

ANNETTE S. LEE

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CURRENT POSITIONS

Associate Professor – Physics and Astronomy
College of Science and Engineering
St. Cloud State University

St. Cloud, Minnesota, US
August 2009-Present

Adjunct Associate Professor - Centre for Astrophysics
School of Agricultural, Computational & Environmental Sciences
University of Southern Queensland

Brisbane, Queensland, Australia
August 2018-Present

Professional Visual Artist
M.F.A., Painting, 2000

Minneapolis, Minnesota, US
1987-Present

EDUCATION

University of the Western Cape
Ph.D., Physics and Astronomy

Cape Town, South Africa
Expected 2019

- Research Interests: Interdisciplinary STEM, Indigenous STEM, Astronomy Education Research, Cultural Astronomy, Community Based Research/Programming, Public Outreach, Science Education
- Dissertation “*The Effects on Student Knowledge and Engagement When Using a Culturally Responsive Framework to teach ASTR101*”

Washington University
M.S., Astrophysics

St. Louis, Missouri
May 2008

Yale University School of Art
M.F.A., Painting

New Haven, Connecticut
May 2000

University of Illinois
B.F.A., Art

Champaign-Urbana, Illinois
May 1998

University of California
B.S., Applied Mathematics

Berkeley, California
May 1992

SELECTED GRANTS AND HONORS

American Astronomical Society (AAS) Shapley Lecturer	2019-current
AUS Embassy Scholar, University of Southern Queensland, Centre for Astrophysics	2018
American Astronomical Society Education and Professional Development Grant	2018
Distinguished Lecturer, Archaeological Institute of America, Webster Lectureship	2018-2019
Faculty Improvement Grant, “ <i>Digital Storytelling in STEM</i> ”, St. Cloud State University	2015, 2017
Cultural Diversity Grant, “ <i>Interdisciplinary STEM</i> ”, St. Cloud State Univ.	2017
NASA-MN Space Grant Funding, <i>Research, Course & Educator Workshop</i>	2009-2016
Minnesota State Arts Board-Arts Learning Grant	2014-2017
Minnesota State Arts Board-Arts Touring Grant	2016-2018
<i>Travel Award, International Astronomical Union General Assembly</i>	2015
Denison Visiting Professorship Award, Michigan University, Mt. Pleasant, Michigan	2015-2017
Faculty Research Grant, <i>Dissemination Dakota Star Knowledge</i> , St. Cloud State University	2013

University Research Grant, <i>Ojibwe Star Knowledge Book</i> , St. Cloud State University	2009, 2013
Women's Foundation of Minnesota, <i>Native Skywatchers</i> and <i>Girls Best Planning Grant</i>	2012-2103
Bush Foundation Fellowship Award, <i>Native Skywatchers Research & Programming</i>	2012-2104
North Star STEM Alliance, <i>Native Skywatchers</i> Outreach & Presentations	2009 - 2012
New Researcher Award, St. Cloud State University, MN	2011
MN State Arts Board, Cultural Community Partnership Award, MN	2011 - 2012
Invited Attendee 58 th Meeting of Nobel Laureates in Physics, Lindau, Germany	2008
<i>Olin Fellowship for Women</i> , Graduate School, Washington University,	2007
<i>Travel Fellowship</i> , Washington University, St. Louis, MO	2005
<i>National Science Foundation Graduate Research Fellowship</i>	2003-2006
<i>NASA - MN Space Grant Consortium Representative</i>	2003
<i>Schoelkopf Traveling Fellowship</i> , Yale University School of Art, New Haven, CT	1999

RECENT INVITED TALKS

American Astronomical Society (AAS) 234 th Meeting, Plenary-Invited Speaker, St. Louis, Missouri	2019
Am. Assoc. for the Advancement of Science (AAAS), Dialogue on Science, Ethics & Religion, Invited Talk	2019
Adler Planetarium, Webster Distinguished Lecturer IAI, Invited Talk, Chicago, Illinois	2019
Minnesota Geoscience Teachers Conference, Keynote Speaker, Minneapolis, Minnesota	2019
Invited Speaker, International Expert Meeting, Astronomical Heritage & Sacred Places, Gran Canaria, Spain	2018
Invited Colloquium Speaker, Department of Astronomy University of Toronto, Ontario, Canada	2018
Keynote Speaker, <i>Maamwizing</i> Indigenous Conference, Laurentian University, Sudbury, Ontario	2018
Keynote Speaker, Environmental Education Association of Oregon, Portland, Oregon	2018
Invited Speaker, Public Talk, US Embassy Scholar, Univ. of Southern Queensland, National Science Week	2018
Invited Colloquium Speaker, US Embassy Scholar, Univ. of Southern Queensland, Centre for Astrophysics	2018
Invited Speaker, American Indian/Alaskan Native Working Group Lead, NASA Science Mission Directorate	2018
Invited Speaker, NASA Office of Education, Minority University Research & Education Project (MUREP)	2017

SYNERGISTIC COLLABORATIONS

2018 - current	Co-curator indigenous astronomy traveling exhibit with D. Pantalony and W. Buck, education and public outreach, " <i>One Sky-Many Worlds: Indigenous Voices in Astronomy</i> ", Canada Science and Technology Museum, Ottawa, Canada
2017 - current	Collaborative indigenous science education, curriculum development with G. Langhorst, " <i>Maya Cosmologies-Maizocentric Worldview</i> ", Fond du Lac Tribal & Community College, Minnesota
2015 - 2017	Co-curator indigenous astronomy permanent exhibit exhibit with D. Pantalony and W. Buck, education and public outreach, " <i>One Sky-Many Astronomies</i> ", Canada Science and Technology Museum, Ottawa, Canada
2015 - current	Partner with W. Buck, indigenous astronomy, science education, curriculum development and public outreach, Manitoba First Nations Educator Resource Center, Winnipeg, Ontario, Canada
2016 - current	Partner with D. Hamacher, Monash Univ.; C. Brown, Univ. South Queensland, " <i>Incorporating Indigenous elements of astronomy into existing undergraduate courses and outreach activities to enhance cross-cultural competencies</i> "
2017 - current	Partner with D. Scalice, NASA-Astrobiology Program, Education & Communications Lead, " <i>Dual Learning/Two Eyed Seeing Pedagogy in Science Education</i> "

ASSESSMENT & EVALUATION

<i>Center for Applied Atmospheric Research & Education-CAARE</i> , Evaluator, Collaboration with San Jose State Univ., Fond du Lac Tribal & Comm. College, NASA-MIRO-MUREP	2015 – present
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NASA-CIPAIR, *Environmental Modeling & Research Experience* (EMARE), Evaluator, collaboration with Fond du Lac Tribal & Community College, NASA-MIRO-MUREP 2010 - 2014

Department of Physics and Astronomy Assessment Lead, St. Cloud State University 2015 – present

College of Science & Engineering Assessment Representative, St. Cloud State University 2015 – present

RELATED WORK EXPERIENCE

2009-current **St. Cloud State University**, St. Cloud, MN, Associate Professor, Astron. & Physics, Planetarium Director

2018-current **University of Southern Queensland**, Adjunct Associate Professor, Centre for Astrophysics, School of Agricultural, Computational, & Environmental Sciences, Australia

2015-current **Fond du Lac Tribal & Community College**, Cloquet, MN, Indigenous/Interdisciplinary STEM consultant & faculty

2008-2009 **Harris Stowe University**, St. Louis, MO, Adjunct Instructor, Geography

2005-2008 **Washington University**, St. Louis, MO, Teaching Assistant, Astronomy and Physics

2001-2005 **Fond du Lac Tribal & Community College**, Cloquet, MN, Tenured Faculty in Art, Math, Astronomy

2001-2003 **University of Minnesota**, Teacher Corp Program, Duluth, MN, Instructor of Math & Math Education

1999-2000 **Yale University**, Geology Department, New Haven, CT, Teaching Assistant in Geology

1999 **Yale University School of Art**, New Haven, CT, Teaching Assistant in Drawing & Printshop Manager

1995-1998 **University of Illinois**, Office of Minority Student Affairs, Champaign-Urbana, IL, Coordinator and Master Tutor in Astronomy, Physics and Mathematics

1993-1994 **Lac Courte Oreilles Ojibwa Community College**, Hayward, WI, Full-time Faculty in Math, Computer Science and Astronomy

RESEARCH EXPERIENCE

2009-current **Astronomy Education Research (AER)**, St. Cloud State University, St. Cloud, MN. Working with D. Marshall & J. Holbrook Univ. of the Western Cape, focus on culturally integrated STEM & widening STEM participation.

2012-current **Evaluator/Assessment - NASA**, Geography and GIS, Environmental Science, interdisciplinary research experiences at the community college level for underrepresented students, Fond du Lac Tribal & Comm. College, Cloquet, MN,

2007-2018 **Interdisciplinary STEM/Indigenous STEM, Cultural Astronomy**, St. Cloud State University, St. Cloud, MN. Working with Fond du Lac Tribal & Comm. College, Cloquet, MN, curriculum development, grant writer, STEM program development, faculty

2008-2009 **Graduate Research Fellow in Astrochemistry**, Washington University, St. Louis, MO Worked with K. Lodders on chemical models of atmospheres of stars & exoplanets.

2005-2008 **Graduate Research Fellow in Astrophysics**, Washington University, St. Louis, MO Worked with J. Buckley on gamma ray sources & observing at Whipple Observatory.

1998-2000 **Research Assistant in Geophysics**, Yale University, New Haven, CT Worked with A. Davaille in modeling layers of the Earth's interior.

- 1990-1992 **Research Assistant in Astrophysics**, University of California, Berkeley, CA
Worked with Gibor Basri in high-resolution stellar spectroscopy.
- 1991 **Research Assistant in Astrophysics**, University of California, Berkeley, CA
Worked with Ivan King in digital imaging of galaxies from the Hubble Space Telescope.
- 1989 **Research Participant - Mathematics**, University of California, Berkeley, CA
UC Berkeley Summer Math Research Institute, Uri Triesman, Leon Henkin

RECENT CONFERENCES WITH ORAL PRESENTATIONS

- 2018 Sept- *“As It is Above; It is Below – Kapemni Doorways in the Night Sky”*, Environmental Education Conference: Exploring Our Connections through Environmental Education, Environmental Educators Association of Oregon, Canby, OR
- 2018 Sept- *“Our Brains Are Wired For Storytelling”*, Astronomical Society of the Pacific (ASP)-Advancing Astronomy for All: Conference on Education, Communication, and Diversity in Science, Sonoma County, CA, Oral Presentation
- 2018 Aug- *“Native Skywatchers Indigenous STEM Revitalization and Dual Learning Pedagogy”*, Festival of Astronomy/National Science Week, University of Southern Queensland (USQ); Brisbane Planetarium, Brisbane, Queensland, Australia
- 2018 Feb- *“Examples, tools, and strategies for making a more inclusive science”*, Advancing Science Discovery to Application”, the American Association for the Advancement of Science (AAAS) Annual Meeting, Austin, TX
- 2017 Dec- *“Native Skywatchers-Indigenous STEM Resource Development”*, Astronomical Society of the Pacific (ASP)-Engaging Diverse and Underserved Communities in Astronomy and STEM, St. Louis, Missouri-Invited Speaker: Panel, Presentation, and Workshop
- 2017 Nov- *“Native Skywatchers-Indigenous STEM Resource Development”*, Minnesota Department of Education (MDE), Minnesota Science Teachers Association (MnSTA), St. Cloud, MN-Invited Speaker
- 2017 Nov- *“Star Maps, Planispheres, and Celestial Calendars: Engaging Students, Educators, and Communities with Multicultural STEM/STEAM Visual Resources”*, Minnesota Department of Education (MDE), Science Educators Conference, St. Cloud, MN-Invited Speaker
- 2017 Sept- *“Interdisciplinary, Intercultural, Community-Based Education Practices at the Intersection of Art-Science-Culture”*, INSAP X; OXFORD XI; SEAC, Santiago de Compostela, Spain
- 2017 Jul- *“Celestial Calendar-Paintings and Culture-Based Digital Storytelling: Cross-Cultural, Interdisciplinary, STEM/STEAM Resources for Authentic Astronomy Education Engagement”*, International Symposium on Education in Astronomy and Astrobiology” (ISE2A-IAU), Utrecht, Netherlands
- 2017 Jun- *“Star Maps, Planispheres, and Celestial Calendars: Engaging Students, Educators, and Communities with Multicultural STEM/STEAM Visual Resources”*, American Astronomical Society (AAS), Austin, Texas, US
- 2016 Nov- *Native Skywatchers: Overview of Indigenous Revitalization Efforts*, Invited Speaker, Canada Science and Technology Museum, Ottawa, Canada

SELECTED PUBLICATIONS

Celestial Calendar-Paintings and Culture-Based Digital Storytelling: Cross-Cultural, Interdisciplinary, STEM/STEAM Resources for Authentic Astronomy Education Engagement, EPJ Conference Proceedings in

- Physics and Astronomy, International Symposium on Education in Astronomy and Astrobiology” (ISE2A-IAU), Utrecht, Netherlands, 2018
- The Cosmos as Viewed Through the Lens of a Native-American Astronomer-Artist*, pg. 203-220, *Imagining Other Worlds*, edited by N. Campion and C. Impey, Inspiration of Astronomical Phenomena (INSAP) IX, Gresham College, London, Sophia Centre Press 2018
- Cover artwork, close up - *Maang* constellation, Journal of Astronomy in Culture, International Society for Archaeoastronomy and Astronomy in Culture (ISAAC), Vol. 1, 1. June 2016, <http://escholarship.org/uc/jac>, 2016
- Ojibwe Giizhiig Anung Masinaaigan and D(L)akota Makoče Wičan̄hpi Wowapi: Revitalization of Native American Star Knowledge, A Community Effort*, Journal of Astronomy in Culture, International Society for Archaeoastronomy and Astronomy in Culture (ISAAC), Vol. 1, 1. June 2016
- Native Skywatchers and the Makoče Wicanhpi Wowapi – D(L)akota Star Map - Building Community Around Native Star Knowledge*, Astronomical Society of the Pacific-Communicating Science, Conference Series, San Jose, CA, <http://www.astrosociety.org/publications/asp-conference-series-forthcoming-volumes/>
- Seeing the Skies through Native Eyes – Collaboration with Integrity in the Digital Planetarium and Other Educational Programs*, L. Peticolas, D. Begay, N. Maryboy. A. Lee, N. Imara, B. Mendez, Astronomical Society of the Pacific-Communicating Science, Conference Series, San Jose, CA, <http://www.astrosociety.org/publications/asp-conference-series-forthcoming-volumes/>, 2014

SELECTED EXHIBITIONS

- 2018 “*Native Skywatchers-Earth Sky Connections*”, Annette Lee, et al., curated by A. Lee
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| Paramount Gallery | St. Cloud, Minnesota |
| Two Rivers Gallery | Minneapolis, Minnesota |
| Mille Lacs Indian Museum | Onamia, Minnesota |
| Lyric Center for the Arts, First Stage Gallery | Virginia, Minnesota |
| Goodhue Historical Center | Red Wing, Minnesota |
| White Earth Tribal College Gallery | Mahnomen, Minnesota |
| Watermark Gallery | Bemidji, Minnesota |
- 2017 “*Native Skywatchers-Earth Sky Connections*”, Annette Lee, et al., curated by A. Lee
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| Perpich Center for the Arts Gallery | Minneapolis, Minnesota |
| All My Relations Gallery | Minneapolis, Minnesota |
- 2016 “*Native Skywatchers*”, Annette Lee, W. Wilson, curated by A. Lee
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| Macrostie Gallery | Grand Rapids, Minnesota |
| Milaca Arts Center | Milaca, Minnesota |
| Whitney Senior Center | St. Cloud, Minnesota |
- 2015 “*Native Skywatchers Earth Sky Connections*”, Annette Lee, et al., curated by A. Lee
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| Great River Regional Library | St. Cloud, Minnesota |
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- “*Native Skywatchers Reach for the Art in the Sky*”, Annette Lee, et al., curated by A. Lee
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| Ziibiwing Cultural & Lifeways Center | Mt. Pleasant, Michigan |
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- “*Identity: Expressing & Embracing Show*”, group show
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| Women’s Center, St. Cloud State Univ., Paramount Art Center, | St. Cloud, Minnesota |
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BOOKS PUBLISHED

- Ojibwe Sky Star Map Constellation Guide: An Introduction to Ojibwe Star Knowledge*, A. Lee, et. al., Avenue F Productions, Cloquet, MN, ISBN 978-615-98678-4, 2014
- D(L)akota Sky Star Map Constellation Guide: An Introduction to D(L)akota Star Knowledge*, A. Lee, et. al., Avenue F Productions, Cloquet, MN, ISBN 978-0-692-23254-5, 2014
- Native Skywatchers Curriculum Workbook*, A. Lee, Native Skywatchers Press, ISBN 978-0-692-73808-5 release date Feb. 2019
- The Forever Sky*, text by R. Peacock, paintings by A. Lee, Minnesota Historical Society Press, release date April 2019

North Country Aurora: The History, Science, Literature, and Lore of the Northern Lights, text by A. Lee,
photos by T. Novitsky, Minnesota Historical Society Press, release date 2020

REFERENES

Jarita Holbrook | University of the Western Cape | Physics & Astronomy Department | 724-252-7482 |
astroholbrook@gmail.com

Daniella Scalice | NASA - Education and Communications Lead, NASA Astrobiology Program | 831-247-6728 |
daniella.m.scalice@nasa.gov

David Pantalony | Canada Museum of Science & Technology | Curator, Physical Sciences and Medicine
| 613-949-9165 | dpantalony@ingeniumcanada.org

Lynn Cominsky | Chair-Department of Physics & Astronomy | Sonoma State University | 707-664-2655 |
lynnc@universe.sonoma.edu

Glenn Langhorst | Fond du Lac Tribal & Community College | Geology & Physics Faculty | 218-879-0719
| glang@fdltcc.edu