

ERIC W. KOCH

ASSISTANT SCIENTIST, NATIONAL RADIO ASTRONOMY OBSERVATORY

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RESEARCH POSITIONS

National Radio Astronomy Observatory

May 2025 - Present

- Assistant Scientist, ngVLA
 - RADPS-ngVLA software product owner – modern domain functionality and workflow orchestration software for the ngVLA and ALMA-WSU
 - Lead for ngVLA high-level data products (HLDPs)
 - ngVLA HRS & VLBI development – Software and pipeline processing planning for HRS project
- Visiting Researcher at Harvard College Observatory

Center for Astrophysics | Harvard & Smithsonian

Oct 2020 - April 2025

- Submillimeter Array Postdoctoral Fellow (2020-2025)
 - Independent postdoctoral researcher
 - SMA observatory support (observer; proposal preparation; analysis and calibration software; assistance planning and pursuing external funding)
- National Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Fellow (2022-2024)
- Director, [Seamless Astronomy](https://seamlessastronomy.org) (2023 - 2025)
 - Institute for linking scientific data, publications, and communities
 - Lead community building across data science and software development groups at the Center for Astrophysics: seamlessastronomy.org

EDUCATION

University of Alberta | PhD in Physics

2016-2020

- Advisor: Erik Rosolowsky
- Thesis: Connecting galactic to local scales in the neutral interstellar medium across the Local Group
- Finalist, J. S. Plaskett Medal for Most Outstanding PhD Thesis in Canada

University of Alberta | MSc in Physics

2014-2016

- Advisor: Erik Rosolowsky
- Thesis: The Atomic Interstellar Medium in M33

University of British Columbia, Okanagan | Honours BSc in Physics

2010-2014

FUNDING & GRANTS AWARDED

Awarded 5 grants as PI/co-PI (\$95,000) and 4 as co-I (\$275,000).

As PI or co-PI:

Reproducible & Accessible Sub-mm Science Tutorials: Unlocking the vast SMA archive	2024
Smithsonian Scholarly Studies Program \$46,066	
➤ co-PI with G. Keating	
Unmixing the ISM: Identifying Dominant Physical Effects with JWST/MIRI Mapping of M33	
JWST Cycle 2 GO-3436 \$65,000	2024
Spatio-spectral modeling of ALMA data cubes: Insights and Challenges for ALMA-2030	
NAASC Workshop Funding \$24,000	2024
➤ SOC Chair and lead organizer for a community workshop on open-source software for radio interferometry	
Linking the Resolved Filamentary Molecular ISM to Massive Star Formation across M33	
NRAO Student Observing Support \$20,670	2023-2024
➤ Supported undergraduate researchers C. Carreira and S. Prasad for observations from 2022.1.00403.S	
Molecular Gas in the Milky Way analog NGC 891	2021
Smithsonian Scholarly Studies Program \$27,932	
➤ co-PI with D. Wilner	

As co-I:

An Operational Cloud-based Prototype of the CfA Nexus: Implementation of Multi-wavelength Use Cases	
SI Innovation Funds – PI: R. Martinez-Galarza \$64,905	2023
➤ Supporting integration of SMA data and science use cases	
The influence of superbubble feedback on molecular gas and star formation across galactic environments	
Smithsonian Scholarly Studies Program – PI: C. Lada \$10,635	2023
➤ (Partially) supported summer research for students A. Medina, T. Sonnenberg, and A. Angress	
Linking CASA to the astropy ecosystem	
ALMA Development Study - Cycle 7 – PI: A. Ginsburg \$199,905	2021
➤ Co-lead of radio-astro-tools project	
➤ Created pedagogical, online python tutorials for radio astronomy	

SELECTED AWARDS

NSERC Postdoctoral Fellowship Smithsonian Astrophysical Observatory	2022-2024
Submillimeter Array Postdoctoral Fellowship Smithsonian Astrophysical Observatory	2020-
Alberta Graduate Excellence Scholarship University of Alberta	2020
Andrew Stewart Memorial Graduate Prize University of Alberta	2019
NSERC Alexander Graham Bell Canada Graduate Scholarship - Doctorate University of Alberta	2017-2019
Queen Elizabeth II Graduate Scholarship - Masters University of Alberta	2015
NSERC Alexander Graham Bell Canada Graduate Scholarship - Masters University of Alberta	2014
Distinguished Graduate Award - Physics, Math, Statistics & Computer Science UBC Okanagan	2014
Top Oral Presenter - UBC-O Undergraduate Research Conference UBC Okanagan	2013
Upper Year Physics Award - Physics, Math, Statistics & Computer Science UBC Okanagan	2014
Deputy Vice Chancellor Scholarship UBC Okanagan	2010-2014
President's Entrance Scholarship UBC Okanagan	2010

PUBLICATIONS

Authored 88 refereed publications with >7,000 citations.

- 10 lead author/equal lead contributor (>450 citations)
- 2 papers lead by student advisees
- 7 papers currently under review

A full publication list is available on [ADS](#).

ADVISING

Mentored 4 graduate and 15 undergraduate students and interns (12 at CfA/SAO; including 5 undergraduate research theses).

TEACHING

Astronomy 98: Research Tutorial in Astrophysics Harvard University	Fall 2024
➤ Guest lecturer on “Combining Science and Software”.	
Astronomy 191 Harvard University	Winter 2023
➤ Co-led Submillimeter Array and Interferometry lab project for 6 students, incl. lecturing, course material development, and grading written reports and oral presentations.	
Astronomy 191 Harvard University	Winter 2022
➤ Co-led Submillimeter Array and Interferometry lab project for 4 students, incl. lecturing, course material development, and grading written reports and oral presentations.	
Teaching Assistant University of Alberta	2014-2018
➤ Exam supervision, grading for 100-, 200-, and 300- level Astronomy and Physics courses	
➤ Laboratory section lead for 6 100-level Engineering Physics courses	
Teaching Assistant University of British Columbia, Okanagan	2011-2013
➤ Grader for 100-level Astronomy and Physics courses	
➤ Laboratory section lead for 8 100- and 200-level Physics lab courses	
➤ In-lecture assistant and grader for 100-level “flipped-classroom” Physics lectures	

Certifications:

Graduate Teaching and Learning Level 1 Certificate University of Alberta	2017
➤ 14 hr of workshops on teaching practices, mental health and well-being	

SELECTED PRESENTATIONS

Given 32 invited talks (incl. 8 colloquia) and numerous contributed presentations.

Invited talks and Colloquia:

Data Science in Astronomy Seminar Yale	2025 Dec
Radio/millimetre/sub-millimetre Seminar CfA	2025 Dec
Science Community Webinar Green Bank Observatory	2025 Nov
STScI Galaxies Seminar STScI (remote)	2025 Feb
Follow the Monarchs: ngVLA Conference Morelia, Mexico	2024 Nov
6th Shaw-IAU Workshop on Astronomy for Education Virtual	2024 Nov
NRAO Colloquium Socorro, NM	2024 Oct

Astronomy Seminar University of Connecticut	2024 Sept
Multiphase Madness Center for Astrophysics	2024 Aug
2024 Star Formation Workshop McMaster University	2024 Aug
Star Formation and ISM Seminar Princeton University	2024 Feb
Galaxy Formation Seminar Flatiron Institute	2024 Feb
Galaxy Evolution Seminar Oxford University (remote)	2024 Jan
Astronomy Seminar University of Wisconsin, Madison	2023 Nov
Alumni talk at Graduate Physics Symposium University of Alberta (remote)	2023 Sep
Astronomy Seminar University of Hertfordshire (remote)	2023 Jun
Astronomy Seminar Tufts University	2023 Feb
ALMA Science in Nearby Galaxies: ALMA Status and Plans for Increased Capability AAS 241	2023 Jan
Astronomy Seminar McGill University	2022 Dec
CfA Seminar Center for Astrophysics	2022 Mar
Science Community Webinar Green Bank Observatory	2022 Feb
Astronomy Seminar University of Wisconsin, Madison	2021 Nov
Colloquium Green Bank Observatory (remote)	2021 Oct
Colloquium ICRAR/Curtin University (remote)	2021 Oct
Colloquium NRAO/University of Virginia (remote)	2021 Aug
Colloquium Tsinghua University (remote)	2021 Apr
Astronomy Seminar University of Connecticut (remote)	2021 Mar
Colloquium University of Florida (remote)	2020 Jul
Astronomy Seminar Michigan State University (remote)	2020 Jul
Colloquium Green Bank Observatory	2019 Apr
Invited Talk Big Apple Magnetic Fields Workshop	2019 Jan

LEADERSHIP & PROFESSIONAL ACTIVITIES

Referee for MNRAS, A&A, ApJ, PASP	2018-Present
CfA Equity, Diversity, Inclusion and Belonging committee	2023-2025
- Co-lead subcommittee on professional development	
Member of Radio/mm/sub-mm Advanced Data Products (ADP) Coordination Group	2025-Present
Member of SKA SWGs: HI and extragalactic spectral lines	2023-Present
Member of ngVLA SWG3: Galaxies and Galaxy Evolution Member	2022-Present
Member of the Interstellar Institute	2025-Present
NSF AAG review panelist	2025
JWST Cycle 4 science panelist	2025
NRAO Science Review panelist	2024-Present
JWST Cycle 2 & 3 External panelist - Stellar populations and ISM	2023/2024
Submillimeter Array Time Allocation Committee	2022-2024
HST Cycle 30 & 31 external reviewer	2022/2023

SOC Chair – Spatio-spectral modeling of ALMA data cubes: Insights and Challenges for ALMA-2030	2024
SOC & LOC Chair: “Northeastern Star and Planet Formation Meeting”	2023
SOC & LOC: “Harvard-Heidelberg Star formation workshop”	2023, 2024
SOC and LOC: “Seeing the Future – A Conference in Honor of Alyssa Goodman”	2022
SMA Science Seminar Organizer	2021-2023
➤ Co-organized weekly seminar series on radio/sub-mm/mm interferometry and related topics	
Project advisor: “ International Summer School on the Interstellar Medium of Galaxies”	2021
➤ Led a group of 6 students in a 2-week project on turbulence statistics in the interstellar medium	
LOC, Instructor, and Lecturer – SMA Interferometry Schools	2021/2022/2023/2025
➤ Led groups of 4-6 students on tutorials for radio and sub-mm interferometry	
➤ Developed python tutorials for SMA observations used by all participants	
➤ Lectures on error recognition in visibilities	
Seminar and journal club organizer for UAlberta Astronomy Group	2017-2019
➤ Co-led development of student-led weekly talk series	
➤ Organized “soft-skill” development seminars for the Astronomy group (effective presentations, visualization, ...)	
UAlberta representative – Canadian Astronomical Society Graduate Student Committee	2016-2017
➤ Co-organized student workshop at CASCA 2017 on effective paper writing	
Physics representative – Quantitative Sciences Course Union Council, UBC Okanagan	2014
Member of the American Astronomical Society	2021-Present
Student Member of the Canadian Astronomical Society (CASCA)	2017-2020

SELECTED OUTREACH

Astronomy on Tap – Hilo (cancelled due to illness)	2025 Jan
Shaw-IAU Workshop on Astronomy for Education	2024 Nov
Astronomy Research Stories Cronyn Observatory (remote)	2020 Nov
Observatory Presenter University of Alberta Observatory	2016-2019
➤ Public presentations and scheduling for community groups and Grade 3-12 classes, including >100 weekly participation in the USchool program to support rural and underprivileged schools	
➤ Developed public outreach material for presentation on meteorites, aurora, and star formation	
➤ Led Solar and night-time public observing	
Panel Member NASA/CSA Space Apps Challenge, Edmonton, Canada	2019 Oct
Outreach Talk Pint of Science, Edmonton, Canada	2019 May
Outreach Talk Royal Astronomical Society of Canada, Edmonton	2018 Dec
Outreach Talk Northern Alberta Radio Club	2018 May

PRESS

Phys.org JWST sets a new record, sees newly forming stars in the Triangulum galaxy	2023 Dec
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