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EDUCATION

Princeton University - Princeton, NJ

Ph.D., Physics 2008
M.A., Physics 2004

Amherst College - Amherst, MA

B.A. *summa cum laude*, departmental honors in Physics 2002

APPOINTMENTS

Professor - Cornell University Physics Department & Astronomy Department 2023 – present

Associate Professor - Cornell University Physics Department & Astronomy Department 2018 – 2023

Visiting Scientist - University of Innsbruck, Institute für Experimentalphysik 2021 – 2022

Assistant Professor - Cornell University Physics Department 2013 – 2018

Research Faculty - University of Colorado, Boulder 2010 – 2012

NIST Physical Measurement Laboratory - Dr. Kent Irwin

National Research Council Postdoctoral Fellow - NIST 2008 – 2010

Quantum Devices Group - Dr. Kent Irwin

Postdoctoral Research Associate - Princeton University 2008

Gravity Group - Dr. Lyman Page

Wilderness Course Instructor - National Outdoor Leadership School 2005

Graduate Student Research Associate - Princeton University 2002 – 2008

Atacama Cosmology Telescope (ACT) Collaboration - Dr. Suzanne Staggs

Undergraduate Research Assistant - Amherst College 2001 – 2002

Molecular Magnets Research - Dr. Jonathan Friedman

DOE National Undergraduate Fellow - Princeton Plasma Physics Laboratory 2001

Hall Thruster Group - Dr. Nathaniel Fisch

Research Technician and Consultant - Caltech and JPL 1998 – 2001

Galaxy Evolution Explorer (GALEX) Group - Dr. Christopher Martin

RESEARCH INTERESTS

Cosmology, astrophysics, and fundamental physics: studying inflation, dark energy, dark matter, neutrinos, galaxy clusters, and galaxy evolution using cosmic microwave background (CMB) and sub-mm measurements.

Detector arrays and applied superconductivity: low-temperature detector arrays, superconducting detectors, transition-edge sensor (TES) bolometers, SQUID measurement systems, device physics, sub-Kelvin refrigeration.

Astronomical optics and receivers: deployment, upgrades, and operations at remote high-elevation sites, telescope optics design, cryogenic instrument development, material properties, optical coatings.

PRIMARY RESEARCH COLLABORATIONS

Advanced ACTPol (Institutional PI): A substantial instrument upgrade for the Atacama Cosmology Telescope with more frequencies and a half sky survey to constrain the Hubble constant and more, *observations 2016-22*

CCAT-prime (Instrument Scientist): A high-throughput 6-meter sub-mm and mm telescope on Cerro Chajnantor to measure clusters, the CMB, high redshift intensity mapping, and galactic ecology, *observations 2024-30+*

NIST Quantum Sensors: Developing CMB polarimeters, superconducting microwave detectors, and SQUID multiplexing techniques for readout of large detector arrays, *collaborator 2008-present*

Simons Observatory (Institutional PI): Joining of forces between the ACT and Simons Array teams to build new telescopes and instruments to pursue CMB science, *observations 2023-30+*

Stage IV CMB Observatory (CMB-S4): The “ultimate” ground-based CMB observatory including multiple telescopes in Chile and at the South Pole, *observations 2030-40+*

ADDITIONAL (AND PAST) RESEARCH COLLABORATIONS

ABS: A low-resolution telescope instrument to probe inflation via the large scale CMB, *observations 2012-14*

ACT & ACTPol: now analyzing data jointly with new ACT measurements, *observations 2008-16*

BFORE: a balloon-borne observatory to measure CMB B-mode foregrounds, *first flight target 2021*

SCUBA-2: A sub-millimeter instrument on the JCMT, *collaborator 2008-2012*

SPTPol: A receiver to measure CMB polarization on the South Pole Telescope, *collaborator 2009-2012*

ZEUS-2: A second generation sub-mm grating spectrometer for the CSO and APEX, *collaborator 2010-present*

350 GHz remote human imager: A security imaging system using TES detectors, *collaborator 2009-2012*

HONORS AND AWARDS

World Laureates Forum IV Young Scientist invited to present at Forum in Shanghai, China	2021
World Laureates Forum III Young Scientist invited to present at Forum in Shanghai, China	2020
Cornell Graduate Student Assembly Faculty Advising and Mentorship Award, Honorable Mention	2019
World Economic Forum Young Scientist at Annual Meeting of New Champions, Tianjin, China	2018
National Science Foundation CAREER Award	2015
Cornell University Nominee for Packard Fellowship	2014
National Research Council Postdoctoral Fellowship	2008 – 2010
Centennial Fellowship from Princeton University	2002 – 2007
SPIE Scholarship Recipient	2004 – 2006
NASA Group Achievement Award for work on the GALEX space telescope	2004
Optical Research Associates, Optical Design Competition Winner	2004
Joseph Henry Prize from the Princeton University Physics Department	2002
High Distinction on undergraduate thesis from the Amherst College Physics Department	2002
Boeing Science Writing Awards Honorable Mention	2001

SERVICE AND LEADERSHIP

Cornell Physics Department Co-Chair of Climate, Equity, Diversity, and Inclusion Committee	2023 – present
Simons Observatory Chair of Technical Committee	2021 – present
Cornell Physics Department Chair of Faculty Search Committee	2020 – 2021
CMB Stage IV Leader (Level 2) of Large Aperture Telescope Development	2020 – present
Cornell Physics Department Chair of Climate, Equity, Diversity, and Inclusion Committee	2020 – 2021
CCAT-prime Instrument Scientist	2019 – present
CMB Stage IV Governing Board Member	2018 – 2021
Cornell Physics Department Chair of Physics 6510/4410 Course Development Committee	2018 – present
CMB Stage IV Co-Leader of Large Aperture Telescope Development	2018 – 2020
Cornell Physics Department Bethe Lecturer Committee	2018 – 2020
CCAT-prime Liaison to Simons Observatory and CMB-S4	2017 – present
CCAT-prime Project Leader: CMB Polarization Science	2017 – present
CMB Stage IV Concept Definition Task Force team member	2017 – 2018
Organized and Hosted joint CCAT-prime and Simons Observatory Optics Meeting, Cornell	2017
President of the Board of Cayuga Heights School Age Program	2017 – 2019
Simons Observatory Technical Board and Optics Working Group Leader	2016 – 2021
Coordinating CMB Stage IV telescopes working group and technical white paper	2016 – 2017
Convening Instrumentation Discussions at CMB Stage IV workshops	2016 – 2017
Guiding board member of Atacama Cosmology Telescope	2016 – present
Convening CPAD “New Technologies for Discovery” workshop session, Arlington, Texas	2015
Cornell Physics Department Graduate Student “Wise Person”	2015 – 2016
Board member of Cayuga Heights School Age Program	2014 – 2016
Session Chair at SPIE Astronomical Telescopes and Instrumentation Conference in Montreal	2014
Member/Coauthor of the NASA Advisory Committee 30-year Astrophysics Roadmap	2013
Bethe Prize Committee for Cornell Physics Department	2013 – 2014
Presentation Judge at Conference for Undergraduate Women in Physics	2013
Participated in recruiting of underrepresented undergraduate students	2013

Journal article reviewer for:

Applied Optics

Applied Physics Letters

Astronomy and Astrophysics

Astrophysical Journal

IEEE Transactions on Terahertz Science and Technology

Journal of Astronomical Telescopes, Instruments, and Systems

Journal of Cosmology and Astroparticle Physics

Journal of Low-Temperature Physics

Monthly Notices of the Royal Astronomical Society

Optics Express

Optical Materials Express

Review of Scientific Instruments

Proposal reviewer for:

National Aeronautics and Space Administration

National Science Foundation

Department of Energy

Foreign National Science Foundations

RESEARCH PRESENTATIONS

<i>Invited talk:</i> University of Innsbruck Physics Colloquium, Innsbruck, Austria	2022
Fifteenth Pisa Meeting on Advanced Detectors, Elba, Italy	2022
<i>Invited talk:</i> University of Cologne Astrophysics Seminar, Cologne, Germany	2022
<i>Invited talk:</i> European Southern Observatory Lunch Talk, Munich, Germany	2022
<i>Invited talk:</i> World Laureates Forum IV Young Scientist Seminar	2021
<i>Invited talk:</i> Institute for Quantum Optics and Quantum Information Seminar, Innsbruck, Austria	2021
CMB-S4 Workshop and Reviews via Zoom	2021
<i>Invited talk:</i> World Laureates Forum III Young Scientist Seminar	2020
<i>Invited talk:</i> AtLAST Telescope Workshop via Zoom	2020
CMB-S4 Workshop and Government Agency Review both via Zoom	2020
<i>Invited talk:</i> European Southern Observatory, Garching, Germany	2019
<i>Invited talk:</i> CMB-S4 Workshop at Fermilab, Batavia, Illinois	2019
Universidad de Chile Workshop, Santiago, Chile	2019
<i>Invited talk:</i> Pontificia Universidad Catolica Seminar, Santiago, Chile	2018
<i>Invited talk:</i> CMB-S4 Workshop at Princeton University, Princeton, New Jersey	2018
<i>Invited talk:</i> CMB-S4 Project Presentation to DOE and NSF, Germantown, Maryland	2018
<i>Invited talk:</i> Cosmo Andes Conference, Santiago, Chile	2018
<i>Invited talk:</i> CMB-S4 Workshop at Harvard, Cambridge, Massachusetts	2017
Low-Temperature Detectors Conference, Kurume, Japan	2017
<i>Invited talk:</i> Canadian Institute for Theoretical Astrophysics Seminar, Toronto, Canada	2017
<i>Invited talk:</i> CMB-S4 Workshop at the Stanford Linear Accelerator, Palo Alto, California	2017
<i>Invited talk:</i> Perimeter Institute Cosmology Seminar, Waterloo, Canada	2017
<i>Invited talk:</i> Amherst College Physics Department Colloquium, Amherst Massachusetts	2016
<i>Invited talk:</i> University of Washington DUSC Seminar, Seattle Washington	2016
<i>Invited talk:</i> Moriond Cosmology Conference, La Thuile, Italy	2016
LBNL Stage IV CMB Project Planning Workshop, Berkeley, California	2016
University of Michigan Stage IV CMB Project Planning Workshop, Ann Arbor, Michigan	2015
<i>Invited talk:</i> NSF Pavilion at International Astronomical Union Conference, Honolulu, HI	2015
<i>Invited poster:</i> Arab-American Frontiers Symoposium, KAUST, Saudi Arabia	2015
International Astronomical Union Conference, Honolulu, HI	2015
Low-Temperature Detectors Conference, Grenoble, France	2015
<i>Invited talk:</i> UC Berkeley Center for Cosmological Physics Seminar, Berkeley, CA	2015
<i>Invited talk:</i> Cornell University Physics Department Colloquium, Ithaca, NY	2014
SPIE Astronomical Telescopes and Instrumentation Conference, Montreal, Canada	2014
<i>Invited talk:</i> Cornell University Astronomy Department Colloquium, Ithaca, NY	2013
<i>Invited talk:</i> Recontres du Vietnam Cosmology in the Planck Era, Quy Nhon, Vietnam	2013
<i>Invited talk:</i> Pontificia Universidad Catolica de Chile Astronomy Colloquium, Santiago, Chile	2013
<i>Invited talk:</i> Cornell High Energy Synchrotron Source Seminar, Ithaca, NY	2013
<i>Invited talk:</i> University of California at San Diego Astrophysics Seminar, San Diego, CA	2013
American Astronomical Society 221st Meeting, Long Beach, CA	2013
<i>Invited talk:</i> Keck Institute for Space Studies CMB Polarization Workshop, Pasadena, CA	2012
<i>Invited talk:</i> California Institute of Technology Astrophysics Seminar, Pasadena, CA	2012
<i>Invited talk:</i> Cornell University Physics Department Seminars, Ithaca, NY	2012
<i>Invited talk:</i> Massachusetts Institute of Technology Astrophysics Colloquium, Boston, MA	2012
<i>Invited talk:</i> University of Chicago Enrico Fermi Institute Colloquium, Chicago, IL	2012
URSI National Radio Science Meeting, Boulder, CO	2012

<i>Invited talk:</i> University of British Columbia Astronomy Colloquium, Vancouver, Canada	2011
Low-Temperature Detectors Conference, Heidelberg, Germany	2011
Technology and Instrumentation in Particle Physics, Chicago, IL	2011
NRAO Building on New Worlds, New Horizons, Santa Fe, NM	2011
<i>Invited talk:</i> ACT/PIRE Workshop on Galaxy Clusters, Durban, South Africa	2011
<i>Invited talk:</i> URSI National Radio Science Meeting, Boulder, CO	2011
SPIE Astronomical Telescopes and Instrumentation Conference, San Diego, CA	2010
<i>Invited talk:</i> University of Colorado CASA/JILA Seminar, Boulder, CO	2010
<i>Invited talk:</i> University of Washington CENPA Seminar, Seattle, WA	2010
<i>Invited talk:</i> US Workshop on Superconductive Electronics, Warner Springs, CA	2009
<i>Invited talk:</i> Case Western Reserve Univ. Particle Astrophysics Seminar, Cleveland, OH	2009
Low Temperature Detectors Conference, Stanford, CA	2009
<i>Invited talk:</i> Upcoming Measurements of CMB Polarization Workshop, Chicago, IL	2009
American Physical Society April Meeting, Denver, CO	2009
American Astronomical Society Annual Meeting, Long Beach, CA 2009 (<i>poster</i>)	2009
<i>Invited talk:</i> Kavli Institute for Cosmological Physics Seminar, Chicago, IL	2008
<i>Invited talk:</i> Franklin and Marshall College Physics Dept. Colloquium, Lancaster, PA	2008
<i>Invited talk:</i> NIST Quantum Devices Group Seminar, Boulder, CO	2007
Low Temperature Detectors Conference, Paris, France	2007
<i>Invited talk:</i> California Institute of Technology Cosmology Seminar, Pasadena, CA	2007
<i>Invited talk:</i> UC Berkeley Physics/Astronomy Cosmology Seminar, Berkeley, CA	2006
SPIE Astronomical Telescopes and Instrumentation Conference, Orlando, FL	2006

TEACHING

<i>Physics 6561 - Classical Electrodynamics</i> , Cornell University	2022 fall
<i>Physics 4410/6510 - Advanced Experimental Physics Curriculum Upgrade</i> , Cornell University	2021 spring
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 40 students	2020 fall
<i>Physics 2217 - Electricity and Magnetism</i> , Cornell University, 54 students	2020 spring
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 44 students	2019 fall
<i>AS 1102 - Advising Seminar</i> , Cornell University, 10 students	2019 fall
<i>Physics 2217 - Electricity and Magnetism</i> , Cornell University, 62 students	2019 spring
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 44 students	2018 fall
<i>Physics 1116 - Newtonian Mechanics and Relativity</i> , Cornell University, 37 students	2018 spring
<i>Physics 1116 - Laboratory Development</i> , Cornell University, 27 student section	2017 fall
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 40 students	2017 spring
<i>Physics 1116 - Newtonian Mechanics and Relativity</i> , Cornell University, 75 students	2016 fall
<i>Physics 1116 - Newtonian Mechanics and Relativity</i> , Cornell University, 14 students	2016 spring
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 37 students	2015 fall
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 35 students	2014 fall
<i>Physics 1116 - Newtonian Mechanics and Relativity</i> , Cornell University, 15 students	2014 spring
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 42 students	2013 fall
<i>Physics 4410/6510 - Advanced Experimental Physics</i> , Cornell University, 56 students	2013 spring
National Outdoor Leadership School (NOLS) Instructor, Lander, WY	2005
Rock climbing and backpacking instructor, Amherst College and Princeton Outing Clubs	1999 – 2004

TRAINING

Effective Search Committee Practices – It Depends on the Lens	2020
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World Economic Forum Science Communication Development at AMNC 2018 in Tianjin, China	2018
Participated in KIC Science Communication Workshop with Alan Alda	2016
Participated in CTE course on Teaching, Identity, and Wellbeing	2016
Attended CTE “How to Leverage New and Social Media to Elevate the Profile of Your Work”	2015
Participated in CTE workshop on Strategies to Effectively Use iClickers in the Classroom	2015
McCormick Engineering Teaching Excellence Institute Workshop on CAREER Proposals	2014
Attended “Write Winning Grants” Workshop	2013
Center for Teaching Excellence (CTE) New Faculty Institute Participant	2013
National Outdoor Leadership School Instructor Course	2004
National Outdoor Leadership School Semester in the Rockies	1999

OUTREACH

Laboratory tours for Conference for Undergraduate Women in Physics (CUWIP)	2023
Laboratory tours for Expanding Your Horizons (EYH) Conferences	2022 – present
American Physical Society National Mentoring Community Mentor	2020 – present
Developed outreach animation about cosmology research and promoted it via youtube and twitter	2020
Advising student researchers in the Simons–National Society of Black Physicists Program	2020 – present
Public lecture at Fuertes Observatory organized by Cornell Astronomical Society, Ithaca, NY	2019
Interview with Robyn Williams for ABC radio	2019
Presentations and laboratory tours for upstate New York teachers and high school students	2018 – present
“Science on Tap” presentation organized by Graduate Women in Science, Ithaca, NY	2017
Advising student researchers in Summer Research for Community College Student Program	2015 – 2019
Working with Louis Stokes Alliance for Minority Participation Summer Research Students	2014 – 2019
Cosmology discussions and lectures for the Cornell Society of Physics Students	2013 – present
Presentations and lab tours for educators in the NSF RET program and Cornell’s CIPT program	2013 – 2016
Interviewed for Cornell Daily Sun and Ithaca Voice Articles	2014
Presentation for high school and community college teachers visiting Cornell	2014
Webcast interview from the Atacama Cosmology Telescope in Chile with the Kavli Foundation	2013
Interviewed by reporters from both New Scientist and the Kavli Institute, Ithaca, NY	2013
Cosmology lecture for the American Meteorological Society, Boulder, CO	2012
Public cosmology lecture at the Fiske Planetarium, Boulder, CO	2012
Public cosmology lecture at the Griffith Observatory, Los Angeles, CA	2010
Interview on German National Radio about CMB polarization and cosmology	2009
American Physical Society press conference on detectors to study the early universe	2009
Princeton graduate alumni association High Table lecture	2007
Princeton physics department graduate student recruiting coordinator	2004 – 2005
Taught astrophysics to students/instructors at the National Outdoor Leadership School	2003 – 2005
PULSE cosmology lecture for middle school students in West Windsor, NJ	2003

POSTDOCTORAL ADVISEES

Eve Vavagiakis, NSF Postdoctoral Fellow	2021 – present
Yaqiong Li, Kavli Institute at Cornell Postdoctoral Fellow	2020 – present
Patricio Gallardo	2019 – 2021
Duc Thuong Hoang	2019 – 2020
Steve K. Choi, NSF Postdoctoral Fellow	2018 – present
Shawn W. Henderson	2013 – 2017
Francesco de Bernardis	2013 – 2017

GRADUATE STUDENT ADVISEES

Ema Smith	2023 – present
Alicia Middleton	2022 – present
Lawrence Lin	2022 – present
Benjamin Keller	2021 – present
Zach Huber	2019 – present
Cody Duell	2018 – present
Nicholas Cothard – Postdoctoral Fellow at NASA GSFC	2016 – 2021
Eve Vavagiakis – Postdoctoral Fellow at Cornell	2015 – 2021
Jason R. Stevens – Working at a startup company	2014 – 2020
Patricio A. Gallardo – Postdoctoral Fellow at University of Chicago	2013 – 2019
Brian J. Koopman – Research Scientist at Yale	2012 – 2018

GRADUATE STUDENT THESIS COMMITTEES

Yulin Gong, <i>advisor: Rachel Bean</i>	2021 – present
Bugao Zou, <i>advisor: Gordon Stacey</i>	2020 – present
Chris Wilson, <i>advisor: Rachel Bean</i>	2019 – present
Dnyanesh Kulkarni, <i>advisor: Andre Leclair</i>	2019 – present
Christopher Rooney, <i>advisor: Gordon Stacey</i>	2018 – present
Ibrahim Shehzad, <i>advisor: Eanna E. Flanagan</i>	2018 – 2022
Gregory Douthit, <i>advisor: Gordon Stacey</i>	2017 – present
Mehmet Demirtas, <i>advisor: Liam McAllister</i>	2017 – 2021
Soumyajit Bose, <i>advisor: David Chernoff</i>	2016 – present
Victoria Calafut, <i>advisor: Rachel Bean</i>	2016 – 2020
Alexander Grant, <i>advisor: Eanna E. Flanagan</i>	2016 – 2020
Paul Corlies, <i>advisor: Alexander Hayes</i>	2015 – 2019
Matthew Hankins, <i>advisor: Terry Herter</i>	2015 – 2018
Jordan Moxon, <i>advisor: Eanna Flanagan</i>	2014 – 2018
Riccardo Pavesi, <i>advisor: Dominik Riechers</i>	2014 – 2019
John Stout, <i>advisor: Liam McAllister</i>	2014 – 2017
Sina Bahrami, <i>advisor: Eanna Flanagan</i>	2013 – 2017
Amit Vishwas, <i>advisor: Gordon Stacey</i>	2012 – 2019
Robert Wharton, <i>advisor: James Cordes</i>	2012 – 2017
Eva-Maria Mueller, <i>advisor: Rachel Bean</i>	2012 – 2015

CORNELL UNDERGRADUATE STUDENT RESEARCHER ADVISEES

Hoanan Gong, Cornell Class of 2026	2023 – present
Elaine Ran, Cornell Class of 2026	2023 – present
Aiden Keck, Cornell Class of 2025	2023 – present
Ari Mirsky, Cornell Class of 2025	2022 – 2023
Colin Murphy, Cornell Class of 2025	2022 – present
Frank Verdi, Cornell Class of 2024	2022 – 2023
Eleana Schoonover, Cornell Class of 2024	2022
Akimasa Ihara, Cornell Class of 2023	2021 – 2022

Dallin Richards, Cornell Class of 2023	2018 – 2022
Pedro Guicardi, Cornell Class of 2022 – Physics graduate student at Caltech	2020 – 2022
Haruki Ebina, Cornell Class of 2022 – Physics graduate student at Berkeley	2019 – 2022
Haoting Zhen, Cornell Class of 2022 – Physics graduate student at Hong Kong U. Sci. & Tech.	2021 – 2022
Photon Xu, Cornell Class of 2022 – Physics graduate student at UCSD	2021 – 2022
Willow Martin, Cornell Class of 2022 – Physics graduate student at Stanford	2019 – 2020
Kshama Malavalli, Cornell Class of 2022	2019 – 2022
Erik Szakiel, Cornell Class of 2021 – Applied Physics graduate student at Stanford	2020 – 2021
Jesse Smith, Cornell Class of 2021 – Physics graduate student at NYU	2018 – 2019
Bella Kang, Cornell Class of 2022	2019
Samuel Gomez, Cornell Class of 2020 – Working for MITRE corporation	2018 – 2020
Mahiro Abe, Cornell Class of 2020 – Physics graduate student at Stanford	2017 – 2020
Noah Sailer, Cornell Class of 2019 – Physics graduate student at Berkeley	2017 – 2019
Grace Song, Cornell Class of 2020	2017 – 2018
Zeqi Gu, Cornell Class of 2020	2017
Justin Williams, Cornell Class of 2020	2017
Philip Jacobson, Cornell Class of 2019 – Electrical Engineering graduate student at Berkeley	2016 – 2018
Kenny Vetter, Cornell Class of 2018 – Physics graduate student at Berkeley	2017 – 2018
Kaiwen Zheng, Cornell Class of 2018 – Physics graduate student at Princeton	2016 – 2018
Kristine Lister, Cornell Class of 2018	2015 – 2016
Avirukt Mittal, Cornell Class of 2017 – Physics graduate student at Berkeley	2015 – 2017
Prabudhya Bhattacharyya, Cornell Class of 2016 – Physics graduate student at Berkeley	2015 – 2016
Brenna Mockler, Cornell Class of 2016 – Astronomy graduate student at Santa Cruz	2015 – 2016
Sarah Marie Bruno, Cornell Class of 2016 – Postdoctoral Fellow at Johns Hopkins	2014 – 2016
M. Sheroze Sherifdeen, Cornell Class of 2016 – Computer Science graduate student at UT Austin	2013 – 2014
Liele Getachew, Cornell Class of 2017 – Working for Goldman Sachs	2013
Humna Awan, Cornell Class of 2015 – Postdoctoral Fellow at U. Michigan	2014 – 2015
Galen Marchetti, Cornell Class of 2015 – Co-Founder & CEO at Kurtosis Technologies	2013 – 2014

SUMMER RESEARCH EXPERIENCE FOR UNDERGRADUATE ADVISEES

Antwine Willis, Washington University, Simons–National Society of Black Physicists Program	2023
Ben Gebhardt, Rochester Institute of Technology, Cornell Astronomy REU Program	2023
Woodkensia Charles, Haverford College, Simons–National Society of Black Physicists Program	2022
Kaylah McGowan, University of Arizona, Simons–National Society of Black Physicists Program	2021
Dontae Milner, Eastern Illinois University, Simons–National Society of Black Physicists Program	2020
Niloofer Cheraghvandi, Mohawk Valley Community College, SERCCS Program	2019
Michael Jack, Mercer County Community College, SRCCS Program	2018
Almir Tricic, Mohawk Valley Community College, SRCCS Program	2017
Tracy Paltoo, Adelphi University, LSAMP Program	2016
Dennis Dempsey, Adirondack Community College, SRCCS Program	2016
Tafari James, Haverford College, LSAMP Program	2015
Spenser Mann, Adirondack Community College, SRCCS Program	2015
Lenoi Carter, Onondaga Community College, LSAMP Program	2014
Licelotte Fernandez, SUNY New Paltz, LSAMP Program	2014

LIFETIME MEMBERSHIPS

American Association for the Advancement of Science

American Physical Society
National Society of Black Physicists
Optical Society of America
SPIE: The International Society for Optics and Photonics

PUBLICATIONS

Recent publications are available via the Astrophysics Data System (ADS, linked here or search for Niemack). According to the ADS Niemack's current refereed h-index is 54 with 176 refereed publications. 6 / 2023

Publications with fifteen or more authors have the alphabetized author list shortened to et al.

• Marks publications since 2013 for which Niemack research group members played a major role. Group member names are in **bold**. *Links are embedded in references below.*

IN PRESS OR IN REVIEW

• Y. Li, E. Biermann, S. Naess, et al. 2023. "**The Atacama Cosmology Telescope: Systematic Transient Search of 3-Day Maps,**" arXiv:2303.04767.

C. Hervias-Caimapo, et al. 2023. "**The Atacama Cosmology Telescope: Flux Upper Limits from a Targeted Search for Extragalactic Transients,**" arXiv:2301.07651.

IN PRINT

• CCAT-Prime Collaboration, et al. 2023. "**CCAT-prime Collaboration: Science Goals and Forecasts with Prime-Cam on the Fred Young Submillimeter Telescope,**" *Astrophysical Journal Supplement Series* DOI:10.3847/1538-4365/ac9838

I. Gullett, et al. 2023. "**Sidelobe Modeling and Mitigation for a Three Mirror Anastigmat Cosmic Microwave Background Telescope,**" *Applied Optics* DOI:10.1364/AO.488454

• E. M. Vavagiakis, C. J. Duell, et al. 2022. "**CCAT-prime: design of the Mod-Cam receiver and 280 GHz MKID instrument module,**" *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2630115

• S. Choi, C. Duell, et al. 2022. "**CCAT-prime: Characterization of the First 280 GHz MKID Array for Prime-Cam,**" *Journal of Low Temperature Physics* DOI:10.1007/s10909-022-02787-9

• Z. Huber, Y. Li, E. Vavagiakis, et al. 2022. "**The Simons Observatory: Magnetic Shielding Measurements for the Universal Multiplexing Module,**" *Journal of Low Temperature Physics* DOI:10.1007/s10909-022-02875-w

• H. Ebina, R. Keskitalo, J. Borrill, S. K. Choi, T. Kisner, S. Naess, M. D. Niemack, J. R. Stevens 2022. "**Wide field high cadence CMB survey designs for Chilean telescopes,**" *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2629816

• Y. Li, et al. 2022. "**CCAT-prime: the design of the epoch of reionization spectrometer detector arrays,**" *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2630209

- **Z. B. Huber, S. K. Choi, C. J. Duell, R. G. Freundt, P. A. Gallardo, B. Keller, Y. Li, L. T. Lin, M. D. Niemack, T. Nikola, D. A. Reichers, G. Stacey, E. M. Vavagiakis, B. Zou** 2022. **“CCAT-prime: the optical design for the Epoch of reionization spectrometer,”** *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2629744
- **P. A. Gallardo, et al.** 2022. **“Optical design concept of the CMB-S4 large-aperture telescopes and cameras,”** *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2626876
- C. Hill, et al. 2022. **“Atacama Cosmology Telescope: Constraints on prerecombination early dark energy,”** *Physical Review D* DOI:10.1103/PhysRevD.105.123536
- G. E. Chesmore, K. Harrington, et al. 2022. **“Simons Observatory: characterizing the Large Aperture Telescope Receiver with radio holography,”** *Applied Optics* DOI:10.1364/AO.470138
- M. Lungu, et al. 2022. **“The Atacama Cosmology Telescope: measurement and analysis of 1D beams for DR4,”** *Journal of Cosmology and Astroparticle Physics* DOI:10.1088/1475-7516/2022/05/044
- A. Sinclair, et al. 2022. **“CCAT-prime: RFSoc based readout for frequency multiplexed kinetic inductance detectors,”** *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2629722
- J. A. Connors, et al. 2022. **“Magnetic Field Sensitivity of Microwave SQUID Multiplexers,”** *Journal of Low Temperature Physics* DOI:10.1007/s10909-022-02806-9
- B. Zou, **S. K. Choi, N. F. Cothard, R. Freundt, Z. B. Huber, Y. Li, M. D. Niemack, T. Nikola, D. A. Reichers, K. M. Rossi, G. J. Stacey, E. M. Vavagiakis** 2022. **“CCAT-prime: the design and characterization of the silicon mirrors for the Fabry-Perot interferometer in the Epoch of reionization spectrometer,”** *Proceedings of the SPIE, Volume 12190* DOI:10.1117/12.2629518
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