy community to facilitate robust federal support of science guided by policies and priorities set by scientific community consensus. In 2017, Ashlee earned her Ph.D. in Astronomy from the University of Maryland at College Park, where she studied the atmospheres of giant exoplanets using observations

made by the Hubble Space Telescope. She received her undergraduate degree in Physics and English from Cornell University in 2010.

DISCUSSION QUESTIONS

During each discussion section, the following questions will be discussed at the small group tables. One person will be designated to take notes and one person will be designated to report back to the large group during large group discussion time.

Session 4: Decadal Discussion

1. Content
    a. What topics should a survey such as this cover? What would you like to see included in the next survey?
    b. How would you set priorities? What factors should be considered?
2. Structure
    a. In light of understanding the survey process, what would you like to see a survey such as this accomplish?
    b. How would you structure and conduct this survey?
    c. What was successful about the NWNH survey? What was not successful? What would you have done similarly or differently?
3. Input and dissemination
    a. How would you maximize the engagement across the field in this survey? How would you get everyone engaged? Do you have any ideas on other ways to collect community input aside from what is already being done?
    b. What is the best/most effective way to involve junior members in the survey process (from input to report dissemination)?
    c. What questions would you pose to the astronomical community to gather their input (white paper call, town halls, etc.)?
    d. What is the best way to engage the astronomical community and public once the survey has been produced? (e.g. outreach strategies, social media, etc.)
    e. Would you include input into the survey of any members of society outside the astronomical community?
4. Any other thoughts?

Session 5: Career Outlook and Preparation

1. What is your career outlook? What do you anticipate doing in the future? Where do you see your career going? Are you positive or negative about your plan?
2. How is the job market? Has it evolved throughout the years?
3. From your experiences with the job application process in astronomy thus far, do you have any concerns or suggestions or praises about the process? Are you alerted to your status through the institution or through the rumor mill?
4. How can we better train and prepare early career astronomers (grad students, postdocs, early tenure track) for the next step(s) in their career in astronomy? Same question but for those leaving the field? How would implementation of the change work practically? Who has to have ownership of making these changes? What are the resources needed for the change?
5. Do early career astronomers want to be involved in discussions concerning policy? Do you have opportunities for involvement in various policy issues? If you have had prior opportunities to be involved in such issues, has it been beneficial or burdensome to your career path?

Session 6: White Papers

1. What makes a white paper compelling?
2. What was done well and was effective? What was not effective?
3. Is there anything that you didn't see that you think would be effective?
4. What was the overarching theme of the papers you read?
5. What would you include in the survey from the papers you read?
6. Did the ideas that were conveyed in the white papers you read show up in the decadal? How so? Why do you think they got included or not?
7. What topics do you think are going to come up in Astro2020 white paper submissions?

Session 7: Vision Casting

Where do you see Astronomy going in the future (scientifically, technologically, and professionally)?

1. What would you like to see included in the future of astronomy scientifically, technologically, and professionally?
2. What concerns do you have about the future of Astronomy? Do you have specific suggestions as to what can be done about these concerns? How would implementation of the change work practically? Who has to have ownership of making these changes? What are the resources needed for the change?
3. What trends do you see scientifically, technologically, and professionally in Astronomy?

Example of Notes

How the notes should be labeled and formatted.

Table #4 -- Session 4: Decadal Discussion

1. ***Content***
    a. ***What topics should a survey such as this cover? What would you like to see included in the next survey?***

    Primary Points

    - **Here you will list IN BOLD the main points that your table would like to share with the larger group**
    - **You will be asked to share three points, but we ask that you prepare five main points in case there is overlap with other groups**
    - **When you share your points, please do state if there was overlap in what you discussed with what tables before you have shared**

    All Opinions

    - Here we ask that you take thorough and comprehensive notes of what is discussed at your table
    - Please list every opinion, discussion point, and consensus in this section

    b. ***How would you set priorities? What factors should be considered?***

    Primary Points

    - **Here you will list IN BOLD the main points that your table would like to share with the larger group**
    - **You will be asked to share three points, but we ask that you prepare five main points in case there is overlap with other groups**
    - **When you share your points, please do state if there was overlap in what you discussed with what tables before you have shared**

    All Opinions

    - Here we ask that you take thorough and comprehensive notes of what is discussed at your table
    - Please list every opinion, discussion point, and consensus in this section

2. ***Structure***
    a. ***In light of understanding the survey process, what would you like to see a survey such as this accomplish?***
    b. ***How would you structure and conduct this survey?***
    c. ***What was successful about the NWNH survey? What was not successful? What would you have done similarly or differently?***

About the Event

The focus session will be conducted through a two-fold approach - information and discussion sessions. First, the participants will acquire a thorough understanding of past and present astronomy and astrophysics decadal survey processes and its context through presentations given by experts. The informational topics will provide an overview of science policy, the National Academies, and the decadal survey process and will set the stage for participants to have informed discussions. Second, through group discussion sections, participants will provide their perspectives and suggestions concerning the structure and process of a decadal survey. The participants will divide into smaller groups for discussion, which will be guided by questions provided to them. These subgroups will then reconvene as one group to go over common themes that arose during group discussions.

There will also be a session that is a hybrid of both the information and discussion sessions. This will focus on educating participants on how to write compelling white papers and the process. First, a senior astronomer will discuss the purpose and format of a white paper with the participants. Then participants will investigate and discuss the techniques of the white papers they read in advance and exchange ideas on what makes an effective and influential white paper. In addition, a senior astronomer will provide insight from their experience with writing and reading white papers.

After the focus session in October, a team of three participants will travel to give a summary presentation to the decadal survey committee. The team will be composed of the event organizer, one postdoc, and one early tenure track professional. These three scientists will each be responsible for taking notes of different themes that come up during the group discussions, coagulating and distilling the groups' notes, and submitting the final document as input into the survey. Their travel to give the presentation are covered by the National Academies. The exact date of this presentation is yet to be determined as the decadal survey is still in the planning stage.

Collaboration during the focus session will include online resources. We encourage delegates to bring their laptops and tablets to both days of the event.

Delegates will be required to do the following preparatory readings before the start of the event:

1. NWNH Preface, Executive Summary, Ch 1 & 2, App A, B & E.
2. Summary Chapter of New Worlds, New Horizons: A Midterm Assessment (pgs 1-12).
3. Lessons Learned in Decadal Planning in Space Science: Preface, Ch 1, 2, & 10, Introductory Remarks and paragraph before of chapters 3, 4, & 5.
4. Introductory material concerning the mission and report process of the National Academies
   a. On National Academies website > About Us > The National Academies: An Overview
   b. About Us >Study Process

A few white papers from Astro2010 in your area of research interest.

NOTES