

Timothy M. Lawlor

CURRICULUM VITAE

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EDUCATION:

- 2002 Ph.D. in Physics: Stellar evolution, computational astrophysics
University of Delaware, Newark, DE
- 1996 M.S. in Physics: Stellar atmospheres, computational astrophysics
Wichita State University, Wichita, KS
- 1994 B.S. in Physics: Astrophysics: Summa Cum Laude
East Stroudsburg University of Pennsylvania, PA
- 1991 B.S. in Mathematics: Applied analysis
Pennsylvania State University, University Park, PA

ACADEMIC AND PROFESSIONAL POSITIONS:

- 7/2008 – present **Associate Professor of Physics,**
Pennsylvania State University, Brandywine Campus
- Courses – taught each semester 2012-present:
Physics 211 – University Physics I (lecture and lab)
Physics 213/214 – University Physics III (lecture and lab)
Astronomy 096/296/496 – Independent Studies
- 7/2006 – 7/2008 **Assistant Professor of Physics,**
Pennsylvania State University, Brandywine Campus
- Courses – taught each semester 2006-2015:
Physics 211 – University Physics (lecture and lab)
Physics 213/214 – Heat and Waves; Light and Quantum Physics
Astronomy 001 – Introduction to Astronomy
Astronomy 011 – Astronomy Laboratory
Astronomy 096/296/496 – Independent Studies
- 8/2001 – 7/2006 **Assistant Professor of Physics,**
Pennsylvania State University, Wilkes-Barre Campus
- Courses split between two semesters:
Physics 150 – Technical Physics I (lecture and lab)

Physics 151 – Technical Physics II (lecture and lab)
Physics 211 – University Physics Lab
Astronomy 001 – Introduction to Astronomy
Astronomy 011 – Astronomy Laboratory
Astronomy 097/297/497 – Independent Studies

Continuing Education Courses:

“The Starry Night” (July 2005, two evenings; enrollment:100)
Included hands on activities exploring lunar phases, using planetarium software to find constellations, and observing with binoculars and telescopes.

“The Friedman Observatory Presents: An Astronomical Workshop” (Spring 2002; enrollment: 18)
This 8-hour, 4-night workshop focused on general astronomical phenomena. Included lectures and observing with telescopes.

- 8/2001 – 8/2006 **Observatory Director**
The Friedman Observatory, Pennsylvania State University,
Wilkes-Barre Campus
- 1/2000 – 2/2001 **Instructor/Lecturer – Physics**
University of Delaware, Newark, DE
- 6/2000 – 8/2000 **Instructor/Lecturer – Physical Science**
University of Delaware, Newark, DE
- 6/1999 – 8/1999 **Instructor/Lecturer – Physics**
University of Delaware, Newark, DE
- 2/1998 – 5/1998 **Course Manager – Physical Science**
2/1999 – 5/1999 University of Delaware, Newark, DE
- 8/1994 – 5/2001 **Graduate Teaching Assistant, Astronomy & Physics**
University of Delaware and Wichita State University

SERVICE TO THE UNIVERSITY AND COMMUNITY

Campus and University Committees

- | | |
|-------------|--|
| Fall 2001 | – Scholarly Activities Committee, member |
| Spring 2002 | – Instructional Design Specialist Search Committee |
| | – Scholarly Activities Committee, member |
| Fall 2003 | – Student Affairs Committee, member |
| Spring 2004 | – Student Affairs Committee, member |
| Spring 2005 | – Executive Committee, member |

- Fall 2005
 - Executive Committee member
 - Faculty Affairs Committee, member
 - Ad-hoc Committee, Science Division Meeting
- Spring 2006
 - Executive Committee, member
- Fall 2006
 - Campus Book Selection Committee
 - Biology Faculty Search Committee
- Spring 2007
 - Campus Book Selection Committee/Freshman Seminar
 - Faculty Forum Event Coordinator
 - Elected, University Faculty Senate
- Fall 2007
 - University Faculty Senate
 - Computing and Technology Committee
 - Executive Committee
 - Campus Book Selection Committee
- Spring/Fall 2008
 - University Faculty Senate
 - Computing and Technology Committee (Spring)
 - Intra-University Relations Committee (Fall)
 - Executive Committee
 - Campus Book Selection Committee
 - Technology Advisory Committee
 - Eureka Organizational Committee
- Spring 2009
 - University Faculty Senate
 - Executive Committee
 - Intra-college Relations Committee
 - Campus Website Committee
 - Technology Advisory Committee
 - Eureka Organizational Committee
- 2010-2011
 - University Faculty Senate
 - Executive Committee
 - Intra-college Relations Committee
 - Faculty Communities Sub-Committee, *Chair*
 - Facilities Committee
 - Eureka Organizational Committee
 - Sustainability Committee
 - Elected – Campus Faculty Senate, Chair Elect
 - Nominated – Faculty Rights & Responsibilities Committee
- Fall 2011
 - University Faculty Senate
 - Executive Committee, Chair
 - Intra-university Relations Committee, *Chair*
 - PSU Brandywine Faculty Senate, *Chair*
 - College Representative, College of Agriculture
 - Strategic Planning Committee, member
- Spring 2012
 - University Faculty Senate
 - Executive Committee, Chair
 - Intra-university Relations Committee, *Chair*
 - PSU Brandywine Faculty Senate, *Chair*

- College Representative, College of Agriculture
- Strategic Planning Committee, member
- Fall 2012
 - University Faculty Senate
 - Executive Committee, Member
 - Intra-university Relations Committee, *Chair*
 - University Budget Planning Task Force
Commonwealth Campuses Subcommittee
- Spring 2013
 - Awarded half year sabbatical leave
 - University Budget Planning Task Force
Commonwealth Campuses Subcommittee
- Fall 2013
 - University Faculty Senate
 - Executive Committee, Member
 - Intra-university Relations Committee, Member and
Subcommittee *Chair* (Fixed Term Faculty)
 - University Committee on Faculty Rights and
Responsibilities
 - Facilities and Sustainability Committee, Member
 - Speaker Series Committee, Member
 - Student Activity Fee Committee
- Spring 2014
 - University Faculty Senate
 - Intra-university Relations Committee, Member and
Subcommittee *Chair* (Fixed Term Faculty Report)
 - Executive Committee, Member
 - University Committee on Faculty Rights and
Responsibilities
 - Student Activity Fee Committee
- Fall 2014-Spring 2015
 - University Faculty Senate
Committee on Curricular Affairs, Member
 - Executive Committee, Member
 - University College Faculty Council, Member
 - Campus Promotion and Tenure Committee 2014-16
 - Promotion and Tenure Committee
Discipline Member, Penn State – Worthington-
Scranton
 - Faculty and Staff Social Committee, Member
 - Teaching peer reviewer for second year review at
Worthington Scranton
 - Faculty Adviser – Brandywine Astronomy Club
- Fall 2014-Spring 2015
 - University Faculty Senate
Committee on Curricular Affairs, Member
 - Executive Committee, Member
 - University College Faculty Council, Member
 - Campus Promotion and Tenure Committee 2014-16
 - Promotion and Tenure Committee
Discipline Member, Penn State – Greater Allegheny
 - Undergraduate Research Committee, Member

- Sustainability Committee, Member

List of advising responsibilities

Fall 2015	6 advisees
Spring 2015	6 advisees
Fall 2014	6 advisees
Spring 2014	6 advisees
Fall 2013	6 advisees
Fall 2012	3 advises (half year sabbatical)
Spring 2012	18 advises
Fall 2011	18 advisees
Spring 2011	9 advisees
Fall 2010	9 advisees
Spring 2010	9 advisees
Fall 2009	13 advisees
Spring 2009	13 advisees
Fall 2008	11 advisees
Spring 2008	11 advisees
Fall 2007	11 advisees
Spring 2007	12 advisees
Fall 2006	12 advisees
Spring 2006	13 advisees
Fall 2005	18 advisees
Spring 2005	13 advisees
Fall 2004	5 advisees
Spring 2004	11 advisees

Service to the Profession: Reviewer for refereed journals

August, 2013	Journal: The Physics Teacher
January, 2009	Journal: The Astrophysical Journal
January, 2005	Journal: Science
December 2004	Journal: The Astrophysical Journal

PUBLIC OUTREACH AND OTHER PEDAGOGY:

⋈ Co-instructor for “Engaging your Students in Astronomy Workshop,”
July 19-24, 2015 sponsored by Penn State’s Department of Astronomy and
Astrophysics/PAESTA, Penn State University Park

⋈ Co-instructor for “Engaging your Students in Astronomy Workshop,”
July 21-26, 2013 sponsored by Penn State’s Department of Astronomy and
Astrophysics/PAESTA, Penn State Brandywine

⋈ Co-instructor a hands on workshop for high school teachers at Sitting Bull

College in North Dakota. I did this while visiting the University of North Dakota on sabbatical in collaboration with the University of North Dakota and Valley State University. The workshop fused western astronomy instruction with the culture of the Lakota Native Americans.

Director, Friedman Observatory August 2001 – August 2006

∞ I provided public observing sessions once a week at the Friedman Observatory, as well as once or twice a month for special groups. Occasional attendance was in excess of 150 people. Biannual amateur astronomer meetings were held at the observatory. I provided astronomy public education and website development

SCOLARSHIP OF RESEARCH AND CREATIVE ACCOMPLISHMENT:

Current and previous research (publication list to follow)

- ∞ The late stages of stellar evolution; variable stars; Born-again Phenomena objects (e.g. V606 Aql, Sakurai's Object, and FG Sge)
- ∞ V838 Monocerotis and similar variable stars, massive binary stars
- ∞ Population III stars (early universe stars)
- ∞ Hydrogen deficient, non-DA white dwarfs
- ∞ RCrB stars, PG1159 type stars, variable stars
- ∞ Hydrogen deficient CSPN
- ∞ Stellar atmospheres for cool AGB stars

PARTICIPATION IN SEMINARS AND WORKSHOPS

Spring-Summer 2015 – served as a workshop leader for Pennsylvania Earth Science Teachers Association (PAESTA) for Pa educators

Spring-Summer 2013 – served as a workshop leader for Pennsylvania Earth Science Teachers Association (PAESTA) for Pa educators

Fall 2010 - Workshop, Improving the College Introductory Astronomy Survey Course for Non-Science Majors Through Active Engagement: A Tier I (Introductory) Workshop, Oberlin College and NASA. (September 18, 2010 - September 19, 2010)

Spring 2007 - Southeast Pennsylvania Section of the American Association of Physics Teachers

Summer 2003 – Contemporary Laboratory Exercises in Astronomy (CLEA) Workshop

FUNDED PROJECTS AND GRANTS

Fall 2001

Research Development Grant, Commonwealth College \$ 950
Fortran Compiler and other computer software packages were purchased

Spring 2002

Research Project, University of Delaware \$ 500
Travel support to present a paper at a professional meeting.

Title III Grant, Undergraduate Research & Service Learning Committee \$ 600
Funds were used as compensation for an undergraduate research student.

Scholarly Activities Committee Grant, Scholarly Activities Committee \$ 630
Equipment was purchased for PSU-WB's Friedman Observatory.

Fall 2002

Title III Grant, Undergraduate Research & Service Learning Committee \$ 600
Funds were used as compensation for an undergraduate research student.

Spring 2003

Pennsylvania Department of Education Equipment Grant \$ 600
A ten inch telescope was purchased for the astronomy lab.

Student Activities Fee Funding Grant, Student Government Association \$ 450
An eight inch telescope was purchased for the astronomy lab.

Fall 2003

CWC Science Lab Equipment Grant, Commonwealth College \$4690
SBIG CCD Camera

Summer 2004

The University of North Dakota Travel Grant \$2500
Expedition to New Delhi, India for the Transit of Venus.

Summer 2006

American Astronomical Society International Travel Grant \$ 900
Travel to LaPalma, Spain for a scientific conference

Fall 2005 (Not funded, spring 2006)

The National Science Foundation, \$270,850
Informal Science Education (ISE) Grant
NSF 05-544, Co-PI Subcontract
“The Sun-Earth-Moon System: Correcting Misconceptions in Astronomy.”

Summer 2007

Travel Grant – Los Alamos National Lab \$1,000
Conference title: The First Stars III

Summer 2008

Delaware Space Consortium Research Grant \$26,000
Evolution of intermediate mass Pop III stars

Spring/Summer 2012

Penn State Brandywine Undergraduate Research Grant \$ 500
Nicholas Rufo: Peer Reviewed publication

Spring/Summer 2013

Penn State Brandywine Undergraduate Research Grant \$ 500
Zach Peterson: Two Undergraduate Symposia and one AAS meeting
Modeling massive population III stars

Summer 2014

DAA Funded Undergraduate Research: Zachary Peterson \$500
Modeling the central star of the Stingray Nebula

DAA Funded Undergraduate Research: Jancoba Dorley \$500
Modeling the oldest stars in our galaxy

2014 –2017

Cooper Memorial Fellowship ~ \$25,000

COMPUTER LITERACY AND CODES USED

Windows 7 and earlier platforms; various, standard software packages.
Experience with FORTRAN; some experience with C++, Visual Basic.

Unix: used for research on both Sun and SGI platforms.
Codes used: BRAHMA by James MacDonald/Peter Eggleton
ATLAS by Robert Kuruz, and an adiabatic oscillation program by Jorgen Christensen-Dalsgaard.

HONORS AND MEMBERSHIPS

Cooper Memorial Fellowship – July 2014-2017
PSU Brandywine, Faculty Undergraduate Research Award 2013
“Penn Stater of the Quarter”, Fall 2003
Sigma Xi National Honor Society
Graduated Summa cum Laude, 1994, East Stroudsburg University

South East Pennsylvania Section of the American Association of Physics Teachers (SEPS/AAPT)
American Astronomical Society (AAS) Member since 1995
International Astronomical Union (IAU) Member since 2004
PAESTA Pa Earth and Space Science Teachers Association, Member since 2013

INVITED RESEARCH TALKS

In digital measures – [papers, presentations, seminars, workshops] it has a question for ‘published in proceedings?’ implies it goes here AND in [publications] section? Many of these are nowhere: same for other talks after

“Population III Stars and the Early Universe: Observations and Modeling,” Chester County Astronomical Society at West Chester University, 7 April, 2014

“The Status and Modeling of Early Universe Stars,” University of North Dakota Astrophysics Research Colloquium, 8 March 2013

“The Early Universe Stars: A Review and Modeling Results for Population III Stars,” *Penn State University - York Smith Symposium*, 7 November 2010

“Stellar Evolution and the mysterious V838 Monocerotis,” Penn State York, Science and Technology Lecture Series, April 2008

“Modeling the Evolution of Stellar Outbursts: From Born-again to the Early Universe Population III Stars,” Penn State University, Department of Astronomy and Astrophysics Research Colloquium, University Park, PA, October 2007

“Accretion in Stellar Evolution and V838 Mon,” November 2006, University of Delaware, Astrophysics Seminar, November 2006

“The Mysterious Outburst of V838 Monocerotis,” University of North Dakota, Astrophysics Research Colloquium, October 2006

OTHER SPEAKING ENGAGEMENTS

“Astrophysics at Penn State Brandywine,” The 2015 meeting of the Philadelphia Area Astronomers,” Held at *the Franklin Institute*, Philadelphia, PA, July 27, 2015

“From the Birth of the Universe to the Birth of the Solar System: How Did We Get Here [and How do I Teach it]?” 2013 PAESTA Conference, October 5th, 2013

“The Early Universe Stars,” Northeast PA Physics Consortium, Research Seminar Series, Penn State Wilkes-Barre April, 18 2013

“Impacts on Earth, 2012 apocalypse, and Introduction to the 1951 film When Worlds Collide.” Penn State Wilkes-Barre’s COMM197 class/Film Series November 2012

“Research at Penn State Brandywine – focus on Astronomy,” Penn State Alumni Group at Maris Grove Retirement Community, November 2012

“The First Stars and the Early Universe,” Penn State Brandywine Faculty Forum, November 2011

“The Early Universe Stars: A Review and Modeling Results for Population III Stars,” Northeast PA Physics Consortium, Research Seminar Series, Penn State Wilkes-Barre April 2011

“The First Stars: Our Really Ancient Past,” Northeast PA Physics Consortium, Research Seminar Series, Penn State Wilkes-Barre April 2009

“A New Model for the Outburst of V838 Mon,” Commonwealth College Science Division meeting, State College, Pa, October 2004

“Observing the Transit of Venus: An Informal Lecture,” The Nehru Planetarium, New Delhi, India, June 2004

“The Friedman Telescope and the Approach of Mars,” First Presbyterian Church, Wilkes-Barre, Pa, October 2003.

“General Astronomy,” Long Island Montessori School, Long Island, NY, September 2003.

“General Astronomy, a Hands-on Experience,” Wyoming Seminary Lower School, for the Women Empowered by Science (WEBS) program, May 2003.

“Space Travel and the Loss of the Space Shuttle Columbia,” April 2003, Penn State Wilkes-Barre, Honors Seminar Course.

“Big Bang Cosmology and the Evolution of the Universe,” Penn State Wilkes-Barre, Scholarly Activity Committee Lecture Series, December 2002.

“The Birth, Death and Sometimes “Re-birth” of Stars,” Penn State Wilkes-Barre, Scholarly Activity Committee Lecture Series, November 2001.

PEER REVIEWED PUBLICATIONS:

T.M. Lawlor, T.R. Young, J. Teffs, J. MacDonald, 2015 “The effects of convection criteria on the evolution of population III stars and the detectability of their supernovae”, *Monthly Notices of the Royal Astronomical Society*, 450(2)

T.M. Lawlor, 2013, “Astronomy Exercises for the Artist: Van Gogh the Observer,” *Astronomy Education Review*, 12, 010202 (2013)

J. MacDonald, **T.M. Lawlor**, N. Anilmis, and N.F. Rufo, 2013 “The extremely low metallicity star SDSS J102915+172927: a subgiant scenario,” *Monthly Notices of the Royal Astronomical Society*, (May 11, 2013) 431 (2), 1425-1431

T.M. Lawlor, T.R. Young, T. Johnson, and J. MacDonald, 2008, “Single and binary evolution of Population III stars and their supernova explosions,” *Monthly Notices of the Royal Astronomical Society*, Volume 384, Issue 4, pp. 1533-1543

T.M. Lawlor, 2008, “Being careful with Pasco’s friction lab: Uncovering pre-sliding displacement?” *The Physics Teacher*, 46, 432-435

T.M. Lawlor & J. MacDonald, 2006, “The mass of helium in white dwarf stars and the formation and evolution of hydrogen deficient Post-AGB stars,” *Monthly Notices of the Royal Astronomical Society*, 371, pp. 263-282

T.M. Lawlor, 2005, “A new model for V838 Mon: A born-again object with an episode of accretion,” *Monthly Notices of the Royal Astronomical Society*, 361, 695-700

T.M. Lawlor & J. MacDonald, 2003 “Sakurai’s Object, V605 Aql, and FG Sge: An Evolutionary Sequence Revealed,” *Astrophysical Journal*, 583, 913-922

Professional Meetings and Conference Proceedings Publications:

Multiple pages indicate full paper published in a proceedings; single pages listed indicate only Abstracts are published; no pages indicate a poster or oral presentation that had no proceedings published.

T.M. Lawlor, S. Shah, & J. Dorley, 2015, "Population III white dwarfs and the oldest observed stars in the universe," IAU General Assembly, Meeting #29, #2250216

T.M. Lawlor, S. Sebzda, Z. Peterson, & D. Conran, 2015, "Evolution models from the AGB to the PNe and the rapid evolution of SAO 24456," IAU General Assembly, Meeting #29, #2250204

T.M. Lawlor, J. MacDonald, T. Young, & J. Teffs, 2015, "On the importance of convection criterion in population III stellar evolution models," IAU General Assembly, Meeting #29, #2250177

T.M. Lawlor, 2015 Astronomy Research at Penn State Brandywine: Institutional talk at the "Astrophilly" meeting held at the Franklin Institute, a meeting of the Philadelphia area astrophysicists

T.M. Lawlor, T.R. Young, J. Teffs, Z. Peterson, J. MacDonald, 2014, "Population III Stars: Evolution and Explosions," *Bulletin of the American Astronomical Society*, Washington D.C., 223, 152.18

T.M. Lawlor, T.R. Young, J. Teffs, Z. Peterson, J. MacDonald, 2013, "Evolution and Explosions of 15-60 M_{\odot} Population III Stars," First Annual GMT Community Science Meeting: Cosmology in the Era of Extremely Large Telescopes," The University of Chicago, Chicago, IL. (June 10-13, 2013)

T.M. Lawlor, T. R. Young, J. MacDonald, T.A. Johnson, 2010, "Mid Mass Population III Stars (the "First" Stars)", The First Galaxies, Quasars & Gamma-Ray Bursts, State College, PA. (June 6, 2010)
<http://www2.astro.psu.edu/firstgalaxies/firstgalaxies.html>

T.M. Lawlor, 2010 "The Early Universe Stars: A Review and Modeling Results for Population III Stars," *Penn State York Smith Symposium*, 7, November 2010, paper in print

T.M. Lawlor, T. R. Young, J. MacDonald, T.A. Johnson, 2009, "Evolution of Mid-Mass Population III Stars," *Bulletin of the American Astronomical Society*. 42, p336

T.M. Lawlor, J. MacDonald, T.R. Young & T. Johnson, 2008, “Mid-mass Population III Stars: Evolution, Structure, Composition and Mass Loss,” *Bulletin of the American Astronomical Society*, 41, p.204

T.M. Lawlor, J. MacDonald, T.R. Young & T. Johnson, 2008, “10M_⊙ Population III single and binary evolution models,” First Stars III at Los Alamos National Laboratory, eds. T. Abel, A. Heger, and B. O’Shea, American Institute of Physics Conference Proceedings, Volume 990, pp. 238-240

T.R. Young, T. Johnson, **T.M. Lawlor**, and J. MacDonald 2007, “Population III Supernova Light Curves from Massive Stars in Binaries,” The First Stars III, eds. T. Abel, A. Heger, and B. O’Shea, American Institute of Physics Conference Proceedings, Volume 990, pp. 233-237

T.M. Lawlor 2007, “The Reflection Effect in Born-Again Objects,” 210th Meeting of the American Astronomical Society, *Bulletin of the American Astronomical Society*, 39, p159

T.R. Young, T. Johnson, and **T.M. Lawlor**, 2007, “Population III Supernova Light Curves,” 210th Meeting of the American Astronomical Society, *Bulletin of the American Astronomical Society*, 39, 123.13

T.M. Lawlor 2007, “Evolution Models for V838 Mon: Born-again Binaries and Others,” The Nature of V838 Mon and its Light Echo, eds. R.L.M. Corradi and U. Munari, *Astronomical Society of the Pacific Conference Series*, 363, pp.249-256

T.M. Lawlor, T.R. Young, T. Johnson & J. MacDonald 2006, “Mass Transfer in Population III Massive Binaries and Their Resulting SN Light Curves,” Space Telescope Science Institute May Symposium – Massive Stars: From Pop III and GRBs to the Milky Way, ed. M. Livio, STScI

T.M. Lawlor, J. MacDonald and T.R. Young 2005, “The Effects of Mass Transfer On Massive Binaries,” 206th Meeting of the American Astronomical Society, *Bulletin of the American Astronomical Society*, 37, p500

T.M. Lawlor & J. MacDonald , 2004, “V838 Mon: Not a Born Again Object?” 203rd Meeting of the American Astronomical Society, *Bulletin of the American Astronomical Society*, 35, p1339

T.M. Lawlor & J. MacDonald, 2002 “Sakurai’s Object, V605 Aql, and FG Sge: An Evolutionary Sequence Revealed,” *International Astronomical Union Colloq.* 187, Exotic stars as challenges to evolution, eds. C.A. Tout and W. Van Hamme, *Astronomical Society of the Pacific Conference Series*, 279, pp.193-199

T.M. Lawlor & J. MacDonald, 2002, “Theoretical-Observational comparisons and details in the evolution of Sakurai’s Object,” *Astrophysics and Space Science*,

279/1-2, Special Issue: *Sakurai's Object: What have we learned in the first five years?* eds. J. Dyson, S.A. Lamb, A. Evans, and B. Smalley, pp. 123-128

T.M. Lawlor & J. MacDonald, 2000, "The Born Again Phenomena and its Link to H-deficient Post-AGB Objects," Proceedings of the 12th European Conference on White Dwarf Stars, Astronomical Society of the Pacific Conference Series, 226, pp.20-26

T.M. Lawlor & J. MacDonald, 1999, "The Born Again Phenomena: Exploratory Evolutionary Models Including Mass Loss," 199th Meeting of the American Astronomical Society, Bulletin of the American Astronomical Society, 31 1435

A. Ulla, P. Thejll, F. Pérez Hernández, J. MacDonald, **T. Lawlor**, 1999 "Hot Subdwarfs: Infrared Fluxes, Binaries and Oscillations," Proceedings of the 11th European Workshop on White Dwarfs, Astronomical Society of the Pacific Conference Series, 169, p.58-64

F. Allard, **T. Lawlor**, D. R. Alexander, 1995 "M Stars Model Atmospheres: Spectra and Colors," 195th Meeting of the American Astronomical Society Bulletin of the American Astronomical Society, 27, 1432

Undergraduate Research Projects - Symposium Presentations and Other Projects:

2014-2015 "CCD imaging and photometry," David Conran, Sophomore, Brandywine, Eureka

2015 "Modeling the rapidly evolving SAO244567," Steven Sebzda, Sophomore, Brandywine, led to an IAU conference paper

2015 "Modeling early universe white dwarfs" Shivani, Shah, Freshman Astrophysics, Brandywine, led to an IAU conference paper

2015 "Computational modeling – the Earth Moon System," Ryan Richards Honor's project

2014 "Modeling HD140283 and other low mass "oldest" stars," Jancoba Dorley, Junior Astrophysics, University Park, led to an IAU conference paper

2014 "Is the CSPN in the Stingray Nebula an AGB Final Thermal Pulse object?" Zac Peterson, Junior, Physics, University Park, led to an IAU conference paper

Spring/Summer 2013 “Modeling the evolution of Pop III Stars,” Peterson, Zach
(Eureca and chosen to be *presented at PSU’s Eastern Regional Symposium*)

Spring/Summer 2012 “Modeling the Evolution of Caffau’s Star,” Rufo, Nick
(Eureca and chosen to be *presented at PSU’s Eastern Regional Symposium; led to a peer reviewed publication collaboration with Jim MacDonald at the University of Delaware*)

Spring 2012 “Modeling a Projectile Launched by an Elastic Band, including the effects of Air Drag,” Nayak, Vinay, Honor’s project and Eureca

Spring 2011 “Analysis of CFL and high efficiency light bulbs using Pasco light sensors,” Patel, Yash, Eureca

Fall 2007 “A Kinetic Friction Lab – The First 0.2 Seconds,” Sinigaglio, Anjelica
(*presented at Eureca and PSU-York’s Undergraduate Smith Symposium*)

Undergraduate Projects at Penn State Wilkes-Barre (2002-2006)

Spring 2005/06 “Physics Honors Project” Lees, S.

Fall 2004 “The Transit of Venus: Distance and Parallax” McKena, Lauren

Fall 2004 “Updating the Observatory” Lees, Scott

Spring 2002 “Astronomy Equipment” (Title III grant) Shedlock, Paul