

Jinmi Yoon, Ph.D.

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Curriculum Vitae

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Education

- 2002 – 2008 **Ph.D. Physics (Astrophysics)**
Department of Physics and Astronomy, Stony Brook University, NY, USA
Dissertation title: *Rotation and Evolution of A and F stars*
Advisor: Prof. Deane M. Peterson
- 1999 – 2002 **M.Sc. Physics**
School of Physics, Seoul National University, Seoul, Republic of Korea
- 1995 – 1999 **B.Sc. Physics**
Department of Physics, University of Seoul, Seoul, Republic of Korea
(graduated with a top honor and Dean's award for academic excellence)

Appointments

- 2017 – Present **JINA-CEE Postdoctoral Fellow**
Department of Physics and Joint Institute for Nuclear Astrophysics–Center for the evolution of the elements, University of Notre Dame, IN USA
- 2015 – 2017 **Postdoctoral Research Associate**
Department of Physics and Joint Institute for Nuclear Astrophysics–Center for the evolution of the elements, University of Notre Dame, IN USA
- 2001–2002 **Adjunct faculty (lecturer and lab instructor)**
Department of Physics, University of Seoul, Seoul, Republic of Korea

Awards/Honors/Achievements

- 2017–present **JINA-CEE Postdoctoral Fellowship**, University of Notre Dame
- 2016–present **AAS Astronomy Ambassador program cohort**, Astronomical Society of the Pacific (ASP) & American Astronomical Society (AAS)
- 2000 – 2001 **Brain Korea 21 scholarship**, School of Physics, Seoul National University
- 1999 **Dean's award** (from the College of Liberal Arts and Sciences) for academic excellence, University of Seoul
- Graduated with a top honor**, the department of Physics, The University of Seoul
- 1995 – 1998 **Scholarship for academic excellence/top 3 highest class rank**, the department of Physics, University of Seoul

Research Interests

Galactic archaeology	■ The nature of the first-generation of stars through chemodynamical analysis of the most metal-poor stars, in particular, carbon-enhanced metal-poor (CEMP) stars in the Galactic halo and the ultra-faint dwarf (UFD) galaxies
Near-field cosmology	■ Formation and evolution of galaxies in the early Universe
Galactic chemical evolution	■ Evolution of chemical elements throughout the Galactic assembly history, in particular, its early enrichment history
Nuclear astrophysics	■ Origin and evolution of elements and first-star nucleosynthesis (quiescent stellar burning processes and neutron-capture processes such as s-process, i-process, and r-process)
Stellar Astrophysics	■ Stellar evolution and (rapid) rotation of intermediate-mass and massive stars

Research Publications

An inactive publication gap during 2011–2014 is due to an extended family leave.
Each article with citations can be also found at [my ADS library](#) and [my ORCID link](#).

* Students I have mentored.

First- and Second-Authored Peer Reviewed Journal Articles

1. Dietz*, S. E., Yoon, J., Beers, T. C. & Placco, V. M. *The Metallicity Gradient and Complex Formation History of the Outermost Halo of the Milky Way* May 2020. doi:[10.3847/1538-4357/ab7fa4](#). arXiv: [1911.11140 \[astro-ph.GA\]](#).
2. Yoon, J., Whitten*, D. D., Beers, T. C., Lee, Y. S., Masseron, T. & Placco, V. M. *Identification of a Group III CEMP-no Star in the Dwarf Spheroidal Galaxy Canes Venatici I* May 2020. doi:[10.3847/1538-4357/ab7daf](#). arXiv: [1910.10038 \[astro-ph.SR\]](#).
3. Yoon, J., Beers, T. C., Tian*, D. & Whitten*, D. D. *Origin of the CEMP-no Group Morphology in the Milky Way*, *The Astrophysical Journal*, 878, 97 June 2019. doi:[10.3847/1538-4357/ab1ead](#). arXiv: [1904.02758 \[astro-ph.SR\]](#).
4. Yoon, J., Beers, T. C., Dietz*, S., Lee, Y. S., Placco, V. M., Da Costa, G., Keller, S., Owen, C. I. & Sharma, M. *Galactic Archeology with the AEGIS Survey: The Evolution of Carbon and Iron in the Galactic Halo*, *The Astrophysical Journal*, 861, 146, July 2018. doi:[10.3847/1538-4357/aaccea](#). arXiv: [1806.04738 \[astro-ph.SR\]](#).
5. Yoon, J., Beers, T. C., Placco, V. M., Rasmussen*, K. C., Carollo, D., He, S., Hansen, T. T., Roederer, I. U. & Zeanah, J. *Observational Constraints on First-star Nucleosynthesis. I. Evidence for Multiple Progenitors of CEMP-No Stars*, *The Astrophysical Journal*, 833, 20, Dec. 2016. doi:[10.3847/0004-637X/833/1/20](#). arXiv: [1607.06336 \[astro-ph.SR\]](#).
6. Yoon, J., Peterson, D. M., Kurucz, R. L. & Zagarelli, R. J. *A New View of Vega's Composition, Mass, and Age*, *The Astrophysical Journal*, 708, 71, Jan. 2010. doi:[10.1088/0004-637X/708/1/71](#).
7. Yoon, J., Peterson, D. M., Zagarelli, R. J., Armstrong, J. T. & Pauls, T. *The Effect of Rotation on the Spectrum of Vega*, *The Astrophysical Journal*, 681, 570, July 2008. doi:[10.1086/588550](#). arXiv: [0803.3145 \[astro-ph\]](#).
8. Yoon, J., Peterson, D. M., Armstrong, J. T., Clark James H., I., Gilbreath, G. C., Pauls, T., Schmitt, H. R. & Zagarelli, R. J. *The Effect of Rotation on Calibrators for Ground-based Interferometry*, *Publications of the Astronomical Society of the Pacific*, 119, 437, Apr. 2007. doi:[10.1086/518270](#).

Co-Authoring Peer Reviewed Journal Articles

9. Lee, Y. S., Beers, T. C., Kim, Y. K., Placco, V., **Yoon, J.**, Carollo, D., Masseron, T. & Jung, J. *Chemical Cartography. I. A Carbonicity Map of the Galactic Halo* Feb. 2017. doi:[10.3847/1538-4357/836/1/91](https://doi.org/10.3847/1538-4357/836/1/91). arXiv: [1702.00195](https://arxiv.org/abs/1702.00195) [astro-ph.GA].
10. Placco, V. M., Frebel, A., Beers, T. C., **Yoon, J.**, Chiti, A., Heger, A., Chan, C., Casey, A. R. & Christlieb, N. *Observational Constraints on First-Star Nucleosynthesis. II. Spectroscopy of an Ultra metal-poor CEMP-no Star* Dec. 2016. doi:[10.3847/0004-637X/833/1/21](https://doi.org/10.3847/0004-637X/833/1/21). arXiv: [1609.02134](https://arxiv.org/abs/1609.02134) [astro-ph.SR].
11. Hansen, T. T., Andersen, J., Nordström, B., Beers, T. C., Placco, V. M., **Yoon, J.** & Buchhave, L. A. *The role of binaries in the enrichment of the early Galactic halo. III. Carbon-enhanced metal-poor stars - CEMP-s stars* Apr. 2016. doi:[10.1051/0004-6361/201527409](https://doi.org/10.1051/0004-6361/201527409). arXiv: [1601.03385](https://arxiv.org/abs/1601.03385) [astro-ph.SR].
12. Hansen, T. T., Andersen, J., Nordström, B., Beers, T. C., Placco, V. M., **Yoon, J.** & Buchhave, L. A. *The role of binaries in the enrichment of the early Galactic halo. II. Carbon-enhanced metal-poor stars: CEMP-no stars* Feb. 2016. doi:[10.1051/0004-6361/201527235](https://doi.org/10.1051/0004-6361/201527235). arXiv: [1511.08197](https://arxiv.org/abs/1511.08197) [astro-ph.SR].
13. Hansen, T. T., Andersen, J., Nordström, B., Beers, T. C., **Yoon, J.** & Buchhave, L. A. *The role of binaries in the enrichment of the early Galactic halo. I. r-process-enhanced metal-poor stars* Nov. 2015. doi:[10.1051/0004-6361/201526812](https://doi.org/10.1051/0004-6361/201526812). arXiv: [1509.05344](https://arxiv.org/abs/1509.05344) [astro-ph.SR].

Pre-prints

14. Aprahamian, A., Surman, R., Frebel, A., McLaughlin, G. C., Arcones, A., Balantekin, A. B., Barnes, J., Beers, T. C., Holmbeck, E. M., **Yoon, J.**, Brodeur, M., Sprouse, T. M., Vassh, N., Cizewski, J. A., Clark, J. A., Cote, B., Couch, S. M., Eichler, M., Engel, J., Ezzeddine, R., Fuller, G. M., Giuliani, S. A., Grzywacz, R., Han, S., Horowitz, C. J., Kankainen, A., Korobkin, O., Kwiatkowski, A. A., Lawler, J. E., Lippuner, J., Litvinova, E., Mathews, G. J., Mumpower, M. R., Naimi, S., Nazarewicz, W., O'Connor, E., O'Shea, B. W., Perego, A., Perdikakis, G., Radice, D., Richers, S., Roberts, L. F., Robin, C., Roederer, I. U., Siegel, D. M., Schunck, N., Spyrou, A. & Zhu, Y.-L. *FRIB and the GW170817 Kilonova* Sept. 2018. arXiv: [1809.00703](https://arxiv.org/abs/1809.00703) [astro-ph.HE].

Conference Proceedings

15. Dietz*, S., Beers, T. C., Placco, V. M., **Yoon, J.** & AEGIS Collaboration. *Kinematic and Chemical Analysis of AEGIS Survey Stars in IAUS 334 Rediscovering Our Galaxy* (eds Chiappini, C., Minchev, I., Starkenburg, E. & Valentini, M.) **334** (Aug. 2018), 283–284. doi:[10.1017/S1743921317006895](https://doi.org/10.1017/S1743921317006895).
16. Lee, Y. S., Beers, T. C., **Yoon, J.**, Kim, Y. K. & Jeong, J. *Assembly of the Galactic Halo System Based on Carbon-Enhanced Metal-Poor Stars in IAUS 334 Rediscovering Our Galaxy* (eds Chiappini, C., Minchev, I., Starkenburg, E. & Valentini, M.) **334** (Aug. 2018), 327–328. doi:[10.1017/S1743921317007529](https://doi.org/10.1017/S1743921317007529).
17. Rasmussen*, K. C., Beers, T. C., Placco, V. M., **Yoon, J.** & Dietz*, S. *Measurement of [Fe/H] and [C/Fe] for Metal-Poor Stars from the RAVE Survey in IAUS 334 Rediscovering Our Galaxy* (eds Chiappini, C., Minchev, I., Starkenburg, E. & Valentini, M.) **334** (Aug. 2018), 353–354. doi:[10.1017/S1743921317007001](https://doi.org/10.1017/S1743921317007001).
18. **Yoon, J.**, Whitten*, D. D., Beers, T. C., Placco, V. M., Lee, Y. S., Dietz*, S., Gudin*, D. & Rasmussen*, K. C. *Lifting the Veil on Ultra Metal-Poor Stars in the Outermost Halo in IAUS 334 Rediscovering Our Galaxy* (eds Chiappini, C., Minchev, I., Starkenburg, E. & Valentini, M.) **334** (Aug. 2018), 389–390. doi:[10.1017/S174392131700792X](https://doi.org/10.1017/S174392131700792X).
19. **Yoon, J.**, Peterson, D. M., Armstrong, T., Clark James H., I., Gilbreath, C., Pauls, T. & Schmitt, H. R. *Early type stars as calibrators for ground-based interferometry in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series 6268* (June 2006), 626848. doi:[10.1117/12.670309](https://doi.org/10.1117/12.670309).

Presentations

Invited Talks and Seminars

- Dec 2019 ■ "Understanding cosmic origins with the relics of the first stars", Colloquium at Carnegie Observatories, CA
- Jun 2019 ■ "We are Star Stuff: Galactic Archaeology and the Origin of the Elements", REU seminar talk, University of Notre Dame, IN
- May 2019 ■ "First-star nucleosynthetic imprints in the Milky Way and its satellite dwarf galaxies", 2019 JINA-CEE Frontiers meeting, East Lansing, MI
- Dec 2018 ■ "Decoding the Stellar Fossils of the First Stars", Astronomy colloquium talk, Astronomy program at Seoul National University, Seoul, Korea
- "Unraveling the Assembly History of the Galactic halo with CEMP-no Stars", Colloquium talk, Korea Astronomy and Space Science Institute, Daejeon, Korea
- Oct 2017 ■ "Galactic Archeology: Study of the Early Universe with Ancient Stars", the department of Physics and Astronomy at Indiana University at South Bend, South Bend, IN
- Jul 2017 ■ "Galactic Archeology: Study of the Early Universe with Metal-Poor Stars", Astronomy seminar at Department of Astronomy & Space Science, Chungnam National University, Daejeon, Korea
- Sep 2016 ■ "Near-Field Cosmology with Carbon-Enhanced Metal-Poor stars", Astrophysics seminar, at Department of Physics, University of Notre Dame, IN

Contributed Talks

- Mar 2020 ■ "Stochastic Galactic Chemical Evolution" at JINA Galactic Chemical Evolution workshop, MIT, USA
- Sep 2019 ■ "Origin of CEMP-no morphology in the Milky Way halo" at CEMP stars as Probes of First-Star Nucleosynthesis, the IMF, and Galactic Assembly, University of Geneva, Switzerland
- Dec 2018 ■ "The Origin of CEMP-no: Connection to the Satellite Dwarf Galaxies" at Stellar Archeology as a Time Machine to the First Stars, Kavli IPMU, Japan
- May 2018 ■ "Near Field Cosmology with most metal-poor stars" at Enzo Workshop 2018, Atlanta, GA
- Nov 2017 ■ "Lifting the Veil of Ultra Metal-Poor stars in the Outermost Galactic Halo" at A Celebration of CEMP & Gala of GALAH workshop, Melbourne, Australia
- Aug 2017 ■ "Lifting the Veil of Ultra Metal-Poor stars in the Outermost Galactic Halo" at Giant Magellan Telescope Community meeting, Tarrytown, NY
- Feb 2017 ■ "Best and Farthest: Searching for Ultra Metal-Poor stars in the Outermost Galactic Halo" at JINA-CEE Frontiers meeting, Lansing, MI
- Jan 2017 ■ "Best and Farthest: Searching for Ultra Metal-Poor stars in the Outermost Galactic Halo" at the 229th American Astronomical Society Meeting, Grapevine, TX
- Sep 2016 ■ "Evidence for Multiple Progenitors of CEMP-no Stars" at Precision Spectroscopy 2016 workshop, Porto Alegre, Brazil
- Oct 2008 ■ "Updating Vega's mass, age, and evolutionary status" at the Astronomical Society of New York, New York, IN

Presentations (continued)

- Apr 2007 ■ "The effects of rotation on early type stars as ground-based interferometry calibrators" at the Astronomical Society of New York, Albany, NY

Posters

- Jan 2020 ■ "Origin and evolution of the CEMP-no stars in the Galaxy and its satellite dwarf galaxies" at the 235th American Astronomical Society meeting, Honolulu, HI
- Jul 2017 ■ "Lifting the Veil of Ultra Metal-Poor stars in the Outermost Galactic Halo" at 334 IAU symposia, Potsdam, Germany
- Apr 2017 ■ "Searching for Ultra Metal-Poor stars in the Outermost Galactic Halo" at JINA-CEE NSF review site visit, Michigan State University, East Lansing, MI
- Aug 2016 ■ "Absolute Carbon Abundance Distribution of Carbon-Enhanced Metal-Poor stars" at The First Stars conference, Heidelberg, Germany
- Mar 2016 ■ "Carbon Plateaus among Carbon-Enhanced Metal-Poor stars" at 2016 JINA-CEE frontiers meeting, South Bend, IN
- Jan 2016 ■ "Carbon Plateaus among Carbon-Enhanced Metal-Poor stars" at the 227th American Astronomical Society meeting, Kissimmee, FL
- Jun 2015 ■ "Tracing Ultra Faint Dwarf galaxies with CEMP-no stars" at Local Group Astrostatistics conference, University of Michigan at Ann Arbor, MI
- Mar 2015 ■ "Searching for Ultra Faint Dwarf galaxies using CEMP-no stars" at JINA-CEE frontiers in Nuclear Astrophysics, Michigan State University, East Lansing, MI
- May 2006 ■ "Early type stars as calibrators for ground-based interferometry" at the International Society for Optical Engineering, Orlando, FL

Observations/Proposals

- 2016 – Present ■ **Large Binocular Telescope (LBT)**
 – PEPsi (as Co-I, PI: Timothy Beers) 2017B (5 hours)
 – MODS (as PI): 2016B (2.8 hours), 2017A (12 hours), 2017B (4 hours), 2018A (4 hours), 2018B (4 hours), 2019A (2 hours), 2019B (2 hours)
- 2017 – Present ■ **Gemini Telescope**
 – GMOS Gemini Fast turnaround program 2017A (Co-I, 5.5 hours granted, PI: Vinicius Placco)
 – GMOS Gemini Fast turnaround program 2017B (PI, 6.3 hours granted)
 – GRACES K-GMT Science Program 2018B (Co-I, 10 hours granted, PI: Young Sun Lee)
- 2020– Present ■ **Subaru Telescope**
 – IRD (InfraRed Doppler) 2020A observation (Co-I, one night granted, PI: Wako Aoki)

Research Experience

- 2018–Present **Galactic chemical evolution with Dr. Benoit Côté (Konkoly Observatory, Hungary)**
Developing stochastic Galactic chemical evolution code using [NuGrid pipeline \(https://nugrid.github.io/NuPyCEE/index.html\)](https://nugrid.github.io/NuPyCEE/index.html) to study the effect of stochastic star formation on Galactic chemical evolution
- 2015–Present **Galactic archaeology with Prof. Timothy C. Beers**
JINA-CEE Postdoctoral Fellow (2017–present) and Postdoctoral Associate (2015–2017) at the department of Physics and JINA-CEE, University of Notre Dame
- 2004–2008 **Stellar Rapid Rotation and Evolution of A and F stars with Prof. Deane M. Peterson**
Graduate Research Assistant at the department of Physics and Astronomy, Stony Brook University
Ph. D. Dissertation titled “Rotation and Evolution of A and F stars”
- Summer 2004 **Stellar Imager Design Reference Mission with Prof. Fred Walter**
Graduate Research Assistant at the department of Physics and Astronomy, Stony Brook University
• Developed the observation scheduling code using IDL language
- Summer 2003 **Photometry Reduction with Prof. Michal Simon**
Graduate Research Assistant at the department of Physics and Astronomy, Stony Brook University
- 2000–2001 **High Energy Physics with Prof. Soo-Jong Rey**
Graduate Research Assistant at the School of Physics, Seoul National University
Master of Science thesis titled "Closed string dynamics in tensor fields"

External Funding/Travel Grants

- Feb 2020 **Travel grant from International Research Network for Nuclear Astrophysics (iReNA) to visit Konkoly Observatory for collaboration, Hungary**
- Jan 2020 **Travel grants from the Department of Physics and the College of Science at University of Notre Dame, the AAS 235 meeting, Honolulu HI**
- Dec 2018 **Travel grant from a conference, Stellar Archaeology as a Time Machine to the First Stars, IMPU, Japan**
AAS 2018B International travel grant for a travel to a conference, Stellar Archaeology as a Time Machine to the First Stars, Kavli IPMU, Japan
- Jul 2018 **Full travel grant from a workshop, FRIB Theory Alliance r-process meeting**
- May 2018 **Full travel grant from ENZO user tutorial workshop**
- Nov 2017 **AAS 2017B International travel grant for a trip to a conference, A celebration of CEMP and gala of GALAH, Melbourne, Australia**
- Jul 2017 **IAU travel grant, Rediscovering the Galaxy, IAU symposium 334 at Potsdam, Germany**
- Jan 2017 **Travel grant from Astronomical Society of Pacific & AAS to participate AAS Astronomy Ambassador Program**
- Jun 2006 **Partial travel grant from Astronomical Society of New York to attend Michelson Summer Workshop in Pasadena, Caltech**

External Funding/Travel Grants (continued)

- Partial Travel Grant from Michelson Summer Workshop, in Pasadena, California Institute of Technology
 - Research Travel Award from Stony Brook University Graduate Student Organization to attend Michelson Summer Workshop, in Pasadena, California Institute of Technology
- 2000–2001 ■ Brain Korea 21 scholarship, School of Physics, Seoul National University
- 1996–1998 ■ Full Scholarship (full tuition waived for 3 years) for 3 highest class rank, Department of Physics, University of Seoul
- 1995 ■ Scholarship (tuition partially waived for a semester), Department of Physics, University of Seoul

Grant Review Experience and Workshops

- Mar 2019 ■ NSF Astronomy & Astrophysics Grant Review panelist
- May 2018 ■ Writing Successful Grants workshop held at the University of Notre Dame

Teaching Experience

- May 2019 ■ Summer school lecturer, JINA-CEE First Frontiers Summer School, Michigan State University, East Lansing, MI
 - Lecture about stellar evolution and elemental production processes
- 2002–2004 ■ Graduate Teaching Assistant, Department of Physics and Astronomy, Stony Brook University
 - Introductory Astronomy, Planetary Sciences, Physics Labs
- 2001–2002 ■ Adjunct Faculty (lecturer and Lab instructor), Department of Physics, University of Seoul
 - Introductory Physics I and II classes for engineering and science students
- 1999–2001 ■ Graduate Teaching Assistant, School of Physics, Seoul National University
 - Grading for introductory Physics I and II classes for engineering and science students for 4 semesters
- 1998–1999 ■ Undergraduate Teaching Assistant, Department of Physics, University of Seoul
 - Tutoring teaching university-level physics to a high school student
- 1997 ■ Tutoring calculus to a high school student

Teaching Workshops

- Attended several teaching workshops held at University of Notre Dame (Kaneb Center for Teaching and Learning)
- 2017 ■ Beyond the Abstract: Teaching with Scientific Literature
- Maker Series: Adobe Spark Video
- A Landscape View of Digital Teaching and Learning: How to Jump in
- Helping Students in Distress
- Understanding and Fostering Student Motivation
- 2016 ■ Teaching Writing across Disciplines

Teaching Workshops (continued)

- Foundations of Teaching in STEM Session I-IV
- Once Upon a Time: Storytelling as a Tool for Teaching and Learning

Mentoring Experience

- 2019–Present ■ Leading and mentoring a group of graduate students (Dmitrii Gudin, Devin Whitten, and Joseph Zepeda) for a project (CASPER; CEMP Group Assignment and Stellar Parameter Estimation Routine), which analyzes very cool ($3500 < T_{\text{eff}} < 4500$ K) CEMP stars and develops a python stellar parameter estimation routine package for cool CEMP stars.
- 2017–2018 ■ Di Tian (REU student at University of Notre Dame and undergraduate student from Xi'an Jiaotong University, China)
- now a Ph D student at Tsinghua University
 - kinematics studies of the high latitude high proper motion stars
 - Explored A(C)-[Fe/H] relation of satellite dwarf galaxies
 - Led to a publication for the Astrophysical Journal (Yoon et al., 2019, ApJ, 878,97)
- 2017–2019 ■ Dmitrii Gudin (Graduate student at University of Notre Dame)
- Study of galaxy formation via data of metal poor stars from cosmological simulations and the project CASPER.
- 2017–Present ■ Devin Whitten (Graduate student at University of Notre Dame)
- Developing a novel technique to derive reliable stellar parameters for very cool carbon stars
 - Led to two publications (Yoon et al. 2019 ApJ 878, 97 and Yoon et al. 2020 ApJ, 894, 7) and two articles in preparation (“CASPER: CEMP Group Assignment and Stellar Parameter Estimation Routine”)
- 2016–Present ■ Sarah Dietz (Graduate student at University of Notre Dame)
- Kinematics studies of the metal-poor stars and metallicity gradient in the Galactic halo
 - Published three articles (Dietz et al. 2018 Proceedings of IAU S334, 329, Yoon et al. 2018, ApJ, 861, 146, and Dietz et al. 2020 ApJ 894, 34)
- 2015–2016 ■ Kaitlin Rasmussen (Graduate student at University of Notre Dame)
- First-star nucleosynthesis using CEMP stars
 - led to a publication (Yoon et al., 2016, ApJ, 833, 20)
- Summer 2005 ■ Danielle Kumpulanian (REU student from Rensselaer Polytechnic Institute at Stony Brook University)
- Helping basic linux operation and programming

Outreach Activities

- 2020 ■ Astronomy Club (3rd graders), Kennedy Primary Academy, South Bend, IN
- A public outreach talk and demo (emission spectroscopy using spectrum tubes) titled “Origin of the Elements: Star Stuff”
- 2019 ■ *Our Universe Revealed* series, an outreach public program at the Department of Physics at University of Notre Dame
- A public outreach talk titled “Galactic Archaeology”

Outreach Activities (continued)

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|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | ■ South Bend community science fair ‘Science Alive’ for general public audience
– Lead an activity of explaining body composition and the origins of the elements |
| 2017 | ■ Great American Solar Eclipse
–Help with public observation |
| 2016 | ■ JINA-CEE Art2Science Camp for 2–8th grade students
– Leading Atomic spectroscopy activity |
| | ■ Michiana Astronomical Society Meeting, South Bend, IN
– A public outreach talk titled “Galactic Archaeology: Search for the oldest stars” |
| | ■ South Bend community science fair ‘Science Alive’ for general public audience
– led an activity explaining the nature of outer space using vacuum chambers |
| 2016–Present | ■ AAS Astronomy Ambassador |
| 2004–2008 | ■ Public observation sessions at Stony Brook University |

Professional Associations

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|--------------|-------------------------------------------------------------------------------------|
| 2016–Present | ■ AAS Astronomy Ambassador cohort 2016 |
| 2015–Present | ■ Joint Institute for Nuclear Astrophysics–Center for the Evolution of the Elements |
| 2006–Present | ■ American Astronomical Society (AAS) |

Service

- 2020-Present
- Referee, Astronomy & Astrophysics
- 2019
- Serving as a mentor for Advancing Women Leaders program at University of Notre Dame
 - Co-organizer and lecturer, First Frontiers Summer School, Michigan State University, East Lansing, MI
 - Grant review panelist, National Science Foundation, 2019 Astronomy and Astrophysics Grant Review
- 2018
- Organizing chairperson, JINA-CEE Frontiers in Nuclear Astrophysics, University of Notre Dame, IN University of Notre Dame, IN
 - Featured at <http://www.jinaweb.org/docs/Newsletters/JINA-CEE-Newsletter-September-2018Final.pdf>
 - Overseeing local and scientific organizing for both Junior Researchers Workshop (~ 70 people) and the main conference (~ 130 people)
 - The main conference consisted of invited science talks, contributed talks, poster sessions, and breakout sessions.
 - Offered a diversity & inclusion talk titled as “Blinded to Excellence” based on neuroscience and behavioral studies.
 - Junior Research Workshop offered scientific writing, grant writing, publishing AAS journals, speaking skills, outreach workshop along with overview talks and contributed talks
- 2017
- Reviewer, Gemini Fast Turnaround Program proposals
 - Co-organizer, JINA-CEE Frontiers in Nuclear Astrophysics, East Lansing

Service (continued)

- Session chair, Junior Researcher workshop, JINA-CEE Frontiers in Nuclear Astrophysics, East Lansing, MI
- 2016 ■ Co-organizer, JINA-CEE Frontiers in Nuclear Astrophysics, South Bend, IN
- 2016 – Present ■ AAS Astronomy Ambassador, Astronomical Society of Pacific and American Astronomical Society

Miscellaneous Experience

Computing and Data Science

- Coding languages ■ C, IDL, Python
- Data exploration ■ Python, R, PostgreSQL, Matplotlib, gnuplot
- Spectroscopy ■ IRAF, SSPP, n-SSPP, MOOG, SMH, modsCCDRed
- Simulations ■ NuPyCEE pipeline (Galactic Chemical Evolution codes), galpy (Kinematics code), ROCHE (Rotating star modeling code)

Project Management

- 2018–present ■ Project leader and mentor for the CCSLab project group, which analyzes very cool ($3500 < T_{\text{eff}} < 4500$ K) carbon-enhanced metal-poor stars and is developing a python stellar parameter pipeline package, University of Notre Dame
- 2018–2019 ■ Mentoring a project which explores metallicity gradient in the Galactic halo and mentoring a graduate student, Sarah Dietz, for this project
- 2017–2018 ■ Organizing chair for 2018 JINA-CEE Frontiers meeting (130+ people) and Junior researchers workshop (~ 70 people), University of Notre Dame and Joint Institute for Nuclear Astrophysics–Center for the Evolution of the Element
- Fall 1998 ■ Physics Department administrative assistant, University of Seoul, Seoul, Korea

Media/Press/Newsletters

- Sep 2018 ■ Frontiers in Nuclear Astrophysics meeting 2018 featured at JINA-CEE newsletter (<http://www.jinaweb.org/docs/Newsletters/JINA-CEE-Newsletter-September-2018Final.pdf>)
- Dec 2016 ■ “Second-generation stars identified, giving clues about their predecessors”, by Brian Wallheimer featured at Notre Dame News (<http://news.nd.edu/news/second-generation-stars-identified-giving-clues-about-their-predecessors/>), Science Daily, Phys.org, EurekAlert, eScience News.
- Aug 2016 ■ “Evidence for multiple progenitors for CEMP-no stars”, featured at JINA-CEE newsletter (<http://www.jinaweb.org/docs/Newsletters/JINA-CEE-Newsletter-4-2016.pdf>)
- Jul 2016 ■ “Hints of Universe’s Very First Stars”, by Bruce Dorminey featured at Forbes magazine (<http://www.forbes.com/sites/brucedorminey/2016/07/31/astronomers-characterize-cosmos-first-stars/#439b6fa86603>)

References

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