

Department of Physics and Astronomy

2015 Year in Review



Scholarship Recipients:

Arthur J. Pejsa Aerospace Award (\$1,000)

- Chris Cleworth

Monica E. Bainter Memorial Award (\$1,500)

- Erin Sullivan

Monica E. Bainter Scholarship (\$750)

- Kyle Meidenbauer

Allen Blocher Scholarship (\$1000)

- Alex Holmes

Razdan Scholarship (\$1000)

- Brandon Czekay

Charles P. Sweet Dean's Scholarship (\$2000)

- Travis Augustine

Academy of Letters and Science Awards:

- Kyle McEachen, graduating
- Erin Sullivan, continuing

Graduating Seniors:

- Sam Chaara
- Michael Detert
- Jacob Doney
- Jesse Jahn
- Steven Knight
- Jason Letlebo
- Kyle McEachen
- Neil Oligney
- Jacob Olufs
- Jacob Tatro
- Mae Voeun
- Adam Waldvogel

Notable Selected Activities and Accomplishments

Single-underline indicates a faculty/staff member, and double-underline indicates a student.

External Grants

- Adriana Durbala received an academic year grant of \$1108 (funding source: NSF) obtained within ALFALFA collaboration (<http://egg.astro.cornell.edu/index.php/>) – Fall 2014 stipend for student Jacob Tatro on the project “Bulge-Disk-Bar Decomposition of Galaxies in Groups and Clusters of Galaxies in the Context of the ALFALFA Undergraduate Project”
- Chris Verzani contributed to Regent Scholar Program grant proposal entitled “Bridging STEM fields through the research and development of Unmanned Aerial Vehicles to support real-world forestry and agricultural commercial applications” Not funded.
- Neil Oligney utilized a research grant from Wisconsin Space Grant Consortium (\$2320) for the 2014-15 academic year: “*Optical Spectroscopy of Low Redshift Radio Loud SDSS Quasars*”. Faculty Advisor: Sebastian Zamfir.

Publications, Presentations and Posters of Faculty and Students

- Erin Sullivan, Sean Minster and Palash Banerjee presented a poster at the 7th annual Wisconsin Science and Technology Symposium at UW-Eau Claire in July 2014. The title of their poster was “An ultrasensitive laser interferometer for detecting motion with picometer resolution”.
- Erin Sullivan and Palash Banerjee presented a poster at the 14th annual UW-System Symposium for Undergraduate Research and Creative Activity at UW-Milwaukee in April 2015. The title of her poster was “An ultrasensitive laser interferometer for detecting motion with picometer resolution”.
- Jacob Olufs worked with Palash Banerjee on a PHYS 388 experimental project titled “Anisotropic magnetoresistance of a thin permalloy wire”. This project will be offered as an experiment for students in the PHYS 470 Experimental Physics course.
- Adriana Durbala presented (oral presentation) “Status report on the science done at the 0.9m telescope by UWSP” at the 2014 WIYN 0.9-m Consortium Meeting in Chicago on June 16, 2014.
- Adriana Durbala mentored student Jacob Tatro on the research project titled “Bulge-Disk-Bar Decomposition of Galaxies in Groups and Clusters of Galaxies in the Context of the ALFALFA Undergraduate Project” in fall 2014 and spring 2015
- Adriana Durbala and students Logan Hess and Jacob Tatro participated in the Eighth NSF-sponsored Undergraduate ALFALFA Team Workshop at Arecibo Observatory in January 2015; Jacob Tatro and Adriana Durbala had a poster presentation: “Bulge-Disk-Bar Decomposition of Galaxies in Groups in the Context of ALFALFA Undergraduate Project”
- Adriana Durbala presented (oral presentation) “Bulge/Disk Decompositions for Nearby Early-Type Spiral Galaxies” at the Eighth NSF-Sponsored Undergraduate ALFALFA Consortium Workshop at Arecibo Observatory, Puerto Rico in January 2015

- Adriana Durbala co-authored with ALFALFA team the poster titled “The Undergraduate ALFALFA Team: A Model for Involving Undergraduates in Major Legacy Astronomy Research” at the American Astronomical Society Meeting 225, Seattle, WA in January 2015
- Adriana Durbala mentored student Logan Hess in spring 2015 – research on photometry of galaxies in isolated environments
- Adriana Durbala and students Logan Hess and Jacob Tatro went to Kitt Peak National Observatory for six observing nights (galaxy groups) on the 0.9m WYIN telescope.
- Jacob Tatro presented a poster titled “*Bulge-Disk-Bar Decomposition of Galaxies in Groups in the Context of ALFALFA Undergraduate Project*” with Adriana Durbala at the COLS Undergraduate Research Symposium on May 1, 2015
- Chris Verzani and Albert Unruh (Phys 388) researched Rubidium vapor excitation via cw-laser, and femto-second laser interactions.
- Sebastian Zamfir and Adriana Durbala developed a new interdisciplinary course titled “History of Astronomy” (Astr305/Hist305), co-taught with Dr. Jerry Jessee from the History Department.
- Vinicius Garcia and Maryam Farzaneh presented a poster titled “Thermal Characterization of Vertical Cavity Surface Emitting Lasers (VCSELs) by Wavelength Shift Measurements” at the UW System Symposium for Undergraduate Research and Creative Activity in UW-Milwaukee, April 24, 2015.
- Vinicius Garcia and Maryam Farzaneh presented a poster titled “Thermal Characterization of Vertical Cavity Surface Emitting Lasers (VCSELs) by Wavelength Shift Measurements” at COLS Undergraduate Research Symposium, May 2015.
- May Voeun presented a poster titled “BiVO₄-coated Electrodes for Photoelectrochemical Water Splitting” at the COLS undergraduate research symposium with Ken Menningen on May 1, 2015. She also presented the same poster at the [UW System Symposium for Undergraduate Research and Creative Activity](#) at UW-Milwaukee, April 24, 2015.
- In summer 2014 Ken Menningen wrote dozens of “Real-World Physics” snippets, and several hundred new end-of-chapter homework questions, as a contributing author to the 5th edition of Physics by James S. Walker, to be published in December 2015. In spring 2015 he began work as sole author of the instructor’s solution manual to the new edition of the textbook.
- Jacob Doney presented a poster titled “Exploration of the Parameter Space of a Mathematical Model for Quorum Sensing” at the COLS undergraduate research symposium with David Tamres.
- Yueyang Meng presented a poster titled “Modeling Population Dynamics using a Cellular Automaton” at the COLS undergraduate research symposium with David Tamres.
- Isaac Ford presented a poster titled “Predicting the Diffusion of Diesel Emissions from Idling Trucks and the Rothschild Biomass Plant” at the COLS undergraduate research symposium with David Tamres and with Neil Heywood (Department of Geography and Geology).

- Neil Oligney presented a poster titled “Exploring the Radio-Loud/Radio Quiet Dichotomy of Quasars Using Radio Morphology and *Optical Spectra*” at the 2015 COLS Undergraduate Research Symposium with Sebastian Zamfir
- Adam Waldvogel had an oral presentation at the COLS 2015 Symposium: “*Analysis of the H β Balmer Broad Emission Line Profile Shape of Quasars*”; mentor Sebastian Zamfir
- Sebastian Zamfir co-authored the paper “*3C57 as an Atypical Radio-Loud Quasar: Implications for the Radio-Loud/Radio-Quiet Dichotomy*” – 2015, Monthly Notices of the Royal Astronomical Society, Vol. 450, p. 1916
- Sebastian Zamfir and Adriana Durbala co-developed (with Dr. Jerry Jessee from History Department) a new interdisciplinary course titled “History of Astronomy” (Astr305/Hist305) – expected to be first taught in Spring 2016.

Faculty/Staff Mentorships or Partnerships

- Vinicius Garcia worked on a summer research project with Maryam Farzaneh for his Brazilian Scientific Mobility Program summer internship, Summer 2015.
- Chris Verzani mentored Travis Augustine, as student/assistant-instructor for the laboratory component of Physics 370, Electronics.
- Chris Verzani mentored Mae Voeun, as the senior-student mentor for the newly offered “Introduction to the Research Process” course at UWSP.
- Michael Detert and Jason Letlebo successfully completed the Applied Emphasis major internships at Donaldsons Company. Lucas Manning is currently participating in a summer internship at Donaldson’s, and Evan Mason has been accepted at Donaldsons Company, and will participate in an internship there, this coming fall.
- Chris Verzani and Michael Evans established applied emphasis internship partnership with Kohler Company, in Kohler, WI. Michael Evans has been accepted at Kohler Company, and will participate in an internship there, this coming fall.

Outreach Activities

- Adriana Durbala and Sebastian Zamfir co-presented the workshop titled “*Let’s Make a Comet*” for UWSP STEM Exploration Day for Boys on November 21, 2014 and for UWSP STEM Career Day for Girls on February 27, 2015
- Adriana Durbala presented (oral presentation) UWSP’s LIFE program “Galaxies” on December 5, 2014 ; LIFE (Learning Is ForEver) program brings learning opportunities to hundreds of retired adults.
- Maryam Farzaneh presented “Making Rainbows” to the 3-4 year old class at University Child Learning and Care Center at UWSP, May 27, 2015.
- Bill Jenkins presented a LIFE program in November titled “Naval Terminology and its use in today’s English language”.

- Ken Menningen presented workshops entitled, “Renewable Energy and the Curse of the Second Law” STEM Career Day for Boys (November 2014) and STEM Career Day for Girls (February 2015)
- Ken Menningen presented a talk entitled, “Producing Pizazz in the Power Plug,” for two College Days for Kids programs (April 2015).
- Brad Hinaus and Chris Verzani presented a workshop on robotics in Astronomy titled “Mars Rover, Mars Rover, Please send Spirit Over” at College Day for Kids for two of the three sessions.
- Chris Verzani presented physics demonstration at Roosevelt Elementary School in Plover, WI, for PEP day.
- Chris Verzani conducted laser-laboratory tour for Wausau High School STEM day visit at UWSP
- Chris Verzani conducted laser-laboratory tour for DC Everest Junior High School STEM day visit at UWSP