

# SAMANTHA SCIBELLI

Jansky Postdoctoral Fellow — National Radio Astronomy Observatory

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Research interests: astrochemistry, low-mass star and planet formation, radio astronomy, astrobiology

## EDUCATION

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<b>University of Arizona</b> , Tucson, AZ	<i>August 2017 - August 2023</i>
Ph.D. in Astronomy & Astrophysics	<i>August 16, 2023</i>
Science Communication Certificate	<i>May 12, 2023</i>
M.S. in Astronomy & Astrophysics	<i>August 17, 2019</i>
Advisor: Prof. Yancy Shirley	

<b>Stony Brook University</b> , Stony Brook, NY	<i>August 2013 - January 2017</i>
Bachelor of Science, Physics, second Major Astronomy	Magna Cum Laude
Women in Science and Engineering (WISE) Honors College	

## RESEARCH OVERVIEW AND HIGHLIGHTS:

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~\$602,043 total in fellowship and grant funding, plus another \$41,750 in personal awards

**Proposals and Telescope Observing:** I have had 38 proposals accepted as PI (including 1 **large program, GLUCOSE**) across 8 different facilities, amounting to **over 3,000 hours of total time and including over 2,000 hours of hands-on observing** [Full list at the end, here]

**Conferences and Talks:** I have given **over 50 science talks** (+ several public talks), **19 of them invited (including 1 review talk)** [Full list at the end, here]

**Publications:** 23 total refereed articles [ADS LINK], **9 first author**. ADS stats: 419 total citations (125 first-author citations) [Full list at the end, here]

## RESEARCH APPOINTMENTS

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<b>University of Virginia, Astronomy Department</b>	Charlottesville, VA
<i>Visiting Faculty (teaching position)</i>	<i>August 2024 - present</i>

<b>National Radio Astronomy Observatory (NRAO)</b>	Charlottesville, VA
<i>Jansky Postdoctoral Fellow</i>	<i>August 2023 - present</i>

<b>University of Arizona, Steward Observatory</b>	Tucson, AZ
<i>Graduate Research Assistant &amp; NSF Fellow</i>	<i>August 2017 - August 2023</i>

<b>NASA Jet Propulsion Laboratory (JPL), Astrophysics Department</b>	Pasadena, CA
<i>NASA Sally Ride Fellow</i>	<i>January 2017 - July 2017</i>
<i>NASA UI Intern</i>	<i>August 2015 - December 2015</i>

<b>Harvard-Smithsonian Center for Astrophysics</b>	Cambridge, MA
<i>NSF REU Intern</i>	<i>June 2016 - August 2016</i>

<b>Stony Brook University, Physics and Astronomy Department</b>	Stony Brook, NY
<i>Undergraduate Researcher</i>	<i>December 2014 - January 2017</i>
<i>Exploration in STEM Researcher</i>	<i>June 2015 - August 2015</i>

**Stony Brook University, Laser Teaching Center**  
*Undergraduate Researcher*  
*Summer Research Intern*

Stony Brook, NY  
*February 2014 - May 2014*  
*July 2013 - August 2013*

**Rensselaer Polytechnic Institute, Physics and Astronomy Department**  
*Visiting Student Researcher*

Troy, NY  
*November 2010 - August 2014*

## FELLOWSHIP AND GRANT FUNDING:

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*~\$602,043 total*

**NRAO Jansky Postdoctoral Fellowship** *2023 - present*  
Prize Fellowship, totaling ~\$267,000 for three years of funding as Principle Investigator

**ALMA NRAO Student Observing Support Fellowship** *2024*  
National Radio Astronomy Observatory, \$17,043 for two summers of undergraduate stipend, as Principle Investigator (in collaboration with UVa Prof. Rob Garrod)

**51 Pegasi b Postdoctoral Fellowship (declined)** *2023*

**SOFIA Cycle 9 General Observing Grant** *2020*  
SOFIA Science Mission Operations, \$40,000 for Project #09-0155, as Principle Investigator

**Ed and Jill Bessey Scholarship in Astrobiology** *2019*  
University of Arizona Fellowship, totaling ~\$69,000 for one year of graduate stipend & tuition

**National Science Foundation Graduate Research Fellowship (NSF GRFP)** *2017 - 2022*  
Prize Fellowship, totaling ~\$209,000 for three years of graduate stipend & tuition

## HONORS AND AWARDS

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2023: College of Science Graduate Student Teaching Award  
2022-2023: P.E.O Scholar Award (PSA) for outstanding doctoral research (\$20,000)  
2022-2023: Advancing Science in America ARCS Foundation ‘Lawson Scholar’ Award (\$10,000 +tuition)  
2021-2022: Advancing Science in America ARCS Foundation ‘Lawson Scholar’ Award (\$10,000 +tuition)  
2021: Graduate Student Group Award 2021; SO Diversity, Equity and Inclusion Task Force  
2020: Green Bank Observatory Blumberg Astrobiology Travel Award (\$1,750)  
2016: Sigma Pi Sigma Physics Honor Society, Stony Brook University  
2015: Researcher of the Month, Stony Brook University

## TEACHING EXPERIENCE

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### University of Virginia / NRAO:

- Co-Instructor for ASTR 5340: Introduction to Radio Astronomy (Fall 2024)
  - Responsible for teaching half of the lectures in semester-long graduate level class
- Instructor for AAA.org course on ‘Introduction to Astrochemistry’ (Spring 2024)
  - Designed and taught five 2-hour long lectures (undergraduate level)

### University of Arizona:

- Teaching Assistant for ASTR 300B: Radiation & Matter (Fall 2022)
- Teaching Assistant for ASTR 196: Astronomical Problem Solving (Fall 2022)

- Teaching Assistant for ASTR 202: Life in the Universe (Spring 2021)
- Teaching Assistant for ASTR 170B1: The Physical Universe (Fall 2020)
  - Designed a ‘Science Journalism’ module and taught mini-lectures for class

## SCIENTIFIC MENTORING

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### University of Virginia / NRAO:

- Advisor for 2025 CASSUM summer undergraduate student **Anissa Pokorny-Yadav** and her project “Line Modeling of Carbon and Sulfur Species in Prestellar Core IRAS 16293E”
  - Product: Symposium talk as part of the CASSUM/VICO cohort
  - *expected: iPoster at AAS 247th Winter Meeting*
- Advisor for 2025-2026 SOS ALMA funded UVa undergraduate student **Nate Morin** and his project “The Influence of Shocks on Phosphorus Chemistry in NGC 1333” (\*spans two summers)
  - Product: Symposium talk with the 2025 NRAO REU cohort
  - *expected: conference presentation & publication in 2026*
- Advisor for UVa undergraduate student **Sam Meyers** and their project “Searching for biologically relevant precursors prebiotic species in the prestellar core IRAS 16293E”
  - Earned/Earning ASTR 4993 ‘Tutorial’ credit at UVa during Spring 2025 & Fall 2025
  - Product: Symposium talk with the 2025 NRAO REU cohort
  - Product: NRAO REU summer report, found here
  - *expected: iPoster at AAS 247th Winter Meeting*
- Advisor for 2024 NRAO REU undergraduate student **Anissa Pokorny-Yadav** and her project “Simple and Complex Carbon-Chain Molecules in Prestellar & Starless Cores in NGC1333”
  - Product: Symposium talk with the 2024 NRAO REU cohort
  - Product: NRAO REU summer report, found here (journal submission *in prep.*)
  - Product: Presented iPoster at AAS 245th Winter Meeting **\*Chambliss Poster Winner!**
  - Product: PI-ed follow-up IRAM 30m proposal that was A-ranked (project code: 025-25)!
- Science Mentor to high school students **Ori Shi** and **Ollie Snow** for their project “Confirmation of Methanol (CH<sub>3</sub>OH) toward Herbig Be Disk HD190073” (Fall 2023).

## COMMUNITY ENGAGEMENT

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### Academic Support & Outreach

- External expert reviewer to the PhD of Andrés Megías Toledano (2025)
- AMP-UP Mentor (Fall 2023 & 2024) - For graduate student mentees applying for postdoctoral positions, I meet with, give advice to, and provide feedback on application material. Mentees:
  - Helena Lecoq Molinos, Space Research Institute (IWF/OeAW), Graduate Student
  - Kumail Zaidi, Tufts, Graduate Student (*now a postdoc at Argonne National Laboratory*)
- Astronomy Camp Counselor (June 2018,2019,2021,2022,2023,2024) - I educate middle school and high school students about astronomy and get them interested in science and technology. I create and give lectures on star formation and radio astronomy. I also coordinate and lead the Arizona Radio Observatory (ARO) SMT & 12m radio observing for the student projects.
- Volunteer for NRAO/UVa Starr Hill Pathways program, designed to offer area youth college and career exploration (January 2024)

- NOIRLab Teen Astronomy Cafe Volunteer (throughout 2019–2023) - I assisted high school students in participating in hands on demonstrations and interactive computer activities while they listen to presentations from the scientists at NOIRLab and other institutions.
- TechPrep Mentor, Stony Brook University (Summer 2015) - I was employed as STEM summer camp counselor for middle school girls on Long Island.
- Volunteer as Mystery Women for Explore Your Opportunities (EYO) Conference (April 2014/2015) - aim to educate 7th grade girls about STEM through interactive learning techniques in Bronx, NY.

### Leadership & Service

- Serving as Journal Referee for ApJ and A&A (ongoing)
- Subject-matter Expert Reviewer in a NASA peer review (2025)
- Co-organizer for the NRAO TUNA Lunch Talk Series (Fall 2023 - present)
- Co-organizer for the Annual NRAO/GBO Post-doc Symposium (March 2024)
- AAS Chambliss Competition Poster Judge (Winter 2024 & 2025)
- Co-organizer for Steward Observatory Diversity, Equity and Inclusion Initiative (SO DEI), aimed at creating a more equitable department by implementing actionable changes through five major task forces. (2020-2023)
- Co-organizer for Steward Observatory’s Diversity Journal Club (DJC), similar to a science journal club, where we discuss topics such as gender equity and diversity in the classroom (2018-2023)
- Served on the Steward Observatory Graduate Admissions Committee (2019/2020 season)

## SCIENCE COMMUNICATION

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### Public Talks:

*Scheduled:* Charlottesville Astronomical Society (CAS) Public Lecture (April 1st, 2026)

- Charlottesville Astronomy on Tap (November 3rd, 2025)
- Girls Exploring The Universe (GETU) Camp (June 12th, 2024) *\*invited*
- McCormick Observatory Public Night at the University of Virginia (February 16th, 2024)
- ‘Space Drafts’, which is Tucson’s version of ‘Astronomy On Tap’ (April 19th, 2022)
- The Splendido Retirement Community (March 18th, 2022)
- ‘Knowledge Village’ presentation for middle-schoolers (April 2021)

### Popular Science Writing:

- Blog entry, “Hot off the disk: New detections of complex molecules in warm planet-forming disks” published on Dec 20, 2024 in the Astrochemistry Report
- News article, “Scientists: Too many satellites will hurt research,” published on Dec 10, 2020 in Green Valley News, describes how satellite communication networks will negatively affect radio astronomy.
- News article, “UA graduate student studies the chatty life of covert squirrel,” published in The Daily Wildcat, Dec 10, 2020.

- “A Witch to the Stars” memoir published July 15, 2020 on terrain.org describes my childhood and how I became interested in astronomy research.

## TECHNICAL SKILLS

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<b>Modeling &amp; Analysis</b>	RADEX, RADMC-3D, SHAPE
<b>Software &amp; Tools</b>	GILDAS/CLASS, Ds9, CARTA, CASA, IRAF
<b>Languages</b>	Python, Fortran, C++, HTML, LaTeX
<b>Github repositories:</b>	[SMT Mapping Reduction Pipeline]

## NOTABLE SCIENCE COLLABORATIONS

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**GLUCOSE (GBT L1544 Unbiased Complex Organics Survey)** *2021 - ongoing*  
*Large Legacy Program with the Green Bank Telescope (GBT; PI: S. Scibelli)*  
 \* Leading as Principle Investigator (PI). Wrote the initial successful proposal and follow-up continuation proposal to secure ~600 hours of time. Designed with team the technical setup and observing strategy.

**The ALMA Disk-Exoplanet C/Onnection (DECO) + SMT Collaboration** *2025 - ongoing*  
*Large Legacy Program with the ALMA Observatory (PI: I. Cleeves)*  
 \* Led the reduction of complimentary single-dish data from the Arizona Radio Observatory (ARO) sub-millimeter telescope (SMT), to be analyzed by other team members with a sample of the DECO disks.

**GAS (Green Bank Ammonia Survey)** *2018 - ongoing*  
*Large Legacy Program with the Green Bank Telescope (GBT; co-PIs: R. Friesen & J. Pineda)*  
 \* Participating member in the larger collaboration, i.e., giving feedback on manuscripts and follow-up proposal submissions.

## TELESCOPE TIME OBTAINED

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PI of **38 successful proposals** (including one large program, GLUCOSE, with the GBT) across 8 different facilities, amounting to **over 3,000 hours of total time and including over 2,000 hours of hands-on observing**. Additionally, I have been co-I of at least 24 successful proposals.

### Accepted Proposals as PI (38):

38. *Mapping the Spatial Distribution of Complex Molecules in L1544 with ALMA Band 1, ALMA*, Cycle 12, 26.1 hr 12m & 133.6 hr ACA
37. *Tracing the Complex Chemical Evolution in the Natal Prestellar Environment of IRAS 16293 E, ALMA*, Cycle 12, 16.5 hr 12m & 84.9 hr ACA time
36. *Deep Mapping of Extended Precursor Prebiotic Chemistry in NGC1333, Yebes 40m*, 2025B, 90 hr
35. *Dense gas mapping in the nearby face-on starburst galaxy NGC 6946*, (w/ co-PI C. Eibensteiner) **ARO SMT**, Spring 2025, 240 hrs
34. *Mapping the Spatial Distribution of Complex Molecules in L1544 with ALMA Band 1, ALMA*, Cycle 11, 26.1 hr 12m & 133.6 hr ACA
33. *Tracing the Complex Chemical Evolution in the Natal Prestellar Environment of IRAS 16293 E, ALMA*, Cycle 11, 16.5 hr 12m & 84.9 hr ACA time
32. *Phosphorous in the Earliest Stages of Low-mass Star Formation, ALMA*, Cycle 11, 2.0 hr 12m & 5.2 hr ACA **\*PI for SOS grant**

31. *A Quest for More GLUCOSE: the GBT L1544 Unbiased Complex Organics Survey*,  
**GBT**, ‘A’, 2024B, 556 hrs
30. *The Search for Triply Deuterated Methanol (CD<sub>3</sub>OH) in IRAS 16293 E*,  
**ARO 12m**, Spring 2024, 90 hrs
29. *Cataloging the Complex Chemistry towards the Highly-Deuterated Prestellar Core IRAS 16293 E*,  
**Yebes 40m**, Spring 2024, 30 hrs
28. *Phosphorous in the Earliest Stage of Low-mass Star Formation*,  
**IRAM 30m**, ‘A’, Spring 2024, 22 hrs
27. *Surveying the Complex Nitrogen Chemistry in Starless Cores in the B213E region of Taurus*,  
**IRAM 30m**, ‘B’, Winter 2023, 50 hrs
26. *Completion of the COM Survey in the Aquila Molecular Cloud II*,  
**ARO 12m**, Fall 2023, 114 hrs
25. *Confirmation of Methanol (CH<sub>3</sub>OH) toward Herbig Be Disk HD190073*,  
**ARO SMT**, Fall 2023, 20 hrs
24. *Investigating Gas-phase COMs toward the Prestellar Core IRAS 16293 E*,  
**ARO 12m**, Fall 2023, 35 hrs
23. *Completing the Census of Starless Cores with COM Detections in the Perseus Molecular Cloud*,  
**Yebes 40m**, Spring 2023, 72 hrs
22. *Deep Integration on Perseus Starless Cores*,  
**ARO 12m**, TBS time, 60 hrs
21. *Completion of the COM Survey in the Aquila Molecular Cloud*,  
**ARO 12m**, Fall 2022, 114 hrs
20. *COM Survey of ‘Typical’ Starless Cores in the Taurus, Perseus and Aquila Molecular Clouds*,  
**Yebes 40m**, Spring 2022, 72 hrs
19. *High Resolution C<sub>18</sub>O ARGUS Mapping toward Prestellar Cores in Taurus (Continuation II)*,  
**GBT**, 2022A, 20 hrs
18. *Continuation of 12m Survey of Complex Organic Molecules in Prestellar Cores in Perseus and Aquila Molecular Clouds*,  
**ARO 12m**, Spring 2022, 180 hrs
17. *Survey of Complex Organic Molecules in Prestellar Cores in Perseus and Aquila*,  
**ARO 12m**, Spring 2022, 115 hrs
16. *QBand Chemical Complexity Survey of Prestellar Core L1544*,  
**GBT**, Special Call 2021, >600 hrs
15. *High Resolution C<sub>18</sub>O ARGUS Mapping toward Prestellar Cores in Taurus (Continuation I)*,  
**GBT**, 2021A, 20 hrs
14. *Continued J=(3-2) Molecular Mapping of the Dense B10 Region of Taurus*,  
**ARO SMT**, Fall 2020, 220 hrs
13. *High Resolution C<sub>18</sub>O ARGUS Mapping toward Prestellar Cores in Taurus*,  
**GBT**, 2020B, 20 hrs
12. *Complementary Zero-spacing Map for ALMA ACA Observations*,  
**ARO 12m**, Spring 2020, 74 hrs

11. *Novel J=(3-2) Molecular Mapping of the Dense B10 Region of Taurus*,  
**ARO SMT**, Spring 2020, 120 hrs
10. *Far-IR Dust and Magnetic Field Alignment Study of the Collapse Candidate Starless Core L63*,  
**SOFIA (joint with GBT)**, Cycle 9, 2.82 hrs (5.38 hrs on GBT)\***grant PI**
9. *Spatial Distribution of COMs within a Starless Core*,  
**ALMA**, ACA Supplemental Call, 19.8 hrs, Cycle 7
8. *High Resolution 1mm Continuum Study of the B10 Star Forming Region (Continuation)*,  
**IRAM 30m**, ‘A’, Summer 2019, 17 hrs
7. *N-Bearing Complex Organic Molecules: A Survey of Prestellar Cores*,  
**ARO 12m**, Fall 2019, 350 hrs
6. *Survey of Highly Complex Organic Molecules in Young Prestellar Cores*,  
**ARO 12m**, Spring 2019, 350 hrs
5. *High Resolution 1mm Continuum Study of the B10 Star Forming Region*,  
**IRAM 30m**, ‘B’, Winter 2018, 35 hrs
4. *Mapping Inflow/Outflow Tracers in Massive Star-Forming Clumps*,  
**ARO SMT**, Fall 2018, 48 hrs
3. *A Deeper Look at Acetaldehyde in Prestellar Cores*,  
**ARO 12m**, Spring 2018, 210 hrs
2. *Auxiliary [SII] Observations of the Dying Star V Hydrae*,  
**MMT**, 2017 Jan-Jun Call, 3 half nights
1. *A Comprehensive Search for Methanol in Prestellar Cores*,  
**ARO 12m**, Fall 2017, 80 hrs

Accepted Proposals as co-I (24):

24. *A deep, unbiased 7-10mm molecular line survey of the Fireworks Galaxy* (PI: M. Jesus Jimenez Donaire),  
**Yebes 40m**, 2025B, 68 hr
23. *\*Complex Carbon-Chain Chemistry in the Earliest Stage of Star Formation in NGC1333* (PI: A. Pokorny-Yadav),  
**IRAM 30m**, Summer 2025, ‘A’, 44 hrs **\*UG student led**
22. *Ophiuchus and Perseus Methanol Observations* (PI: L. Steffes),  
**ARO 12m**, Spring 2025, 220 hrs
21. *Uncovering a Hidden Complex Nitrile Reservoir in Planet-Forming Disks* (PI: R. Gross),  
**ALMA**, Cycle 11(+Cycle 12 Continuation), 9 hr 12m
20. *Mapping chemical complexity and deuteration in IRAS 16293 E* (PI: J. Ferrer Asensio),  
**Yebes 40m**, 2024B, 58 hr
19. *Mapping the emission of COMs toward the L1544 pre-stellar core* (PI: I. Jiménez-Serra),  
**Yebes 40m**, 2024B, 145 hr
18. *Mapping NH<sub>2</sub>D Emission in Starless Cores* (PI: Y. Shirley),  
**GBT**, 2024B, ‘B’, 23 hrs
17. *Exploiting a ‘shocked’ core to quantify the prestellar chemical inventory* (PI: S. Spezzano),  
**IRAM 30m**, Summer 2024(+Winter 2024 and +Summer 2025 Continuation), ‘B’, 5 hrs

16. *Probing the Central Region of the Prestellar Core L183* (PI: Y. Shirley),  
**LMT**, 2024-S1, 'A', 4 hrs
15. *Characterizing Large-scale Gas Streamers around Planet-forming Disks* (PI: C. Law)  
**ARO SMT**, Spring 2024, 43 hrs
14. *Searching for a Hidden Reservoir of Complex Nitrile Chemistry in Disks* (PI: C. Law)  
**ARO SMT**, Fall 2023, 24 hrs
13. *The Currents of Space: Dynamical Flows at the Onset of Star Birth* (PI: G. Cosentino)  
**ARO SMT**, Fall 2023, 70 hrs
12. *Deuterium Fractionation in Infrared Dark Clouds* (PI: J. Tan & G. Cosentino)  
**ARO SMT**, Fall 2023, 65 hrs
11. *Mapping Deuterated Molecules in the Taurus Molecular Cloud* (PI: Y. Shirley),  
**IRAM 30m**, Summer 2023, 'B', 60 hrs
10. *\*A Survey of 15-Nitrogen Fractionation in Prestellar Cores* (PI: R. Squillace),  
**GBT**, 2024B, 'B', 36 hrs **\*UG student led**
9. *Probing Dust Opacity Variations: MUSTANG-2 Imaging of the prestellar core L183* (PI: Y. Shirley),  
**GBT**, 2024A, 'B', 12 hrs
8. *A survey of methyl formate and isomers in prestellar cores* (PI: Y. Shirley),  
**ARO 12m**, Fall 2022, 40 hrs
7. *Probing the Heart of a DUDE - The Central 200 AU of the Expanding Disk in the Carbon Star, V Hya* (PI: R. Sahai),  
**ALMA**, Cycle 9, 10 hr 12m
6. *Determining the origin of carbon-chain molecules in Taurus embedded protostars* (PI: Y. Yang)  
**ARO SMT**, Fall 2021, 30 hrs
5. *Surveying the chemical diversity toward Taurus embedded protostars* (PI: Y. Yang)  
**ARO SMT**, Fall 2020, 66 hrs
4. *Shocked and Scorched in the W5 Star-Forming Region* (PI: R. Sahai),  
**VLA**, 2018A, 'A', 7 hrs
3. *Distribution of methanol towards the dense cores of the L1495 filament* (PI: A. Punanova),  
**IRAM 30m**, Summer 2019 (+Winter 2018, +Summer 2018), 'B', 35 hrs
2. *High-Velocity Bullet Ejections From a Dying Star: A VLA Study of V Hya* (PI: R. Sahai),  
**VLA**, 2018A, 'B', 10 hrs
1. *The Nature of the Central Disk in V Hya: A Carbon Star Ejecting High-Velocity Bullets* (PI: R. Sahai),  
**ALMA**, Cycle 5 (+Cycle 6), 10 hr 12m & 3 hr ACA time

## CONFERENCES AND TALKS

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I have given **over 50 science talks** and more than a dozen poster presentations

### Invited Talks (19):

*Scheduled:* Prestellar core workshop, 8 -12 June, 2026, Kyushu University, Japan

*Scheduled:* UW-Madison Monday Science Seminar Series, November 24th, 2025, Madison, WI

19. Astronomy Department **Colloquium**, Nov. 10th, 2025, New Mexico State University, Las Cruces, NM
18. EAS SS8a: Astrochemical Horizons: From Galaxies to Comets, Cork, Ireland, June 24th, 2025
17. Astrochemistry Seminar, NASA GSFC, Greenbelt, MD, June 5th, 2025
16. Keynote Speaker for GBO Summer Student ‘Radio Bootcamp’, May 29th, 2025
15. Commencement Keynote Speaker for Stony Brook University Women in Science and Engineering (WISE) Honors College, May 22nd, 2025
14. Towards New Frontiers, March 10th, 2025, ESO, Garching, Germany (**\*Review Talk**)
13. IPAG/IRAM Seminar, December 12th, 2024, Grenoble, France
12. ACS AstroCheminar, October 15th, 2024, Virtual Talk
11. Centro de Astrobiologia (CAB) Seminar, September 10th, 2024, Spain
10. Astronomy Department **Colloquium**, August 22nd, 2024, University of Florida, Gainesville, FL
9. Special Astrochemistry **Colloquium**, August 20th, 2024, Florida Tech, Melbourne, FL
8. Radio Millimeter Submillimeter (RMS) Seminar, Feb. 9th 2024, CfA, Cambridge, MA
7. GBT Large Program Special Session at AAS 243rd Annual Winter Meeting, 7-11 Jan. 2024, New Orleans, LA
6. NRAO/UVa Joint **Colloquium** Series, September 28, 2023, Charlottesville, Virginia
5. The NASA Astrobiology Program’s Prebiotic Chemistry and Early Earth Environments (PCE3) Seminar Series, 1st December 2022, Virtual
4. Carnegie Observatories Lunch Talk, 20th January 2023, Pasadena, California
3. NRAO **Colloquium**, 16th November 2022, Socorro, New Mexico
2. K-Band Science Using the GBT, 19th – 21st Sep. 2022, Green Bank, West Virginia
1. EAS Symposium SS15: Molecules in starless and pre-stellar cores: tools to understand low- and high-mass star-formation, June 28 - July 2, 2021, Virtual

#### **Contributed Talks (37):**

37. Astronomy Seminar, August 19, 2025, University of Rochester, Rochester, NY
36. Stony Brook University Astronomy Department Lunch Talk, May 23rd, 2025
35. VICO/CICO Spring Workshop, May 20-22, 2025 Charlottesville, Virginia
34. Annual NRAO/GBO Postdoc Symposium, May 19-21 2024, Virtual
33. AAS 245th Winter Meeting, 12-16 Jan. 2025, National Harbor, MD
32. Fractionation II: from the Solar System to galaxies, Nov. 4-7, 2024, Florence, Italy
31. 53rd Young European Radio Astronomers Conference (YERAC), Sep. 3-6, 2024, Madrid, Spain
30. COSPAR 45th Scientific Assembly Session, July 14-21, 2024, Busan, South Korea
29. EAS Annual Meeting held at Padova Congress, Italy, from July 1-5, 2024
28. Annual NRAO/GBO Postdoc Symposium, March 19th 2024, Green Bank Observatory, WVA

27. Institute for Theory and Computation (ITC) Lunch Seminar, Feb. 8th 2024, Center for Astrophysics, Cambridge, MA
26. Astrobiology Session at AAS 243rd Annual Winter Meeting, 7-11 Jan. 2024, New Orleans, LA
25. VICO/CICO Spring Workshop, December 6-8, 2023 Charlottesville, Virginia
24. Kavli-IAU Astrochemistry Symposium, July 10-14, 2023, Traverse City, Michigan
23. The 38th Annual New Mexico Symposium, Feb. 17, 2023, Socorro, New Mexico
22. Dissertation Presentation for AAS 241st Annual Meeting, 8-12 Jan. 2023
21. From Clouds to Planets II: The Astrochemical Link, Oct. 3-7, 2022, Berlin, Germany
20. NRAO TUNA Lunch Series Talk, September 22, 2022, Charlottesville, Virginia
19. COSPAR 44th Scientific Assembly Session, July 21, 2022, Athens, Greece
18. Astrophysics Seminar, June 6, 2022, Jet Propulsion Laboratory, Pasadena, CA
17. Leiden Astrochemistry Seminar, May 12, 2022, Virtual
16. University of Arizona Origins Seminar, May 9, 2022, Steward Observatory
15. The 37th Annual New Mexico Symposium, Nov. 18, 2021, Virtual
14. Arizona Astrobiology Research Symposium, Nov. 12th, 2021, Virtual
13. ARCS Virtual Site Visit, Sep. 15th 2021, Virtual
12. Wider and Deeper at Green Bank: The New Argus-144 Instrument, Sep. 22-24, 2020, Virtual
11. Origins Seminar, July 13th, 2020, Virtual
10. Astrochemical Frontiers, June 15 - 19, 2020, Virtual Zoom Conference
9. The 35th Annual New Mexico Symposium, Feb. 2020, NRAO, Socorro, NM
8. The Physics and Chemistry of the Interstellar Medium, 2-6 Sep. 2019, Avignon, France
7. Astrochemistry: Past, Present, Future, Caltech, July 2018, Pasadena, CA
6. The Olympian Symposium 2018: gas and stars from milli- to mega- parsecs,  
Mediterranean Village Hotel & Spa, Paralia, Katerini, Greece, May 2018
5. The 33rd Annual New Mexico Symposium, NRAO, Socorro, NM, Nov. 2017
4. SAO Summer Symposium, Center for Astrophysics, Cambridge, MA, Aug. 2016
3. FLASH Talk, NOAO, January, 2019, Tucson, AZ
2. Special Astrophysics Seminar, Jet Propulsion Laboratory, Pasadena, CA, Dec. 2015
1. Physics and Nature Conference, Pace University, White Plains, NY, Nov. 2013

**Poster Presentations (14):**

14. European Astronomical Society Annual Meeting, June 27 - July 1, 2022, Virtual ePoster
13. Science and Engineering Excellence Banquet, University of Arizona, Jan. 2020
12. Star and Planet Formation (SPF2), Biosphere, Tucson, AZ, March 2018
11. American Astronomical Society Meeting, Grapevine, TX, Jan. 2017

10. Undergraduate Research and Creative Activities Symposium, Stony Brook, May 2016
9. CUWiP Women in Physics Conference, Wesleyan University, CT, January 2016
8. Exploration in STEM Symposium, Stony Brook, NY, Aug. 2015
7. Undergraduate Research and Creative Activities Symposium, Stony Brook, April 2015
6. Undergraduate Research and Creative Activities Symposium, Stony Brook, April 2014
5. Frontiers in Optics and Exhibit/Laser Science XXIX, Orlando, FL, Oct. 2013
4. Symposium for Summer Research, Stony Brook, NY, Aug. 2013
3. American Astronomical Society Meeting, Long Beach, CA, Winter 2013
2. Astronomical Society Meeting (NY), Stony Brook University, Stony Brook, NY, 2012
1. Astronomical Society Meeting (NY), Skidmore College, Saratoga, NY, 2011

## PUBLICATIONS

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**23 total refereed articles [ADS LINK]**, 9 first author, 419 total citations (125 first-author citations)

*In preparation/headed to submission OR submitted (4):*

1. *The Evolution of Carbon-chain Chemistry from Prestellar to Protostellar Cores in The Taurus Molecular Cloud*  
Ramos, J., Yao-Lun, Y., Sakai, N., **Scibelli, S.**, Murillo, N., *submitted to A&A*
2. *\*Carbon-chain chemistry in starless and prestellar cores in the Perseus Molecular Cloud*  
Pokorny-Yadav, A., **Scibelli, S.**, et al., *in prep.* \*(UG student project)
3. *c-C<sub>3</sub>H<sub>2</sub> deuteration towards pre-stellar and starless cores in the Perseus Molecular Cloud*  
Ferrer Asensio, J., **Scibelli, S.**, L. Steffes, et al., *in prep.*
4. *Overview and First Results for GLUCOSE: The GBT L1544 Unbiased Complex Organics SurVEy*  
**Scibelli, S.**, & the GLUCOSE collaboration, *in prep.*

*Major Contributions (14):*

23. *Nascent chemical complexity in the prestellar core IRAS 16293E: Complex organics and deuterated methanol*  
**Scibelli, S.**, Drozdovskaya, M. N., Caselli, P., et al., 2025, A&A, 702, A127
22. *First detections of PN, PO and PO+ toward a shocked low-mass starless core*  
**Scibelli, S.**, Megías, A., Jiménez-Serra, et al., 2025, ApJL, 985, 2
21. *NEATH IV: an early onset of complex organic chemistry in molecular clouds*  
Priestley, F. D., Clark, P. C., Ragan, S. E., **Scibelli, S.**, et al., 2025, MNRAS, 537, 3
20. *Molecular Distributions and Abundances in the Binary-Shaped Outflow of V Hya*  
Siebert, M., Sahai, R., **Scibelli, S.**, and Remijan, A., 2025, ApJ, 979, 119
19. *Survey of Complex Organic Molecules in Starless and Prestellar Cores in the Perseus Molecular Cloud*  
**Scibelli, S.**, Shirley, Y., Megías, A., and Jiménez-Serra, I., 2024, MNRAS, 533, 4
18. *3D Radiative Transfer Modeling and Virial Analysis of Starless Cores in the B10 region of the Taurus Molecular Cloud*  
**Scibelli, S.**, Shirley, Y., Schmiedeke, A., et al., 2023, MNRAS, 521, 3

17. *The Rapidly Evolving Asymptotic Giant Branch Star, V Hya: ALMA Finds a Multiring Circus with High-velocity Outflows*  
Sahai, R., Huang, P.-S., **Scibelli, S.**, et al., 2022, ApJ, 929, 59
  16. *Detection of Complex Organic Molecules in Young Starless Core L1521E*  
**Scibelli, S.**, Shirley, Y., Vasyunin, A., et al., 2021 MNRAS, 504, 4
  15. *\*A survey of CH<sub>2</sub>DOH towards starless and pre-stellar cores in the Taurus molecular cloud*  
Ambrose, H., Shirley, Y., & **Scibelli, S.** 2021, MNRAS, 891, 1 \*(UG student project)
  14. *Prevalence of Complex Organic Molecules in Starless and Prestellar Cores within the Taurus Molecular Cloud*  
**Scibelli, S.** & Shirley, Y., 2020, ApJ, 891, 1
  13. *Biases in inferring dark matter profiles from dynamical and lensing measurements*  
**Scibelli, S.**, Perna, R., & Keeton, C., 2019, MNRAS, 485, 5880
  12. *High-Velocity Bullets from V Hydrae, an AGB Star in Transition: Ejection History and Spatio-Kinematic Modeling*  
**Scibelli, S.**, Sahai, R., & Morris, M. R., 2019, ApJ, 870, 117
  11. *High-speed Bullet Ejections during the AGB-to-Planetary Nebular Transition: HST Observations of the Carbon Star, V Hydrae*  
Sahai, R., **Scibelli, S.**, & Morris, M. R., 2016, ApJ, 827, 92
  10. *Census of Blue Stars in SDSS DR8*  
**Scibelli, S.**, Newberg, H. J., Carlin, J.L., & Yanny, B., 2014, ApJS, 215, 24
- Minor Contributions (9):
9. *The Green Bank Ammonia Survey: Data Release 2*  
Pineda, J., and 24 others including **Scibelli, S.**, 2025, accepted to ApJS, arXiv:2510.10607
  8. *Alignment of dense molecular core morphology and velocity gradients with ambient magnetic fields*  
Pandhi, A., and 17 others including **Scibelli, S.**, 2023, MNRAS, 525, Issue 1, pp.364-392
  7. *Velocity-Coherent Substructure in TMC-1: Inflow and Fragmentation*  
Smith, S., and 13 others including **Scibelli, S.**, 2023, MNRAS, 519, Issue 1, pp.285-299
  6. *\*A survey of deuterated ammonia in the Cepheus star-forming region L1251*  
Galloway-Sprietsma, M., and 6 others including **Scibelli, S.**, 2022, MNRAS, 515, 5219  
\*(UG student project)
  5. *Methanol Mapping in Cold Cores: Testing Model Predictions*  
Punanova, A., and 7 others including **Scibelli, S.**, 2022, ApJ, 927, 213
  4. *Relative alignment between dense molecular cores and ambient magnetic field: the synergy of numerical models and observations*  
Chen, C.-Y., and 28 others including **Scibelli, S.**, 2020, MNRAS, 494, 1971
  3. *Velocity-coherent Filaments in NGC 1333: Evidence for Accretion Flow?*  
Chen, M. C.-Y., and 13 others including **Scibelli, S.**, 2020, ApJ, 891, 84
  2. *Droplets. II. Internal Velocity Structures and Potential Rotational Motions in Pressure-dominated Coherent Structures*  
Chen, H. H.-H., and 8 others including **Scibelli, S.**, 2019, ApJ, 886, 119
  1. *Droplets. I. Pressure-dominated Coherent Structures in L1688 and B18*  
Chen, H. H.-H., and 24 others including **Scibelli, S.**, 2019, ApJ, 877, 93

### Media & Press:

- Science Spotlight in the NRAO Newsletter, Volume 18, Issue 8, 29 August, 2025
- “Unlocking the Origins of Life: Phosphorus Discovered in the Earliest Stage of the Formation of Solar-type Stars”, IRAM newsroom, June 19, 2025 [available here]
- Featured on podcast “Astrochem Coffee”, September 2024 edition [available here]
- “Many Complex Organic Compounds –Evolved Building Blocks of Life — Are Formed Where Stars Are Being Born,” Many Worlds Column, December 14, 2022
- “Ingredients for Life Appear in Stellar Nurseries Long Before Stars are Born,” UofA News, June 11, 2020
- “COMs in Cores: Complex Chemistry in Dense Cores in the Taurus Star-Forming Region,” astrobit.es article, March 16, 2020
- “Hubble Detects Giant ‘Cannonballs’ Shooting from Star,” JPL news, October 6, 2016

### PROFESSIONAL REFERENCES

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