

# CURRICULUM VITAE

## Timothy C. Beers

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Date of Birth: June 24, 1957  
Place of Birth: Lafayette, Indiana  
Nationality: US

Employment Status: Grace-Rupley Professor of Physics  
University of Notre Dame

Current Address: Department of Physics, University of Notre Dame  
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Notre Dame, IN, 46556

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### Education

#### Harvard University

Ph.D. in Astronomy, November 1983  
Thesis: "Dynamical Studies of Clusters of Galaxies"  
Advisor: Margaret J. Geller

A.M. in Astronomy, November 1980

#### Purdue University

B.S. in Physics, Summa Cum Laude, June 1979  
B.S. in Metallurgical Engineering, Summa Cum Laude, June 1979

### Employment History

Grace-Rupley Professor of Physics: University of Notre Dame: 2019–Present  
Notre Dame Chair in Astrophysics: University of Notre Dame: 2014–2019  
Director, Kitt Peak National Observatory: 2011–2014  
Asst/Assoc/Full/Distinguished Professor, Michigan State Univ.: 1986–2011

### Professional Societies, Honors, and Awards

Leverhulme Trust Distinguished Visiting Professorship Award 2019  
Grace-Rupley Professor of Physics 2019–Present, Notre Dame  
Chinese Academy of Science PIFI Distinguished Scientist Award 2019  
Distinguished Alumnus Award, Purdue University College of Science 2017  
Fellow of the American Physical Society 2016  
Thomson-Reuters/ISI Highly-Cited Author 2009, 2014, 2015, 2016  
Notre Dame Chair in Astrophysics 2014 – 2019, Notre Dame  
Senior Visiting Professor Award 2011, Chinese Academy of Sciences  
Humboldt Senior Research Award 2009, Humboldt Foundation (Germany)

Distinguished Visiting Professor 2009, Australian National University  
University Distinguished Professor 2007, MSU  
College of Natural Science Distinguished Faculty Award 2006, MSU  
University Distinguished Faculty Award 2006, MSU  
Outreach Award Dept. of Physics & Astronomy 2006, MSU  
Scientist of the Year 2003, Impressions 5 Museum, Lansing, Michigan  
Japanese Ministerial Visiting Professor 2000, National Observatory of Japan

Joint Institute for Nuclear Astrophysics –Center for the Evolution of the Elements  
Institute for Advanced Study, University of Sao Paulo (Brazil)  
International Astronomical Union  
American Association for the Advancement of Science  
American Astronomical Society  
American Physical Society

Bantrell Post-Doctoral Research Fellow (Caltech)  
Hughes Aircraft Company Masters Fellow (Harvard)  
Argonne National Lab Summer Research Fellow (Purdue)  
Frank Gannett Undergraduate Fellow (Purdue)  
Sigma Xi -- Science Honorary (Purdue)  
Sigma Pi Sigma -- Physics Honorary (Purdue)  
Tau Beta Pi -- Engineering Honorary (Purdue)

## Research Experience

1986 – Present: Assistant/Associate/Full/University Distinguished Professor,  
Michigan State University, KPNO Director, Astronomer (NOAO),  
Grace-Rupley Professor of Physics, Notre Dame

- \* Large Binocular Telescope
- \* Keck 10m Telescope
- \* South African Large Telescope (SALT)
- \* Hobby-Eberly 9.2m Telescope
- \* European Very Large Telescope 8m (VLT)
- \* Japanese National Telescope 8m (SUBARU)
- \* Hubble Space Telescope
- \* SOAR 4.1 m Telescope
- \* CTIO 4m Telescope
- \* KPNO 4m Telescope
- \* ESO New Technology Telescope
- \* Anglo-Australian 3.9m Telescope
- \* ESO 3.6m Telescope
- \* CFHT 3.6m Telescope
- \* ARC 3.5m Telescope
- \* Italian National Telescope 3.5m (TNG)
- \* McDonald Observatory 2.7m Telescope
- \* Las Campanas du Pont 2.5m Telescope
- \* ARC 2.5m Telescope
- \* Siding Spring Observatory 2.3m Telescope
- \* McDonald Observatory 2.1m Telescope
- \* KPNO 2.1m Telescope
- \* OHP 1.9m Telescope
- \* Lowell Observatory 1.8m Telescope
- \* ESO 1.5m Telescope
- \* Danish 1.5m Telescope
- \* KPNO 1.3m Telescope
- \* CTIO 1m Telescope
- \* KPNO 0.9m Telescope

- \* CTIO Curtis Schmidt Telescope
- \* KPNO Burrell Schmidt Telescope
- \* International Ultraviolet Explorer
- \* ROSAT X-ray Satellite

1983 – 1986: Bantrell Post-Doctoral Research Fellow, Caltech

- \* Hale 5m Telescope
- \* Las Campanas du Pont 2.5m Telescope
- \* Palomar 1.5m Telescope
- \* Palomar 1.2m Telescope
- \* Arecibo 1000 ft dish

1979 – 1983: Research Fellow, Harvard/Smithsonian Center for Astrophysics

- \* SAO/UA Multiple Mirror Telescope
- \* SAO 1.5m Telescope
- \* SAO 0.6m Telescope

1980: Research Assistant, Einstein Observatory

- \* Micro-channel plate lifetime testing
- \* Einstein data analysis

1979: Member of Technical Staff, Hughes Aircraft

- \* Orbit design and mission analysis -- VOIR
- \* Venusian gravity perturbation analysis

1979: Research Assistant, Purdue University

- \* Developed control program for X-ray spectrometer

1978: Research Fellow, Argonne National Laboratory

## Teaching Experience

2014–present: Notre Dame Chair in Astrophysics, Univ. of Notre Dame

- \* PHY 10140 – Descriptive Astronomy (3 terms)
- \* PHY 10240 – Elementary Cosmology (1 term)
- \* PHY 60203 – Statistical Analysis for Modern Astronomy (3 terms)
- \* PHY 70210 – Large Scale Survey Astronomy (1 term)
- \* PHY 80202 – Stars and Stellar Nucleosynthesis (3 terms)

1986 – 2011: Assistant/Associate/Full/University Distinguished Professor, Michigan State University

- \* CBI -- Summer Courses (1 term)
- \* ISP 205 -- Integrative Studies (Astronomy) (11 terms)
- \* ISP 205L -- Integrative Studies Lab (Astronomy) (16 terms)
- \* PRO 101 -- Freshman Seminar (Origin of the Elements) (1 term)

- \* AST 119 -- Introductory Astronomy (5 terms)
- \* AST 202 -- Introductory Astronomy (Majors) (4 terms)
- \* AST 207 -- The Science of Astronomy (4 terms)
- \* AST 217 -- Introductory Astronomy (1 term)
- \* AST 229 -- Introductory Astrophysics (4 terms)
- \* AST 308 -- Galaxies and the Universe (1 term)
- \* AST 402 -- Galaxies and Cosmology (3 terms)
- \* AST 442 -- Radiational Astrophysics (2 terms)
- \* AST 462 -- Galactic Astronomy (2 terms)
- \* AST 463 -- Extragalactic Astronomy (1 term)
- \* AST 801 -- Introductory Astrophysics (1 term)
- \* AST 820 -- The Galaxy (1 term)
- \* AST 825 -- The Galaxy (1 term)
- \* PHY 957 -- Statistical Techniques (1 term)

1981 – 1982: Teaching Fellow in Astronomy, Harvard University

- \* Conducted recitation sections

1980 – 1981: Teaching Fellow in Astronomy, Harvard University

- \* Developed and instructed laboratory projects

1977 – 1979: Teaching Fellow in Physics, Purdue University

- \* Conducted Electricity and Magnetism lab
- \* Conducted Electricity and Magnetism course

1978 – 1979: Teaching Fellow in Engineering, Purdue University

- \* Conducted Mechanics of Materials lab

## Funding

2019–2022 NASA Grant – Hubble Space Telescope (\$31920)  
"Testing r–Process Nucleosynthesis Models with Two r–Process Enhanced stars"

2019–2022 NASA Grant – Hubble Space Telescope (\$60,735)  
"HD 222925: A Unique Opportunity to Study the Full Range of Nuclei Produced by a Single r–Process Event"

2018–2019 NSF Grant (\$200K) – Supplement to support Beers' contributions to the JINA–CEE Frontier Center

2017–2020: NASA Grant – Hubble Space Telescope (\$61,530),  
"The Unexplored Domains of the s–Process"

2016 – 2018: Luksic Foundation Faculty Collaboration Award (\$19,995)  
"Development of Astronomy & Astrophysics Connections with Pontificia Universidade Catolica," University of Notre Dame

- 2016 – 2017: Faculty Research Support Program Initiation Grant (\$10,000)  
“Identification of Carbon-Enhanced Metal-Poor Stars from S-PLUS  
Photometry using Artificial Neural Networks,”  
Internal Notre Dame award
- 2015 – 2018: NASA Grant – Hubble Space Telescope (\$30,979)  
“The First Detections of Phosphorus, Sulphur, and Zinc in a  
Bona-Fide Second-Generation Star”
- 2014 – 2019: NSF Grant (\$12.5 Million)  
“Physics Frontier Center: JINA – The Joint Institute for  
Nuclear Astrophysics – Center for the Evolution of the Elements”  
(Co-PI)
- 2014–2016: NSF Grant (\$130K)  
“Workshop for Data Curation”  
(Co-PI)
- 2012 – 2015: NASA Grant – Hubble Space Telescope (\$33,274)  
“The Origins of Carbon-Enhanced Metal-Poor Stars”
- 2010 – 2011: NASA Grant – Hubble Space Telescope (\$23,328)  
“Production of Heavy Elements in the Universe”
- 2009 – 2012: NSF Grant (\$121,311)  
“Distances to High Velocity Clouds”
- 2009 – 2010: NASA Grant – Hubble Space Telescope (\$18,789)  
“Cosmochronometry and Elemental Abundance  
Distribution of the Ancient Star HE1523-0901”
- 2008 – 2013: NSF Grant (\$10.0 Million)  
“Physics Frontier Center: JINA – The Joint Institute for  
Nuclear Astrophysics” (Co-PI)
- 2007 – 2010: NSF grant (\$256,740)  
“Collaborative Research: Discovery and Analysis of  
Carbon-Enhanced Stars in SDSS-I and SDSS-II”
- 2006 – 2009: NSF Grant (\$61,669)  
“High Velocity Clouds in the Milky Way”
- 2004 – 2009: MSU Research Excellence Fund (\$1.5 Million)  
“Center for the Study of Cosmic Evolution” (Co-I with  
Astronomy & Astrophysics group)
- 2003 – 2008: NSF Grant (\$4.5 Million)  
“Physics Frontier Center: JINA – The Joint Institute for  
Nuclear Astrophysics” (Co-I with H. Schatz)
- 2004 – 2007: NSF Grant (\$313,961)  
“An Intensive Search for r-Process-Enhanced Stars, and  
Abundance Patterns in the Early Galaxy”
- 2005 – 2006: NASA Grant – Hubble Space Telescope (\$11,780)  
“The Old Star CS 31082-001, The Age of the Universe,  
and the Nature of the r-Process,” (Supplement to original grant)

- 2003 – 2005: NSF Grant (\$148,787)  
 “Widefield Upgrade for the Spartan Infrared Camera” (Co-I with Astronomy & Astrophysics group)
- 2002 – 2005: NSF Grant (\$74,848)  
 “Collaborative Research: Fundamental Properties of Local Subdwarfs,” (in cooperation with D. Terndrup, Ohio State University)
- 2002 – 2004: NASA Grant – Hubble Space Telescope (\$26,123)  
 “The Old Star CS 31082–001, The Age of the Universe, and the Nature of the r-Process,” (Co-I with C. Sneden, J. Cowan)
- 2001 – 2004: NSF Grant (\$37,473)  
 “Collaborative Research: Completion of the Southern Proper Motion Survey,” (in cooperation with W. van Altena, Yale University) – Supplemental Funding
- 2001 – 2004: NSF Grant (\$230,769)  
 “The Nature of Carbon-Enhanced Metal-Poor Stars in the Galaxy”
- 2001 – 2004: NSF Grant (\$105,829)  
 “Collaborative Research: Completion of the Southern Proper Motion Survey,” (in cooperation with W. van Altena, Yale University)
- 2000 – 2002: NSF Grant (\$45,000)  
 “Collaborative Research of the Joint Institute for Nuclear Astrophysics,” (Co-I with B. Sherrill, H. Schatz, S. Austin)
- 1999 – 2001: NASA Grant – Hubble Space Telescope (\$24,500)  
 “CS 2892–052: A Rosetta Star for the Age and Early History of the Galaxy” (Co-I with C. Sneden, J. Truran, J. Cowan)
- 1999 – 2001: NASA Grant – Hubble Space Telescope (\$17,000)  
 “Abundances in Halo Stars and Galactic Element Formation” (Co-I with J. Cowan, C. Sneden, J. Truran)
- 1998 – 2000: NATO Grant (\$10,000)  
 “Search for Metal Poor Stars in the Galaxy,”  
 US/Italy/Spain Collaboration, Renewal
- 1996 – 2000 NSF Grant (\$255,000)  
 “Discovery and Analysis of Extremely Low Metallicity Stars, Horizontal-Branch Stars, and A-Type Stars in the Galactic Halo”
- 1995 – 1998: INT (NSF) Grant (\$16000)  
 “Discovery and Analysis of Extremely Low Metallicity Stars in the Thick Disk and Halo of the Galaxy,”  
 US/Australia Collaboration
- 1995 – 1997: NATO Grant (\$10,000)  
 “Search for Metal Poor Stars in the Galaxy,”  
 US/Italy/Spain Collaboration

- 1993 – 1996: INT (NSF) Grant (\$11,000)  
"Spectroscopy and Analysis of Horizontal-Branch and A-type Stars in the Galactic Halo," US/Denmark Collaboration
- 1993 – 1995: NSF Grant (\$195,000)  
"Discovery and Analysis of Extremely Low Metallicity Stars, Horizontal-Branch Stars, and A-type Stars in the Galactic Halo"
- 1993 – 1994: NASA Grant (\$18,000)  
"ROSAT Observations of the Cluster of Galaxies A2151"
- 1992 – 1993: All University Research Initiation Grant (\$3500)  
"The Abundance of Lithium in Extremely Metal-Poor Stars"
- 1991 – 1993: NSF Grant (\$36,000)  
"Small Telescopes for Observational Astronomy Laboratory"  
(Co-I with Horace Smith)
- 1990 – 1993: NSF Grant (\$185,000)  
"Discovery and Photometry of Low Metallicity and Horizontal-Branch Stars in the Galactic Halo"
- 1989: REU Supplement (\$3500)  
"Hot Stars in the Galactic Halo"
- 1989 – 1990: All University Research Initiation Grant (\$2500)  
"Relative Abundances for Extremely Metal-Poor Stars"
- 1988: REU Supplement (\$5000)  
"Calibration of Stellar Metallicities"
- 1987 – 1990: NSF Grant (\$75,000)  
"A Search for Extremely Low Metallicity Stars in the Galactic Halo"
- 1986 – 1987: All University Research Initiation Grant (\$5000)  
"A Search for Extremely Low Metallicity Stars in the Galactic Halo"

## STUDENTS WHOM I HAVE SUPERVISED

### i) PhD Students

I have served as thesis supervisor or co-supervisor for:

Sarah Dietz, who took her PhD in December, 2020, and is now seeking a job in the data analysis area.

Dmitrii Gudin, who took his PhD in July, 2020, and is now pursuing a 2<sup>nd</sup> PhD in Applied Mathematics at the University of Maryland.

Devin Whitten, who took his PhD in July, 2020, and is now working in the investment industry.

Erika Holmbeck, who took her PhD in May, 2020, and is now a postdoctoral fellow at the Rochester Institute of Technology.

Kaitlin Rasmussen, who took her PhD in April, 2020, and is now a postdoctoral fellow at the University of Michigan.

Thomas Hettinger, who took his PhD (at Michigan State University) in summer, 2015, and is presently working in the computer industry.

Daniela Carollo, who took her PhD in fall 2011 (at the Australian National University), and is presently a researcher at INAF, in Torino, Italy.

Catherine Kennedy, who took her PhD in summer, 2011, and is presently an Assistant Professor at the University of Tampa.

Jason Smolinski, who took his PhD in summer, 2011, and is presently an Associate Professor at Calvin College.

Young Sun Lee, who took his PhD in summer, 2008, and is presently a Professor at Chungnam National University in Korea.

Nathan de Lee, who took his PhD in summer, 2008, and is presently an Associate Professor at the University of Northern Kentucky.

Brian Marsteller, who took his PhD in summer, 2007, and is presently an Associate Professor at The American University in Washington, D.C.

Lamya Saleh, who took her PhD in spring, 2001, and is presently a Professor at Loyola University.

Jaehyon Rhee, who took his PhD in summer, 2000, was a Postdoctoral fellow at the University of Virginia, and with the GALEX mission at Yonsei University (Korea) and Caltech, then a staff member at the Gemini Observatory, then a research professor at Purdue University. then a lecturer at Oregon State University, and presently a data assistant researcher at Harvard/Smithsonian Center for Astrophysics/

Jeffrey Kriessler, who took his PhD in summer, 1997, was a Postdoctoral Fellow at the University of Minnesota, and presently is employed in the computer industry.

Ronald Wilhelm, who took his PhD in fall, 1995, was a computer specialist in the Department of Astronomy at the University of Texas, then a member of the faculty at Southwestern University in Texas, and is presently a Professor at the University of Kentucky.

Christina Bird, who took her PhD in spring, 1993. After completing a Postdoctoral appointment at the University of Kansas, Christina took a job as a computer systems manager in Kansas City, Kansas, and is presently working in the computer industry.

ii) Masters Students I have supervised:

Deborah Frank, who took her masters degree summer of 2005.

Dagny Ulrich, who took her masters degree spring of 1996.

Mark King, who took his masters degree spring of 1995.

Regina Daly, who took her masters degree spring of 1993.



Karl Gebhardt, who took his masters degree spring of 1990. Karl Gebhardt took his PhD at Rutgers University, was a Postdoctoral fellow at the University of Michigan, a Hubble Fellow at the University of California at Santa Cruz, and is now Professor at the University of Texas, Austin.

Steve Doinidis, who submitted a thesis. and took his masters degree spring of 1990, and is now working in the computer industry.

Jon Truax, who submitted a thesis, and took his masters degree winter of 1989.

Kevin Flynn, who took his masters degree spring of 1989.

### iii) Undergraduate Students

I have served as an advisor to many undergraduate astronomy majors over the past five years. In addition, I have supervised and, in all but a few cases, obtained research support through the REU program for the following students over the past years:

#### University of Notre Dame

Thomas Catapano  
Emma Jaques (co-author)  
Dante Komater (co-author)  
Winter Allen (REU Student)  
Spencer Clark (Notre Dame / REU Student)  
Miguel Correa (REU Student)  
Fei Ge (REU Student)  
Siyu He (REU Student, co-author)  
Phuong Hoang (REU Student)  
Travis Hodges (DISC/REU Student)  
Derek Shank (DISC/REU Student)  
Di Tian (REU Student, co-author)  
Tino Wells (REU Student)  
Yihao Zhou (REU Student)

#### Michigan State University

Jairo Alvarez (Ohio University, co-author)  
Kipp Bertke (MSU)  
William Bestman (MSU, co-author)  
Nicholas Boros (UM, Dearborn)  
Sarah Fuhrman (University of Evansville)  
Laura Green (MSU)  
Kevin Griffin (MSU, co-author)  
Julie Ann Kage (MSU, co-author)  
Julie Krugler (MSU, co-author)  
Caroline Mattson (University of Virginia, co-author)  
Peter Mulroy (MSU)  
Nikole Nielsen (MSU)  
Ryan Norris (MSU)  
Thomas Shefler (Western Michigan, co-author)  
Shannon Snider (MSU)  
Eric Sullivan (MSU)  
Andrew Trotter (MSU)  
Stelios Tsangarides (MSU, co-author)  
David Vuletich (MSU)

## THESIS STUDENTS WHOM I PRESENTLY SUPERVISE

I am presently supervising two 3<sup>rd</sup> year students, Derek Shank and Joseph Zepeda. I have served in the past as an external member of thesis committees for Jennifer Simmerer and Inese Ivans, when they were PhD candidates at the University of Texas, Austin, as well as for Anna Frebel, when she was a PhD candidate at the Australian National University, and for Vinicius Placco and Rafael Santucci, at the University of Sao Paulo, Brazil.

## SEMINARS AND COLLOQUIA PRESENTED IN THE PAST FIVE YEARS

- 2019 RPA Workshop, MIT  
IReNA Kickoff Meeting, National Astronomical Observatory of Japan (Tokyo, Japan)  
Korean Astronomical Science Institute (Daejeon, S. Korea)  
Chungnam University (Daejeon, S. Korea)  
Hesburgh Lecture, Notre Dame Alumni Club of Hanover, Kings College, PA  
S-PLUS Collaboration Meeting (Sao Paulo, Brazil)  
Notre Dame Alumni Reunion, Notre Dame  
CEMP Meeting, University of Geneva (Geneva, Switzerland)  
University of Trieste (Trieste, Italy)  
International Center for Theoretical Physics (Trieste, Italy)  
University of Hull (Kingston upon Hull, United Kingdom)  
JINA-CEE r-Process Workshop, Tempe, Arizona  
Notre Dame Alumni Club Reunion, Notre Dame  
Shanghai Astronomical Observatory (Shanghai, China) (2 talks)  
National Astronomical Observatory of China (Beijing, China) (2 talks)  
Michiana Astronomical Club (2 talks)
- 2018 Keele University (Newcastle under Lyme, United Kingdom)  
University of Hull (Kingston upon Hull, United Kingdom)  
Durham University (Durham, United Kingdom)  
Cote d'Azur Observatory (Nice, France)  
American Astronomical Society Meeting, Denver  
REU Presentation, Notre Dame  
Michiana Astronomical Club  
Institute of Astrophysics, Canary Islands (Spain)  
FRIB Meeting on Neutron Star Mergers, Michigan State University  
Hesburgh Lecture, Notre Dame Alumni Club (Akron)  
DNP/JPS Joint Meeting, Kona, Hawaii  
IPMU Conference on Stellar Archaeology as a Time Machine to the First Stars (Tokyo, Japan)  
Joint Colloquium, Zentrum for Astrophysics (Heidelberg, Germany)
- 2017 University of Oklahoma  
Lowell Observatory  
DISC/REU Presentation, Notre Dame  
Chungnam National University (Daejeon, South Korea) (2 talks)  
OMEG17 Meeting, (Daejeon, South Korea)  
IAU Symposium Rediscovering the Galaxy (Leibniz Inst., Potsdam, Germany)  
Pontificia Universidad Catolica (Santiago, Chile) (2 talks)  
University of Andres Bello (Santiago, Chile) (2 talks)  
University of Concepcion (Concepcion, Chile) (2 talks)  
University of Sao Paulo, (Sao Paulo, Brazil)  
Texas A&M  
A Celebration of CEMP and Gala of GALAH (Melbourne, Australia)
- 2016 Observatories of the Carnegie Institution of Washington (2 talks)  
Valparaiso University (2 talks)  
Indiana University  
Groningen University (Netherlands)  
ICNT r-Process Meeting, Michigan State University  
Nuclei in the Cosmos XIV School (Niigata, Japan)  
DISC/REU Program (Notre Dame)  
First Stars Meeting (Heidelberg, Germany)  
Fermi National Accelerator Laboratory

University of Kentucky (2 talks)  
Leibniz Institute (Potsdam, Germany)

## **SERVICE TO THE UNIVERSITY, THE PROFESSION, AND THE PUBLIC**

### **i) Departmental Service Committee Assignments – Last Five Years**

- 2019: JINA–CEE Executive Committee  
JINA –CEE Diversity Committee (Chair)  
Graduate Admissions Committee  
Departmental Space Committee  
Undergraduate Research Committee
- 2018: JINA–CEE Executive Committee  
JINA –CEE Diversity Committee (Chair)  
Committee on Academic Progress (CAP)  
Graduate Admissions Committee  
Departmental Space Committee  
Undergraduate Research Committee
- 2017: JINA–CEE Executive Committee  
JINA –CEE Diversity Committee (Chair)  
Committee on Academic Progress (CAP)  
Graduate Admissions Committee  
Departmental Space Committee  
Departmental Strategic Planning Committee
- 2016: JINA–CEE Executive Committee  
JINA –CEE Diversity Committee (Chair)  
Graduate Admissions Committee  
Departmental Space Committee  
Departmental Strategic Planning Committee
- 2015: JINA–CEE Executive Committee  
Graduate Admissions Committee  
Departmental Space Committee  
Departmental Strategic Planning Committee

### **ii) College Committee Assignments – Last Five Years**

### **iii) University Committee Assignments – Last Five Years**

#### **iv) National and International Committees – Last Five Years**

- 2019: Notre Dame Representative to the Sloan Digital Survey Collaboration Council  
Member of International Advisory Board, Publications of the Astronomical Society of Australia  
Member of LSST (Large Synoptic Survey Telescope) Science Team  
Member of Editorial Board – JINA Virtual Journal  
Member of Editorial Board – SEGUE Virtual Journal  
Referee for Nature  
Referee for the Astrophysical Journal  
Referee for the Astronomical Journal  
Referee for Astronomy and Astrophysics Journal  
Referee for Monthly Notices of the Royal Astronomical Society
- 2018: Member of Editorial Board, Annual Review of Astronomy and Astrophysics  
Notre Dame Representative to the Sloan Digital Survey Collaboration Council  
Member of International Advisory Board, Publications of the Astronomical Society of Australia  
Member of LSST (Large Synoptic Survey Telescope) Science Team  
Member of Editorial Board – JINA Virtual Journal  
Member of Editorial Board – SEGUE Virtual Journal  
Referee for Nature  
Referee for the Astrophysical Journal  
Referee for the Astronomical Journal  
Referee for Astronomy and Astrophysics Journal  
Referee for Monthly Notices of the Royal Astronomical Society
- 2017: Member of Editorial Board, Annual Review of Astronomy and Astrophysics  
Notre Dame Representative to the Sloan Digital Survey Collaboration Council  
Member of International Advisory Board, Publications of the Astronomical Society of Australia  
Member of LSST (Large Synoptic Survey Telescope) Science Team  
Member of Scientific Organizing Committee (Two meetings)  
Member of Editorial Board – JINA Virtual Journal  
Member of Editorial Board – SEGUE Virtual Journal  
Referee for Nature  
Referee for the Astrophysical Journal  
Referee for the Astronomical Journal  
Referee for Astronomy and Astrophysics Journal  
Referee for Monthly Notices of the Royal Astronomical Society

2016: Member of Editorial Board, Annual Review of Astronomy and Astrophysics  
Notre Dame Representative to the Sloan Digital Survey Collaboration Council  
Member of International Advisory Board, Publications of the Astronomical Society of Australia  
Member of LSST (Large Synoptic Survey Telescope) Science Team  
Member of Scientific Organizing Committee (Two meetings)  
Member of Editorial Board – JINA Virtual Journal  
Member of Editorial Board – SEGUE Virtual Journal  
Referee for Nature  
Referee for the Astrophysical Journal  
Referee for the Astronomical Journal  
Referee for Astronomy and Astrophysics Journal  
Referee for Monthly Notices of the Royal Astronomical Society

2015: Panel member, NSF Review Panel for MSIP Proposals  
Member of Editorial Board, Annual Review of Astronomy and Astrophysics  
Notre Dame Representative to the Sloan Digital Survey Collaboration Council  
Member of International Advisory Board, Publications of the Astronomical Society of Australia  
Member of LSST (Large Synoptic Survey Telescope) Science Team  
Member of Scientific Organizing Committee (Two meetings)  
Member of Editorial Board – JINA Virtual Journal  
Member of Editorial Board – SEGUE Virtual Journal  
Referee for Nature  
Referee for the Astrophysical Journal  
Referee for the Astronomical Journal  
Referee for Astronomy and Astrophysics Journal  
Referee for Monthly Notices of the Royal Astronomical Society

**v) Other Service – Last Five Years**

2019 Public Talk, University of Notre Dame Alumni Reunion (2 talks)  
Public Talk, Michiana Astronomical Society

:

2018 Public Talk, University of Notre Dame Alumni Reunion  
Public Talk, Michiana Astronomical Society  
: Hesburgh Lecture, Akron Notre Dame Alumni Club

2017: Hesburgh Lecture, Tucson Notre Dame Alumni Club  
Public Talk, Notre Dame Revealing the Universe series

2016: Public talk, University of Notre Dame Alumni Event  
Interviewee, Notre Dame Day  
Public talk, Valparaiso University

2015: Primary Interviewee, Discover Magazine, "The Hunt for First Stars"  
Google Hangout – Public presentation of JINA-CEE  
Radio Interview, Big Picture Science, on NPR

I, along with my group at MSU, have developed, validated, and tested the primary software product used to derive stellar atmospheric parameters for the Sloan Digital Sky Survey, referred to as SSPP: SEGUE Stellar Parameter Pipeline, which has thus far determined temperatures, surface gravities, and metallicities for over 600,000 stars in the Milky Way galaxy. It has recently been extended to determine both the carbon to iron ratios, and alpha-element to iron ratios for the same sample of stars. This pipeline, or something quite similar, will become the parameter pipeline for the new survey efforts to be carried out with the LAMOST telescope in China, which will obtain spectroscopic data similar to SDSS for over 10 million stars. It is being actively considered for adoption for use by the proposed Galactic Archeology Survey, to be conducted with the Japanese Subaru 8m Telescope, and the DESI Galactic Archeology Survey, to be conducted with the Mayall 4-m Telescope.

I completely revamped the ISP 205 laboratory course, so that it is now offered in a "hybrid" fashion, partially on the web, and partially in the Abrams Planetarium. This new version is far more cost efficient (in terms of TA resources required), and better suited to the desires/expectations of our ISP 205 students.

I have written and distributed a major statistical analysis package, ROSTAT, which is being used by on the order of 100 researchers worldwide for analysis of radial velocity distributions in clusters of galaxies. I have also developed and distributed programs suited for mixture model analyses (KMM) and for the production of optimal contour maps (ADAPT).