Kathryne J. Daniel

Department of Astronomy & Steward Observatory · University of Arizona
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Education

Johns Hopkins University, Baltimore, MD
Ph.D. in Physics & Astronomy 2015
Advisor: Rosemary F. G. Wyse
M.A. in Physics & Astronomy 2005
Advisor: Karl Glazebrook

Bryn Mawr College, Bryn Mawr, PA
Post-baccalaureate Major in Physics 2002
A.B. in Classical & Near Eastern Archaeology (Honors) 1999

Appointments

University of Arizona, Tucson, AZ
Associate Professor, Department of Astronomy 2022-
Associate Astronomer, Steward Observatory 2022-

Cosmic Explorer
Deputy Director 2022-
Director of Land & Community Partnerships 2022-

Flatiron Institute, New York, NY
Sabbatical Visitor, Center for Computational Astrophysics 2022-2023

Bryn Mawr College, Bryn Mawr, PA
Associate Professor, Department of Physics 2022
Director of Graduate Studies in Physics 2021-2022
Assistant Professor, Department of Physics 2016-2022

Johns Hopkins University, Baltimore, MD
Visiting Research Scientist, Department of Physics & Astronomy 2015-2016

Swarthmore College, Swarthmore, PA
Visiting Assistant Professor, Department of Physics & Astronomy 2015-2016

Towson University, Towson, MD
Lecturer, Department of Physics, Astronomy & Geosciences 2008-2009
Adjunct Faculty, Department of Physics, Astronomy & Geosciences 2006-2008

Statistics

ORCID ID: 0000-0003-2594-8052

21‡ publications, 12 peer reviewed (7 lead author)

72 presentations, 49 invited talks

Currently awarded over $7.5M total in grants; over $3.2M to Daniel

1 prize postdoc; 3 PhD students (7 external); 19 undergraduate theses (6 honors)

Honors & Awards

Research Leadership Institute Fellow, U Arizona	2023-2024
Inaugural Vera Rubin Distinguished Visiting Professor, UCSC	2021
Scialog Fellow - Research Corporation & Heising-Simons Foundation	2019
FAMOUS Award	2016, 2018
AAUW American Dissertation Fellowship	2014-2015
E. J. Rhee Award	2014
NSF Graduate Research Fellow	2011-2014
Rowland Prize for Innovation and Excellence in Teaching	2003
Bryn Mawr College Scholarship	1996-1999

Research Topics

Galactic dynamics & evolution – Nature of spiral structure – Dynamical resonances – Radial migration/mixing of disk stars – Kinematic Structure – Chrono-Chemo-Dynamics – Dynamical chaos & stochasticity – Morphology – Globular cluster dynamics – Modeling – Stellar populations – YSO X-ray emission

Current Grants

PI: Heising-Simons Foundation #2023-4894 — 11/2023-05/2025
'*Society of Indigenous Physicists: Organizational Development*'
$77,050

PI: NSF LIGO Research Support #2308986 — 07/2023-06/2026
'*Collaborative Research: Identifying and Evaluating Sites for Cosmic Explorer*'
$4,464,080 ($1,956,992 to Daniel)

PI: Heising-Simons Foundation #2023-4107 — 01/2024-12/2024
'*Inaugural Gathering of the Society of Indigenous Physicists*'
$167,538

PI: Heising-Simons Foundation #2022-3927 — 09/2022-09/2025
'*Unsolved Problems in Astrophysics: A network to revolutionize our understanding of the Universe through inclusive workplaces and equitable practices*'
$1,735,757 ($393,060 to Daniel; $160,000 for admin & travel; remainder distributed between four additional PIs)

PI: NASA Astrophysics Data Analysis (ADAP) #21-ADAP21-0134 — 01/2022-12/2024
'*Wrinkles in Time: Linking Stellar Ages to Kinematic Ridges*'
$525,745 ($302,990 to Daniel)

co-PI: NSF Astronomy & Astrophysics Research (AAG) #2109234 — 09/2021-08/2024
'*Simulating the Lifecycle of Star Clusters: From birth to death in a cosmological galactic context*'
$522,357 ($148,528 to Daniel)

Professional Activities

Workshops

Interconnections between the Physics of Plasmas and Self-gravitating Systems 2024
Kavli Institute for Theoretical Physics (KITP), Santa Barbara, CA, USA.

Conference for Undergraduate Women in Physics (CUWiP) 2024
Biosphere2, Tucson, AZ, USA. – LOC

Wide-Field Spectroscopy vs Galaxy Formation Theory 2023
Biosphere2, Tucson, AZ, USA. – SOC

Galactic Archaeology with Fundamental Stellar Parameters: Synthesizing the power of accurate ages with distances, chemistry and kinematics, 2021
Aspen Center for Physics (ACP). – ***Lead Organizer***

Dynamics of the Milky Way in the Era of Gaia Summer Workshop, *ACP.* 2018
Discussion leader and organizer for two sessions.
-Equilibrium versus non-equilibrium models for the MW
-Radial mixing, radial heating & cold torquing in the disk

Kavli International Summer Institute for Modeling in Astrophysics: 2014
Gravitational Dynamics, *CITA at University of Toronto*, Toronto, Canada

Galactic Dynamics in the Times of Gaia, *UNAM*, Mexico City, Mexico 2013

GREAT ITN School: Galaxy Modeling, *Institut UTINAM*, 2012
Besançon, France

Summer School for Astro-Computing: Galaxy Simulations, *High* 2010
Performance Astro-Computing Center at UC-Santa Cruz,
Santa Cruz CA, USA

Professional Service

Aspen Center for Physics (ACP) – *General Board Member* 2023-2028

Cosmic Explorer Advisory Committee – *Referee (invited)* 2021

AAS Division for Dynamical Astronomy (DDA) – *Committee (elected)* 2018-2020

NASA Hubble Fellowship Program (NHFP) – *Reviewer* 2020-2021

NASA Astrophysics Theory Program (ATP) – *Panel Reviewer* 2019

Gemini Observatory Fast Turnaround – *Reviewer* 2019-2020

Nature – *Referee*

Monthly Notices of the Royal Astronomical Society (MNRAS) – *Referee*

Astrophysical Journal (ApJ) – *Referee*

Alfred P. Sloan Foundation - Sloan Digital Sky Survey (SDSS) – *Reviewer* 2018

Honors in Astronomy at Swarthmore College on ISM – *Examiner* 2017

Chambliss Astronomy Achievement Student Award – *Judge* 2016-2018

Professional Societies

Society of Indigenous Physicists (SIP) - ***Co-Founder & Co-Director***

American Astronomical Society (AAS)

American Physical Society (APS)

Society for Advancing Chicanos/Hispanics & Native Americans in Science (SACNAS)

Selected Invited Science Talks (*scheduled)

2024	*Colloquium	NASA Goddard Space Flight Center, Greenbelt MD
	*Colloquium	University of Maryland, College Park MD
	*Seminar	SLAC National Accelerator Laboratory, Stanford University, CA
2023	Plenary	AAS 242^{nd} Meeting, Albuquerque NM
	Keynote	15^{th} Edoardo Amaldi Conference on Gravitational Waves, Virtual
2022	Colloquium	UT Austin, Astronomy Dept, Austin TX
	Colloquium	CCA, Flatiron Institute, New York NY
	Colloquium	Yale University, Astronomy Dept, New Haven CT
	Colloquium & Seminar	Dartmouth College, Physics & Astronomy Dept, Hanover NH
	Seminar	Milky Way As a Galaxy II Symposium, SDSS-IV, Virtual
	Seminar	University of Central Lancashire, Dept of Astronomy, Preston UK
2021	Colloquium	UC Santa Cruz, Astronomy Dept, Santa Cruz CA
	Colloquium	University of Wisconsin - Madison, Astronomy Dept, Madison WI
	Colloquium	Steward Observatory & University of Arizona, Dept of Astronomy, Tucson AZ
2020	Colloquium	Wesleyan University, Dept of Astronomy, Middletown CT
	Colloquium	Michigan State University, Dept of Physics & Astronomy, East Lansing MI
	Colloquium	Royal Observatory, Edinburgh University, Edinburgh, Scotland, UK
	Seminar	University of Surrey, Dept of Physics, Surrey, Guildford, UK
	Seminar	CfA - Harvard & Smithsonian, ITC, Cambridge MA
	Colloquium	University of Michigan, Dept of Astronomy, Ann Arbor MI
2019	Seminar	Flatiron Institute, CCA, New York NY
	Seminar & Lecture	UC Davis, Dept of Physics, Davis CA
2018	Seminar	Columbia University, Dept of Astronomy, New York NY
	Seminar	American Museum of Natural History, New York NY
	Talk	*Galactic Rings: Signposts of Secular Evolution in Disk Galaxies*, Tuscaloosa AL, USA
	Colloquium	Haverford College, Physics & Astronomy Dept, Haverford PA
2017	Seminar	Harvard-Smithsonian CfA, Cambridge MA
	Talk	*Thin, Thick and Dark Disks* by the Center for Theoretical Astrophysics & Cosmology, University of Zurich, Ascona, Switzerland

Student Research Supervision & Recognition

Postdoctoral Advisor, *University of Arizona*

Leandro Beraldo e Silva – Fall '23-Spring '27
Barbara Pichardo Future Faculty Fellow (Inaugural)

Graduate Advisor, *University of Arizona*

Sóley Hyman – Fall '22-present
PhD Thesis: *Chaos and noise in simulations of dynamical systems in the Milky Way using Gaia kinematics*

Amy Smock – Fall '22-present
PhD Thesis: *Wrinkles in Time: Characterizing and constraining spiral history in the Milky Way using Gaia kinematics*

Graduate Advisor, *Bryn Mawr College*

Amy Smock – Spring '18-Fall '22
Awards: Carland Fellowship 2021-2022

Olivia McAuley – Fall '16-present
PhD Thesis: *A Migrating Cluster: Stable orbits in NGC 6791 supported by the L4/5 of a slowing Galactic bar*
MA Spring '23
Awards: (1) Dean's Fellowship 2022-23; (2) AAWIP Summer Fellowship 2021; (3) Dean's Fellowship 2019-2020, (4) Travel Fellowship ($3,000) or the 2019 International School for Space Science in l'Aquila, Italy; (5) Fermilab & NSF Travel Award to attend the 2016 National Society of Black Physicists (NSBP) Conference

External Graduate Mentorship

Himansh Rathore – PhD in Astronomy '27 (expected), *U Arizona*
PhD Advisor: Gurtina Besla

Jenny Quinn – PhD in Physics '27 (expected), *UC Merced*
PhD Advisor: Sarah Loebman

Rayna Rampalli – PhD in Physics & Astronomy '26 (expected), *Dartmouth College*
PhD Advisor: Elisabeth Newton

Rachel McClure – PhD in Astronomy '24 (expected), *University of Wisconsin, Madison*
PhD Advisor: Elena D'Onghia

Carrie Filion – PhD in Physics & Astronomy '24 (expected), *Johns Hopkins University*
PhD Advisor: Rosemary F. G. Wyse

Tigran Khachaturyants – PhD in Astronomy '22, *University of Central Lancashire*
PhD Advisor: Victor P. Debattista

Moiya McTier – PhD in Astronomy '21, *Columbia University*
PhD Advisor: Kathryn V. Johnston

Undergraduate Research & Theses, *University of Arizona*

Shambhavi Srivastava '25
Project: *Radial migration from shearing spirals*

Undergraduate Research & Theses, *Bryn Mawr College*

Ellie Hughes '23 – PhD candidate at **MIT**
Project: *Can supernova feedback cause star clusters to become gravitationally unbound?* **(Honors)**

Julia Moylan '23 – Senior Thesis: *The effect of supernova feedback on gravitationally bound star clusters*

Emmy Wisz '23 – Senior Thesis: *Searching for Observational Traces of Spiral Arm Driven Radial Migration in Galaxies* **(Honors)**

Genevieve Love '22 – Senior Thesis: *Redistribution of Mass in Spiral Galaxies from Dynamical Resonances* **(Honors)**

Morgan Fernandez '21 – Senior Thesis: *Decolonizing Physics*

Irene Lin '20 – PhD candidate at **Columbia University**
Senior Thesis: *Resonant Effects from Spiral Arms on Stellar Kinematics* **(Honors)**

Fiona McCluskey '19 – PhD candidate at **UC-Davis**
Senior Thesis: *Resonating with the Stars: Constraining Cold Migration in Spiral Galaxies* **(Honors)**; Nominated: Leroy Apker Award

Carrie Filion '18 – PhD candidate at **Johns Hopkins University**
Project: *Configuring GALAXY Simulation Package*; Senior Thesis: *Radial Migration & Manifold Theory as Observed in the GALAXY N-Body Simulation* **(Honors)**

Chelsea Thangavelu '18 – At Aero Core Inc. MS Aerospace Eng., **CU-Boulder**
Senior Thesis: *Understanding the Disk's Response to Dark Matter Subhalo Bombardment* **(Honors)**

Codie Fiedler-Kawaguchi '18 – Researcher at **Los Alamos National Labs**
Senior Thesis: *Using Permutation Entropy and Statistical Complexity to Understand the Movement of Stars in Trapped Orbits*

Cheryl Liu '18 – PhD candidate at **University of Washington**
Project: *Classification of orbits in the Milky Way*;
Awards: Kathrine B Blodgett 1917 Summer Research Fellowship; **(Honors)**

Jessica Breet '18 – Project: *Monte Carlo Simulation of the Milky Way*

Dr. Bridgett Kohno '17 – PhD conferred '21, **UC-Irvine**
Project: *Galaxy Evolution using Python*

Han Wang '17
Senior Thesis: *The Birth Radius of the Sun from Disk Galaxy Chemical Evolution*

Sarah Brown '17
Senior Thesis: *Significance of Pitch Angle in Radial Migration*

Undergraduate Students, *Swarthmore College*

Noah Lifset '18 – Project: *Pitch Angle and Radial Mixing in the Milky Way*

Luke Barbano '18 – Project: *Optimizing Leapfrog Orbital Integrator in Python*

Publications (student, *direct advisee)

Peer Reviewed Journal Articles:

Beraldo e Silva, L., Debattista, V., Anderson, S. R., Valluri, M., Erwin, P., **Daniel, K. J.** & Deg, N. (2023) "Orbital support and evolution of flat profiles of bars (shoulders)" ApJ, 955, 38 (DOI: 10.3847/1538-4357/ace976)

Rampalli, R., Smock*, A., Newton, E., **Daniel, K. J.** & Curtis, J. L. (2023) "Wrinkles in Time – I: Rapid Rotators Found in High Eccentricity Orbits" ApJ, 958, 76 (DOI: 10.3847/1538-4357/acff69)

Filion, C., McClure, R. L., Weinberg, M. D., D'Onghia, E. & **Daniel, K. J.** (2023) "The Non-Axisymmetric Influence: Radius and Angle-Dependent Trends in a Barred Galaxy" MNRAS, 524, 276 (DOI: 10.1093/mnras/stad1832))

Khachaturyants, T., Debattista, V., Ghosh, S., Beraldo e Silva, L. & **Daniel, K. J.** (2022) "The pattern speeds of vertical breathing waves" MNRAS Letter, 517, 55 (DOI: 10.1093/mnrasl/slac112)

Khachaturyants, T., Beraldo e Silva, L., Debattista, V. & **Daniel, K. J.** (2022) "Bending waves excited by irregular gas inflow along warps" MNRAS, 512, 3500 (DOI: 10.1093/mnras/stac606)

Daniel, K. J., Schaffner, D., McCluskey*, F., Fiedler Kawaguchi*, C., Loebman, S. (2019) "When Cold Radial Migration is Hot: Constraints from Resonant Overlap" ApJ, 882, 111 (DOI: 10.3847/1538-4357/ab341a)

Daniel, K. J. & Wyse, Rosemary F. G. (2018) "Constraints on Radial Migration in Spiral Galaxies - II. Angular momentum distribution and preferential migration" MNRAS, 476, 1561 (DOI: 10.1093/mnras/sty199)

Daniel, K. J., Heggie, D. C, & Varri, A. L. (2017) "An Approximate Analytic Model of a Star Cluster with Potential Escapers", MNRAS, 468, 1453 (DOI: 10.1093/mnras/stx571)

Daniel, K. J. & Wyse, Rosemary F. G. (2015) "Constraints on Radial Migration in Spiral Galaxies - I. Analytic Criterion for Capture at Corotation" MNRAS, 447, 3576 (DOI: 10.1093/mnras/stu2683)

Le Bourgne, D., Roberto, A., **Daniel, K. J.** et al. (2006) "Gemini Deep Deep Survey. VI. Massive Hδ-strong Galaxies at z= 1" ApJ, 642, 48 (DOI: 10.1086/500005)

Gagné, M., **Daniel, K. J.**, & Skinner, S. L. (2004) "Simultaneous *Chandra* and Very Large Array Observation of Young Stars and Protostars in ρ-Ophiuchus Cloud Core A", ApJ, 613, 393 (DOI: 10.1086/422828)

Daniel, K. J., Linsky, J. L., & Gagné, M. (2002) "*Chandra* Observations of the Pleiades Open Cluster: X-Ray Emission from Late B- to Early F-Type Binaries", ApJ, 578, 486 (DOI: 10.1086/340553)

Other Publications:

"How relational learning can disrupt the scientific cultural status quo: lessons from astronomy" (2023) in *Teaching Environmental Justice: Practices to Engage Students and Build Community*, by **Daniel, K.J.** & Ramirez-Ruiz, E., Ed. Jinnah, S., Dubreuil, J., Greene, J., & Foster, S.S., Edward Elgar Publishing (ISBN: 978 1 78990 505 2)

"Characterizing Gravitational Wave Detector Networks: From A$^\sharp$ to Cosmic Explorer" (2023), *NSF Next-Generation Gravitational Wave Subcommittee White Paper* by Gupta, I., Afle, C.,Arun, K.G., Bandopadhyay, A., Biscobeanu, S., Borhanian, S., Corsi, A., Dhani, A., Evans, M., Hall, E.D., Hannuksela, O.A., Kacanja, K., Kashyap, R., Khadkikar, S., Kuns, K., Li, T.G.F., Miller, A.L., Nitz, A.H.,Owen, B.J., Palomba, C., Pearce, A., Phurailatpam, H., Rajbhandari, B., Ramano, J.D., Sathyaprakash, B., Singh, D., Shoemaker, D.H., Vitale, S., Ananyeva, ., Ballmer, S., Barsotti, L., Baryakhtar, M., Berger, E., Berti, E., Broesgaarden, F., Brown, D., Cahillane, C., Campbell, L., Chen, H.-Y., **Daniel, K.J.**, Driggers, J.C., Effler, A., Eisenstein, R., Fairhurst, S., Feicht, J., Fritschel, P., Fulda, P., Hammond, G., Hansen, H., Haster, C., Kamai, B., Key, J., Kontos, A.,Landry, M., Landry, P., Lantz, B., Lovelace, G., Mandic, V., Mansell, G.L., Martynov, D., McCuller, L., Read, J., Reddy, S., Richardson,J., Rollins, J., Schofield, R., Sigg, D., Slagmolen, B., Sledge, P., Smith, J., Soares-Santos, M., Strunk, A., Sun, L., Tanner, D., van Son, L.A.C., Willke, B., Yamamoto, H., & Zucker, M.

"Cosmic Explorer: A Submission to the NSF MPSAC ngGW Subcommittee" (2023), *NSF Next-Generation Gravitational Wave Subcommittee White Paper* by Evans, M., Corsi, A., Arle, C., Ananyeva, ., Arun, K.G., Ballmer, S., Bandopadhyay, A., Barsotti, L., Baryakhtar, M., Berger, E., Berti, E., Biscobeanu, S., Borhanian, S., Broesgaarden, F., Brown, D., Cahillane, C., Campbell, L., Chen, H.-Y., **Daniel, K.J.**, Dhani, A., Driggers, J.C., Effler, A., Eisenstein, R., Fairhurst, S., Feicht, J., Fritschel, P., Fulda, P., Gupta, I., Hall, E.D., Hammond, G., Hannuksela, O.A., Hansen, H., Haster, C., Kacanja, K., Kamai, B., Kashyap, R., Key, J., Khadkikar, S., Kontos, A., Kuns, K., Landry, M., Landry, P., Lantz, B., Li, G.F.T., Lovelace, G., Mandic, V., Mansell, G.L., Martynov, D., McCuller, L., Miller, A.L., Nitz, A.H., Owen, B.J., Palomba, C., Read, J., Phurailatpam, H., Reddy, S., Richardson,J., Rollins, J., Ramano, J.D., Sathyaprakash, B., Schofield, R., Shoemaker, D.H., Sigg, D., Singh, D., Slagmolen, B., Sledge, P., Smith, J., Soares-Santos, M., Strunk, A., Sun, L., Tanner, D., van Son, L.A.C., Vitale, S., Willke, B., Yamamoto, H., & Zucker, M.

"Amicus Brief" for the *Supreme Court of the United States*, Students for Fair Admission, Inc. vs President and Fellows of Harvard College & Students for Fair Admission, Inc. vs University of North Carolina et al., in support of ensuring diversity in admissions and faculty hiring (2022), Nos. 20-1199 & 21-707, by Hogewood, A.L. III, Corrales, L.R., Tan, J.P, Harlow, D., White, G., Stassun, K., **Daniel, K.J.**, Lopez, L.A., Agueros, M., Norman, D., Ivie, R., Valentine Miller, J., Pando, J.

"Cosmic Explorer, the Next Exploration Step" (2022), in *Matters of Gravity: The Newsletter* of the Division of Gravitational Physics of the APS, by Srivastava, V., **Daniel, K.J.**, Ballmer, S., N.55, 4, Ed. Zimmerman, A., arXiv:2204.00544

"Decadal Survey on Astronomy & Astrophysics 2020: Panel on the State of the Profession and Societal Impacts" in *Pathways to Discovery in Astronomy & Astrophysics for the 2020s* (2021), Consensus Study Report of the National Academies of Sciences, Engineering & Medicine, by Hanson, M.H., Ramirez-Ruiz, E., Besla, G., Boyd, P.T., **Daniel, K.J.**, Haynes, M.P, Isler, J., Ivie, R.L., Johnston, K.V., Miller, C.W., Pando, J., Posselt, J., Rigby, J.R., Rockward, W.S., & Stassun, K.G

"Relationships First and Always: A Guide to Collaborations with Indigenous Communities" (2020), *NAS 2020 Planetary Science and Astrobiology Decadal Survey White Paper* by Gardner-Vandy, K., Scalice, D., Chavez, J.C., David-Chavez, D.M., **Daniel, K.J.**, Gonzales, E, Lee, A., Makoce, M.S., Waterhouse, J., Yracheta, J.M., Gorospe, G., Goordial, J., Hudson, M., Russo Carroll, S., Williams, J., McCoy, T.J., Cadue-Blackwood, C., Atencio, J., Seyler, L., Carron, A., Cabrol, N., Anderson, J., & Kirk, M

"Indigenous Peoples Exist Within Physics" (2020), *APS Gazette* 39, 2 by Kamai, B, Cid, X., Quichocho, X., Little, A., **Daniel, K.J.**, Gray, C., Neilson, H., & Blue Bird, J.

"Requirements for Radial Migration: How does the migrating fraction depend on stellar velocity dispersion?" (2014), in *Structure and Dynamics of Disk Galaxies*, by **Tolfree, K.J.D.**[†] & Wyse, Rosemary F. G., PASP conference proceedings v.480, 179, Eds. Seigar, M. S. & Treuthhardt, P.

Select EDI Efforts & Public Engagement

Leadership:

Morrison Planetarium, California Academy of Sciences 2022-2023
'Spark: The Universe in Us' – *Science Advisor*

Supreme Court of the United States (SCOTUS), Amicus Brief in support of active measures to ensure diversity in admissions and faculty hiring, Students for Fair Admission, Inc vs President and Fellows of Harvard College (No. 20-1199) & Students for Fair Admission, Inc vs University of North Carolina et al. (21-707) – *Amicus Curiae (invited)* 2022-2023

Society of Indigenous Physicists (SIP) – ***Co-Founder & Lead Organizer*** 2019-

National Academy of Sciences (NAS) Decadal survey on Astronomy & Astrophysics (**Astro2020**): State of the Profession & Societal Impacts – *Panelist (nominated)* 2019-2021

Committee on Status of Minorities in Astronomy (CSMA) 2017-2020
– *Committee (nominated & elected)*

Sub-committee: Indigenous Knowing & Scientific Perspectives

[†]Alias

Invited Speaker:

2024 "Galactic Symphony: The Harmonic Evolution of Our Milky Way Galaxy" as a *Steward Observatory Public Evening Lecture*, Tucson, AZ

2023 "Astro2020 DEIA Priorities, Actions, and Opportunities" at *APS April Meeting*, Minneapolis, MN

Opening speaker for the *Community Based Astronomy Workshop* preceding the 241 AAS Meeting, Seattle, WA

2022 Plenary, "Animating the Science: Human Challenges in Large Astronomy Projects and Collaborations" at *International LISA Symposium XIV*, Glasgow, Scotland

"State of the Profession Astro2020: An Overview" at *AAS Division of Dynamical Astronomy Annual Meeting*, at Flatiron Institute, NYC, NY

2021 "Centering Relationship: Co-Founding of the Society of Indigenous Physicists" hosted by the *UC-Santa Cruz American Indian Resource Center*

2020 "Migrations: Solar and Familiar Origin Stories" at *SACNAS*, Long Beach CA

"Stranger in a Strange Land: An Origin Story" at *UC-Santa Cruz Lamat Program*

2018 "Practical Tools to Combat the -isms' in STEAM Classrooms" A workshop at the *Bucks IU Challenging the Gifted Conference*

2017 Keynote at the *Banneker & Aztlán Institute*, summer research program aimed at preparing BIPOC and other underrepresented groups for top tier graduate programs in astronomy (*Harvard-CfA*)

Model Woman Scientist Speaker at *Physics Wonder Girls Camp* (*U Sciences*)

PA Young Women in Physics Conference (PA WiP) (*Bucknell*)

McNulty Scholars Program, promoting women in STEM fields (*SJU*)

Organizer or Co-Organizer: (Selected)

2023 Inaugural Meeting of the "Unsolved Problems in Astrophysics: A Network to Revolutionize Our Understanding of the Universe Through Inclusive Workplaces and Equitable Practices" in Palo Alto, CA, USA.

2017 – 2020 Several workshops and panels centering BIPOC members of the Physics, Astronomy & Astrophysics community at national conferences such as the annual AAS, SACNAS, and NSBP meetings.

2018 CSMA Workshops at AAS Meetings: "Indigenous Knowledge in the 21^{st} Century" & "Everyday Anti-Racism: Tools to Combat Racism in Astronomy"

2017 Student booth at the Science Carnival at the *Philadelphia Science Festival*. With Carol Bowe '17, Carrie Filion '18 & Cassie Wang '18 (*BMC*)

2016 New *Bryn Mawr College* outreach program aiming to inspire school age girls to pursue STEM. With Carol Bowe '17 & Carrie Filion '18 (*BMC*)

Courses Taught

University of Arizona, Tucson, AZ
ASTR 300A - *Dynamics in Astronomy & Astrophysics*

Bryn Mawr College, Bryn Mawr, PA
PHYS 101 Lab - *Introductory Physics I - Mechanics* (remote design)
PHYS 102 - *Introductory Physics II - E&M*
PHYS 102-1 - *Introductory Physics II - E&M (postbac pre-med)*
PHYS 121 - *Modern Physics*
PHYS 122 - *Introduction to Classical Mechanics*
PHYS 214 - *Introductory Quantum Mechanics*
PHYS 214 Lab - *Programming in Python*
PHYS 303 - *Statistical Mechanics & Thermodynamics*
PHYS 308 - *Advanced Classical Mechanics*
PHYS 328 - *Galactic Dynamics*
PHYS 403 - *Undergraduate Supervised Research*
PHYS 505 - *Graduate Classical Mechanics*

Swarthmore College, Swarthmore, PA
ASTR 1 - *Introductory Astronomy*
ASTR 2 - *Tracing the Unseen Universe*
ASTR 16 Lab - *Modern Astrophysics: Observational*
PHYS 82 - *Advanced Lab II*
PHYS 94 - *Senior Comprehensive*

Towson University, Towson, MD
ASTR 161 - *Introductory Astronomy I*
ASTR 161 Lab - *Introductory Astronomy I: Lab*
ASTR 162 - *Introductory Astronomy II*
ASTR 162 Lab - *Introductory Astronomy II: Lab*
PHYS 100 - *Understanding Physics*
PHYS 211 - *General Physics I: Algebra/Trig Based*
PHYS 241 - *General Physics I: Calculus Based*
PHSC 101 - *Physical Science*

Johns Hopkins University, Baltimore, MD
PHYS 171.101 (Recitation & Lab) - *General Physics I (Sci Majors)*
PHYS 171.102 (Recitation & Lab) - *General Physics II (Sci Majors)*
PHYS 171.103 (Head TA) - *General Physics I (Bio Majors)*
PHYS 171.104 (Head TA) - *General Physics II(Bio Majors)*

Institutional Service

UA Committees

Steward Observatory /Department of Astronomy Advisory Committee	2023-2026
Graduate Admissions Committee	2023-2024
Steward Observatory Prize Fellowship in Theoretical and Computational Astrophysics Selection Committee	2023-2024

BMC Committees

Graduate Council	2021-2022
Ad Hoc Committee to form an Anti-Racism Committee (ARC)	2021
Honor Board	2017-2020
Hiring Committee, Physics	2017, 2019, 2021
HC Hiring Committee, Astronomy – *Advisor*	2016

Other BMC College Service

Director of Graduate Studies in Physics	2021-2022
Race Matters Institute Workshops – *Advisory Committee*	2018-2019
Alumnae Association Travel Program: Authentic Iceland – *Lecturer/Host*	2018
Physics Department Events – *Coordinator*	2017-2021
Society of Physics Students (SPS-BMC) - *Faculty Advisor*	2017-2022
BMC Star ParTeas – *Organizer & Host*	2017-2022
Student Booth at Philadelphia Science Festival Carnival– *Organizer*	2017
SAndAWiCh – *Organizer & Host*	2015-2019

A quarterly Tri-college seminar for astrophysically oriented faculty.