CURRICULUM VITA
Shane L. Larson

Contact Information

Shane L. Larson	Email	s.larson@usu.edu
Department of Physics	WWW	www.physics.usu.edu/shane/
4415 Old Main Hill	Phone	435-797-8838 (W)
Utah State University	Dept	435-797-2857
Logan, UT 84322	FAX	435-797-2492

Scientific Background

- *Assistant Professor of Physics*, Utah State University (2008-present)
- *Assistant Professor of Physics*, Weber State University (2006-2008)
- *Postdoctoral Scholar*, Center for Gravitational Wave Physics & Institute for Gravitational Physics, The Pennsylvania State University (2004-2006)
- *Postdoctoral Scholar*, Space Radiation Laboratory & TAPIR, California Institute of Technology (2001-2004)
- *NASA EPSCoR Postdoctoral Research Associate*, Jet Propulsion Laboratory & Montana State University (1999-2001)
- *Ph. D., Theoretical Physics*, Montana State University (1999)
- *M. S., Physics*, Montana State University (1994)
- *B. S., Physics (with High Scholarship)*, Oregon State University (1991)

Interests

Gravitational wave astronomy, relativistic astrophysics, general relativity, cosmology.

Experience

- 2008 - present: *Assistant Professor of Physics, Utah State University.*
  Assistant professor in 23,000 student research university (Carnegie RU/H). I have a standard teaching load (3 semester credit hours), and maintain an active research program in gravitaitonal physics.
- 2006 - 2008: *Assistant Professor of Physics, Weber State University.*
  Assistant professor in 18,000 student regional undergraduate institution. Full teaching load (12 semester credit hours; courses + laboratories), maintained an active research program.
- 2004 - 2006: *Postdoctoral Scholar, Center for Gravitational Wave Physics.* [Center Postdoc]
  Research in low frequency gravitational wave astrophysics and phenomenology: galactic binaries, extreme mass ratio inspirals, and supermassive black holes.
- 2001 - 2004: *Postdoctoral Scholar in Physics, California Institute of Technology.* [Tom Prince]
  Research in gravitational wave physics pertaining to the proposed LISA space interferometer: binary data analysis, time delay interferometry, and observatory sensitivity.

- 1999 - 2001: *NASA EPSCoR Postdoctoral Associate, Jet Propulsion Laboratory.* [Ron Hellings]
  Research in gravitational wave astrophysics, studying possible astrophysical sources of gravitational radiation and design aspects of the proposed LISA space interferometer.
- 1991 - 1999: *Graduate Research Student, Montana State University.* [Bill Hiscock]
  Ph. D. student in theoretical physics: gravitational wave physics, classical relativity and semiclassical gravity.
- 1990: *Summer Intern, National Radio Astronomy Observatory, Charlottesville, VA.* [Glen Langston]
  Work on characterization of core-jet radio sources based on luminosity, internal structure of fields (from polarization), and external morphology from VLA survey data.
- 1989 - 1991: *Research Assistant, Biophysics, Oregon State University.* [Jeanne Rudzki Small]
  Experimental work on protein (predominantly carboxymyoglobin) dynamics using time-resolved pulsed laser photoacoustic calorimetry.
- 1987 - 1988: *Research Technician, Oregon State University (Union County Station).*
  Worked on projects relating to land management practices in rangeland ecosystems (and built a lot of barbed wire fence!).

Honors & Awards

- Accepted to *Gravitational Wave Astronomy*, Summer Workshop, Aspen Center for Physics (June 2008)
- Accepted to *LISA Data: Analysis, Sources and Science*, Summer Workshop, Aspen Center for Physics (June 2005)
- Member of APS Topical Group in Gravitation *Speakers Bureau*, World Year of Physics (2004-2005)
- Classical and Quantum Gravity, Research Highlight (2002), for N. J. Cornish and S. L. Larson, CQG **18**, 3473 (2001)
- NASA Space Grant Graduate Student Internship, Montana Space Grant Consortium, Montana State University (1994-1999)
- Graduate Teaching Assistant of the Year, Department of Physics, Montana State University (1993)
- Graduate Teaching Assistant of the Year (Honorable Mention), Department of Physics, Montana State University (1992)
- Presidential Scholar, Oregon State University (1987 - 1991)
- DeWuhs-Keckritz Scholar, Oregon State University (1987)

Refereed Publications

1. *The First Frontier: High altitude ballooning as a platform for student research experiences in science and engineering*
   Shane L. Larson, John C. Armstrong and William A. Hiscock
   submitted to *American Journal of Physics* (2008)

2. *Detecting a Stochastic Gravitational-Wave Background: The Overlap Reduction Function*
   Lee Samuel Finn, Shane L. Larson and Joseph D. Romano
   submitted to *Physical Review D* (2008); astro-ph/arXiv:0811.3582

3. *The LISA gravitational wave foreground: a study of double white dwarfs*
   Ashley J. Ruiter, Krzysztof Belczynski, Matthew Benacquista, and Shane L. Larson
   submitted to *Astrophysical Journal* (2008); astro-ph/arXiv:0705.3272

4. *Specific angular momentum of extrasolar planetary systems*
   John C. Armstrong, Shane L. Larson and Rhett R. Zollinger
   submitted to *Astrophysical Journal* (2007); astro-ph/arxiv:0708.1771

5. *The Mock LISA Data Challenges: from Challenge 1B to Challenge 3*
   K. A. Arnaud, S. Babak, J. G. Baker, M. J. Benacquista, N. J. Cornish, C. Cutler, S. L. Larson, B. S. Sathyaprakash, M. Vallisneri, A. Vecchio, J-Y. Vinet (The Mock LISA Data Challenge Task Force)
   Class. Quant. Grav., **25**, 184026 (2008).

6. *Report on the second Mock LISA Data Challenge*
   K. A. Arnaud, S. Babak, J. G. Baker, M. J. Benacquista, N. J. Cornish, C. Cutler, S. L. Larson, B. S. Sathyaprakash, M. Vallisneri, A. Vecchio, J-Y. Vinet (The Mock LISA Data Challenge Task Force)
   Class. Quant. Grav. **25**, 114037 (2008)

7. *Spurious acceleration noise in spaceborne gravitational wave interferometers*
   Patricia Purdue and Shane L. Larson
   Class. Quant. Grav. **24**, 5869 (2008)

8. *Selection effects in resolving Galactic binaries with LISA*
   Matthew J. Benacquista, Shane L. Larson and Brett E. Taylor
   Class. Quant. Grav. **24**, S513 (2007)

9. *An overview of the second round of the Mock LISA Data Challenges*
   K. A. Arnaud, S. Babak, J. G. Baker, M. J. Benacquista, N. J. Cornish, C. Cutler, S. L. Larson, B. S. Sathyaprakash, M. Vallisneri, A. Vecchio, J-Y. Vinet (The Mock LISA Data Challenge Task Force)
   Class. Quant. Grav. **24**, S551 (2007)

10. *Report on the first round of the Mock LISA Data Challenges*
    K. A. Arnaud, S. Babak, J. G. Baker, M. J. Benacquista, N. J. Cornish, C. Cutler, S. L. Larson, B. S. Sathyaprakash, M. Vallisneri, A. Vecchio, J-Y. Vinet (The Mock LISA Data Challenge Team)
    Class. Quant. Grav. **24**, S529 (2007)

11. *Gravitational wave bursts from the Galactic massive black hole*
    Clovis Hopman, Marc Freitag and Shane L. Larson
    Monthly Notices of the Royal Astronomical Society **378**, 129 (2007)

12. *Hands-on Gravitational Wave Astronomy: Extracting astrophysical information from simulated signals*
    Louis J. Rubbo, Shane L. Larson, Michelle B. Larson and Dale R. Ingram
    The American Journal of Physics **75**, 597 (2007)

13. *Observing IMBH-IMBH binary coalescences via gravitational radiation*
    John M. Fregeau, Shane L. Larson, M. Coleman Miller, Richard O'Shaughnessy, and Frederic A.

Rasio
Astrophysical Journal **646**, L135 (2006)

14. *Gravitational radiation timescales for extreme mass ratio inspirals*
Jonathan R. Gair, Daniel J. Kennefick and Shane L. Larson
Astrophysical Journal **639**, 999 (2006)

15. *Gravitational Waves: new observatories for new astronomy*
Louis J. Rubbo, Shane L. Larson and Michelle B. Larson
The Physics Teacher **44**, 420 (2006)

16. *Science icebreaker activities: an example from gravitational wave astronomy*
Michelle B. Larson, Louis J. Rubbo, Kristina D. Zaleski and Shane L. Larson
The Physics Teacher **44**, 416 (2006)

17. *LISA: A modern astrophysical observatory*
Shane L. Larson
review paper in the proceedings of the 33rd SLAC Summer Institute, *Gravity in the Quantum World and the Cosmos*, SLAC-R-819, T023 (2005)

18. *Semi-relativistic approximation to gravitational radiation from encounters with non-spinning black holes*
Jonathan R. Gair, Daniel J. Kennefick and Shane L. Larson
Physical Review D **72**, 084009 (2005)

19. *The LISA zero-signal solution*
Massimo Tinto and Shane L. Larson
Classical and Quantum Gravity **22**, 531 (2005)

20. *The LISA time-delay interferometry zero-signal solution I: geometrical properties*
Massimo Tinto and Shane L. Larson
Phys. Rev. D **70**, 062002 (2004)

21. *Event rate estimates for LISA extreme mass ratio capture sources*
J. Gair, L. Barack, T. Creighton, C. Cutler, Shane L. Larson, E. S. Phinney and M. Vallisneri
Classical and Quantum Gravity **21**, 1595 (2004)

22. *Constraining the properties of the proposed supermassive black hole system in 3C66B: Limits from pulsar timing*
Frederick A. Jenet, Andrea Lommen, Shane L. Larson and Linqing Wen
Astrophysical Journal **606**, 799 (2004)

23. *LISA data analysis: doppler demodulation*
Neil J. Cornish and Shane L. Larson
Classical and Quantum Gravity **20**, 163 (2003)

24. *LISA data analysis: source identification and subtraction*
Neil J. Cornish and Shane L. Larson
Phys. Rev. D **67**, 103001 (2003)

25. *LISA, binary stars and the graviton mass*
Curt Cutler, William A. Hiscock and Shane L. Larson
Phys. Rev. D **67**, 024015 (2003)

26. *The LISA Optimal Sensitivity*
Thomas A. Prince, Massimo Tinto, Shane L. Larson and J. W. Armstrong
Phys. Rev. D **66**, 122002 (2002)

27. *Unequal arm space-borne gravitational wave interferometers*
Shane L. Larson, Ronald W. Hellings and William A. Hiscock
Phys. Rev. D **66**, 062001 (2002)

28. *Perspectives on water flow and FLIR imagery*
Shane L. Larson, Larry L. Larson and P. A. Larson
Journal of Rangeland Management **55**, 106 (2002)

29. *Space missions to detect the cosmic gravitational-wave background*
Neil J. Cornish and Shane L. Larson
Classical and Quantum Gravity **18**, 3473 (2001)

30. *Determination of meteor showers on other planets using comet ephemerides*
Shane L. Larson
Astronomical Journal **121**, 1722 (2001)

31. *Ripples on a cosmic sea: Gravitational waves and the new astronomy*
Shane L. Larson
Quantum **11**, 4 (2001)

32. *Low frequency gravitational waves from binary white dwarf MACHOs*
William A. Hiscock, Shane L. Larson, Joshua Routzahn, and Ben Kulick
Astrophysical Journal Letters **540**, L5 (2000)

33. *Sensitivity curves for spaceborne gravitational wave interferometers*
Shane L. Larson, William A. Hiscock and Ronald W. Hellings
Phys. Rev. D **62**, 062001 (2000)

34. *Using binary star observations to bound the mass of the graviton*
Shane L. Larson and William A. Hiscock
Phys. Rev. D **61**, 104008 (2000)

35. *Null geodesics in the Alcubierre warp drive spacetime: the view from the bridge*
Chad Clark, William A. Hiscock and Shane L. Larson
Classical and Quantum Gravity **16**, 3965 (1999)

36. *Astrophysical bounds on global strings*
Shane L. Larson and William A. Hiscock
Phys. Rev. D **56**, 3242 (1997)

37. *Semiclassical effects in black hole interiors*
William A. Hiscock, Shane L. Larson and Paul R. Anderson
Phys. Rev. D **56**, 3571 (1997)

38. *Riparian shade and stream temperature: a perspective*
Larry L. Larson and Shane L. Larson
Rangelands **18**, 149 (1996)

39. *Effects of solvent viscosity on the microsecond protein motions of myoglobin determined by pulsed-laser photoacoustics*
M. L. Pearson, K. L. Mrakovcich, S. L. Larson and J. Rudzki Small
Biophysical J. **59**, 289a (1991)

40. *Photoacoustic studies of carboxymyoglobin*
S. L. Larson and J. Rudzki Small
Biophysical J. **57**, 229a (1990)

41. *Photoacoustic determination of fluorescent quantum yields of protein probes*
J. Rudzki Small and S. L. Larson
in *Time-Resolved Laser Spectroscopy in Biochemistry II*, J. R. Lakowicz, ed.,
SPIE Proceedings **1204**, 126 (1990)

In Preparation

1. *The First Frontier: High altitude ballooning as a platform for student research experiences in science and engineering*, Shane L. Larson, John C. Armstrong and William A. Hiscock, to be submitted to *American Journal of Physics*

2. *Measuring electron column density with gravitational wave observations*, Shane L. Larson and Seth Timpano, to be submitted to *Astrophysical Journal*

3. *Detecting a Stochastic Gravitational Wave Background: The Overlap Reduction Function*, Joseph D. Romano, Shane L. Larson and Lee Samuel Finn, to be submitted to *Physical Review D*

4. *Extracting the galactic shape from low-frequency gravitational wave observations*
   Shane L. Larson, Brett E. Taylor and Matthew Benacquista
   to be submitted to *Astrophysical Journal*

5. *Constraining the black hole mass spectrum with gravitational wave observations*, Danny C. Jacobs, Joseph E. Plowman, Ronald W. Hellings, Sachiko Tsuruta and Shane L. Larson, to be submitted to *Astrophysical Journal*

6. *Space weather and spaceborne gravitational wave observatories*
   Kristina D. Zaleski and Shane L. Larson
   to be submitted to *Classical and Quantum Gravity*

7. *Disruption of compact binary systems in extreme mass ratio systems*
   Shane L. Larson, Pablo Laguna and Deirdre Shoemaker
   to be submitted to *Astrophysical Journal Letters*

Other Publications

1. *The Impact of Finite-Differencing Errors on Binary Black Hole Merger Templates*
   Birjoo Vaishnav, Deirdre Shoemaker and Shane L. Larson
   Proceedings of the Sixth International LISA Symposium, AIP Conf. Proc. **873**, 125 (2006)

2. *The resolving power of LISA: comparing techniques for binary analysis*
   Shane L. Larson and Lee Samuel Finn
   Proceedings of the Sixth International LISA Symposium, AIP Conf. Proc. **873**, 415 (2006)

3. *An Overview of the Mock LISA Data Challenges*
   K. A. Arnaud, S. Babak, J. G. Baker, M. J. Benacquista, N. J. Cornish, C. Cutler, S. L. Larson, B. S. Sathyaprakash, M. Vallisneri, A. Vecchio, J-Y. Vinet (The Mock LISA Data Challenge Task Force), *Proceedings of the Sixth International LISA Symposium*, AIP Conf. Proc. **873**, 619 (2006)

4. *A How-To for the Mock LISA Data Challenges*
   K. A. Arnaud, S. Babak, J. G. Baker, M. J. Benacquista, N. J. Cornish, C. Cutler, S. L. Larson, B. S. Sathyaprakash, M. Vallisneri, A. Vecchio, J-Y. Vinet (The Mock LISA Data Challenge Task Force), *Proceedings of the Sixth International LISA Symposium*, AIP Conf. Proc. **873**, 625 (2006)

5. *Preparing for LISA Data: The Testbed for LISA Analysis Project*
   L. S. Finn, M. J. Benacquista, Shane L. Larson & L. J. Rubbo,*Proceedings of the Sixth International LISA Symposium*, AIP Conf. Proc. **873**, 640 (2006)

1. *Co-Editor, Relativity section of comPADRE* (`http://www.compadre.org/`), with Greg Comer (St. Louis University) and Bruce Mason (University of Oklahoma) (Fall 2008 to present)

2. *Instructor: International Summer School on Gravitational Wave Astronomy*
   China West Normal University & Center for Gravitational Wave Astronomy - University of Texas at Brownsville
   Nanchong, Sichuan, China (June, 2007)

3. ▸ *LISA Data Analysis: Stochastic Backgrounds* (section), with Alberto Vecchio
   ▸ *LISA Data Analysis: Low Mass Binaries* (section), with Neil Cornish and Stas Babak
   LISA Data Analysis: Time Delay Interferometry (section)
   for the LIST Documents Preparation Effort
   National Academy BEPAC Assessment (Fall 2006/Winter 2007)

4. *Verification binaries* (section), with Alberto Vecchio and Gijs Nelemans
   for *LISA Science Requirements Document* (v4)
   for the LISA International Science Team (Fall 2006/Winter 2007)

5. *White Paper: Addressing LISA Science Analysis Challenges*
   M. J. Benacquista, L. S. Finn, Shane L. Larson & L. J. Rubbo (2006)
   arxiv.org: gr-qc/0606089

6. *White Paper: The Testbed for LISA Analysis Project*
   L. S. Finn, M. J. Benacquista, Shane L. Larson & L. J. Rubbo (2006)
   arxiv.org: gr-qc/0602019

7. *Testbed for LISA Analysis*
   February 2006
   http://tla.gravity.psu.edu

8. *Contribution of Compact Mass Transferring Systems to the Galactic Gravitational Wave Background*
   Krzysztof Belczynski, Matthew Benacquista, Shane L. Larson, and Ashley J. Ruiter
   astro-ph/0510718 (2005)

9. *Gravitational Wave Astronomy*
   Special Session of the American Astronomical Society Meeting, January 2005
   Shane L. Larson, Michelle B. Larson, Lee Samuel Finn (Organizers)

10. *Workshop Summary: Imagining the Future*
    in *Matters of Gravity*, APS Topical Group in Gravitation, January 2005
    Shane L. Larson

11. *White Paper: Estimates of detection rates for LISA capture sources*
    report to the LISA International Science Team (2004)
    L. Barak, T. Creighton, C. Cutler, J. Gair, S. Larson, E. S. Phinney, K. S. Thorne, & M. Vallisneri (LISA Working Group 1)

12. *New eyes on the sky: Gravitational waves and multi-messenger astronomy*
    Karen Willacy & Shane L. Larson
    LISA Newsletter, Vol. 1 No. 2 (2004)
    http://lisa.nasa.gov/newsletter/newsletter_200408.pdf

13. *Online Sensitivity Curve Generator*
Shane L. Larson, April 2002
http://www.srl.caltech.edu/∼shane/sensitivity/MakeCurve.html

14. *White Paper: LISA Draft Science Requirements*
report to the LISA International Science Team (2002)
E. S. Phinney & LISA Working Group 1

15. *White Paper: Science impact of the low frequency performance of LISA*
report to the LISA International Science Team (2001)
E. S. Phinney & LISA Working Group 1

16. *Museum of the Rockies Observatory (MoRO): An idea document*
Loren W. Acton, Alisdair Davey, Michelle B. Larson and Shane L. Larson
submitted to Museum of the Rockies, Bozeman, MT (2001)

17. *Can gravitational waves be detected in quasar microlensing?*
Shane L. Larson and Rudolph Schild
arxiv.org: astro-ph/0007142

18. *Is dark matter theory or fact?*, Rhett Herman & Shane L. Larson
for Scientific American "Ask the Experts" (June, 1998); available online

Invited Talks

1. Departmental Colloquia: 25 invited colloqiua — 2000 to present

2. ▸ *The Dark Side of the Cosmos: Dark matter in the galaxy and cosmos*
▸ *Starlight in the Night: Discovering the secret lives of stars*
Yellowstone National Park — 1 & 2 August 2008

3. *Quarks to the Cosmos*
EELS Seminar Series, ATK Launch Systems
Promontory, UT — 30 July 2008

4. *Whispers from the Cosmos*
at "Seeing the Universe Without Your Eyes" Speical Session
Summer Meeting of the American Association of Physics Teachers
Edmonton, AB — 22 July 2008

5. *LISA Advocacy Working Group Status Report*
at LISA International Science Team (LIST) Meeting
University of Barcelona
Barcelona, Spain — 21 June 2008

6. ▸ *Oases in the Dark: Galaxies as Probes of the Cosmos*
▸ *Monsters in the Cosmic Sea: Black Holes & Einstein's Astronomical Legacy*
Yellowstone National Park — 10 & 11 August 2007

7. *Oases in the Dark: Galaxies as Probes of the Cosmos*
Winter Lecture Series, Museum of the Rockies
Bozeman, MT — 26 January 2007

8. *Listening to the Cosmic Fugue: LISA and the gravitational wave Universe*
   at "Albert Einstein and his Legacy" Symposium
   Topical Meeting of the New York Section of the American Physical Society
   Hamilton, NY — 15 October 2005

9. *LISA: a modern astrophysical observatory*
   SLAC Summer Institute Lecture, Stanford University
   Stanford, CA — 26 July 2005

10. *Using LISA as an astrophysical observatory*
    LISA: Science, Sources and Analysis Workshop
    Aspen Center for Physics
    Aspen, CO — 30 May 2005

11. *Close encounters of a different kind: Extreme mass ratio capture orbits*
    Institute for Gravitational Physics and Geometry
    The Pennsylvania State University
    University Park, PA — 11 October 2004

12. *Galactic binary foregrounds: resolving, identifying and subtracting binary stars*
    Globular Cluster Dynamics and Gravitational Radiation Workshop
    The Pennsylvania State University
    University Park, PA — 17 October 2003

13. *Low frequency gravitational waves from the galactic halo*
    Source Simulation and Gravitational Wave Data Analysis Workshop
    The Pennsylvania State University
    University Park, PA — 29 October 2002

Outreach Activities

1. Director: *Science Unwrapped*
   Utah State University, College of Science — 2008 to present

2. Public Lectures: 35+ Public Lectures — 1997 to present
   States: California, Colorado, Idaho, Montana, Oregon, Pennsylvania, Utah, Virginia, Washington
   Topics: Black Holes, Gravitational Waves, Einstein, Astronomy, Galaxies, Dark Matter, SETI, Mars Exploration

3. Interviews: *Large Hadron Collider*
   Utah Public Radio — 10 Sept 2008
   Salt Lake Tribune — 10 Sept 2008
   Deseret News — 11, 15 Sept 2008

4. Sponsor: Lego Science Bulding Contest — September 2008
   Created, judged and fronted the prizes for the Brick Science Building Contest
   hosted at `http://www.reasonablyclever.com/lego/contest/mad/`

5. Flight Director: *HARBOR High Altitude Balloon Project*
   `http://space.weber.edu/harbor/`
   Weber State University — 2007 to present

6. Course Instructor: *Cosmic Frontiers*
   Weber State University, Continuing Education Program
   Spring 2008

7. Course Instructor: *Conversations with the Cosmos*
   Weber State University, Continuing Education Program
   Spring 2007, Fall 2007

8. Planetarium Narration: *Gravitational Attraction*
   Ott Planetarium, Weber State University — 2007, 2008

9. *World Year of Physics Speakers Bureau*
   Gravitational Physics Speakers Bureau
   APS Topical Group in Gravitation – 2005 to present

10. Science Advisor: STARDATE Radio, *Astrophysics and gravitational waves*
    4 Radio Scripts – April, 2006
    2 Radio Scripts – December, 2005
    5 Radio Scripts – June, 2005

11. Science Advisor:*Black Holes*, Planetarium Script
    Clark Planetarium, Salt Lake City, UT – April, 2005

12. Science Advisor: *Science is all around us*
    30 sec commercial spot, Discovery Science Channel
    Concrete Pictures, Philadelphia, PA — 2002

13. Professional mentor: *Senior Project: Video Rocketry*
    Senior project, Gabriel Rudy and Daniel Patterson
    Loomis Chaffee School, Windsor, CT — 2002

14. Science Advisor: BOREALIS High Altitude Balloon Program
    Montana State University — 2001-2003

15. Vice-President/Program Coordinator: Southwest Montana Astronomical Society
    Bozeman, Montana — 1997-2000

16. Coordinator: Montana Mars Exploration Outreach Program
    Montana Space Grant Consortium — 1996-1999

17. *Montana Space Odyssey* (Summer Science Experience), Montana State University
    Director — Summer 1996
    Science Advisor — Summer 2001

18. Director: Peaks and Potentials I & II (Summer Youth Camps)
    Montana State University — Summers 1992-1995

19. Science Advisor: Young Scholars Program
    Montana State University — 1992;1994
    Oregon State University — 1991

Grant Activity

1. *"Problems in Gravitational Wave Data Analysis"*
   Shane L. Larson (P.I.)
   National Science Foundation, (2009-2011, pending)

2. *"CAREER: Aspects of Source Populations in Gravitational Wave Asrophysics"*
   Shane L. Larson (P.I.)
   National Science Foundation, (2009-2014, pending)

3. *"HARBOR: Sustainability Funding"*
   John C. Armstrong (P.I.), John Sohl, Michelle Arnold, Adam Johnston, Michael Hernandez, Jeff Ward and Shane L. Larson
   H. Raymond Bingham Faculty Collaboration and Research Fund; $19,000.00 (2009-2010, pending)

4. *"Gravitational Radiation from Intermediate Mass and Massive Black Holes"*
   Sachiko Tsuruta (P.I.), Shane L. Larson (Co-I.)
   NASA ATFP, (2009-2011, pending)

5. *"The Search for Earth - Collaborative Research in Extrasolar Planets"*
   John C. Armstrong (P.I.), Shane L. Larson (Co-I.)
   H. Raymond Bingham Faculty Collaboration and Research Fund; $19,921.00 (2007-2009)

6. *"HARBOR - A high altitude balloon program for student access to near space"*
   Shane L. Larson (P.I.), John C. Armstrong (Co-I.)
   Weber State University (internal); $3500.00 (2007-2008)

7. *"PASCAL: An Experiment in High Altitude Ballooning"*
   Samantha Balaich (P.I.), Shane L. Larson (Faculty Advisor)
   Weber State University Undergraduate Research Program; $1650.00 (2007-2008)

8. *"Observatory Renovation and Improvement Project"*
   Shane L. Larson (P.I.) Hemmingway Instructional Improvement
   Weber State University (internal); $2500.00 (2007-2008)

9. *"Million Star Galactic Computer Modeling"*
   Shane L. Larson (P.I.), Hemmingway New Faculty Grant
   Weber State University (internal); $2000.00 (2007)

10. *"Compact binary sources and science with LISA"*
    Lee Samuel Finn (P.I.), Shane L. Larson (Science P.I.)
    NASA ROSS - Beyond Einstein Foundation Science, $426,566.00 (2005-2007)

11. *"Montana Space Odyssey"*, Kimberly K. Obbink, Shane L. Larson & C. Vogeli
    Education Enhancement Grant, Montana Space Grant Consortium, $53,538.00 (1996)

Referee Duties

- *American Journal of Physics*
- *Astronomy and Astrophysics*
- *Classical and Quantum Gravity*
- *Europhysics Letters*

- *International Journal of Modern Physics D*
- *Monthly Notices of the Royal Astronomical Society*
- *Physical Review D*

Teaching Experience

1. Instructor: USU 1040: Elementary Astronomy – Utah State, Fall 2008
2. Instructor: PHYS 1040: Elementary Astronomy – Weber State, Spring 2007, Spring 2008
3. Instructor: PHYS 2010: College Physics I – Weber State, Fall 2006, Fall 2007
4. Instructor: PHYS 2020: College Physics II – Weber State, Spring 2007, Spring 2008
5. Instructor: PHYS 3500: Analytical Mechanics – Weber State, Fall 2006, Fall 2007
6. Instructor: PHYS 2830: Introductory Readings in Physics – Weber State
   - Fall 2007: *Fundamental Physics* (Matt Spiva)
7. Instructor: PHYS 4800: Individual Research Problems – Weber State
   - Fall 2007: *Atmospheric Physics and High-altitude Ballooning* (Samantha Balaich)
   - Spring 2008: *High-altitude Ballooning* (John Metcalf, Desaree Neville, Samuel Silver, Paul Whitney, Rhett Zollinger)
8. Instructor: PH 213: Modern Physics (with Calculus) – Montana State, Fall 1996
9. Lead Tutorial Instructor: PH 205: General Physics – Montana State, Fall 1997
10. Lead Tutorial Instructor: PH 206: General Physics – Montana State, Spring 1994
11. Laboratory Teaching Assistant – Montana State:
    - PH 311: Observational Astronomy – Fall 1993, Summer 1998
    - PH 103: Conceptual Physics – Fall 1997
    - PH 101: Mysteries of the Sky – Fall 1991 to Spring 1993

Teaching evaluations, as well as feedback/testimonials from public events can be provided upon request.

Affiliations

- American Association of Physics Teachers
- American Astronomical Society
- Astronomical League
- American Physical Society
- LISA International Science Team Advocacy Working Group
- LISA Working Group 1 (Astrophysical Sources & Data Analysis)
- Mock LISA Data Challenge Task Force (LISA Working Group 1b)
- National Association of Rocketry (NAR #73310)

- Sigma Pi Sigma

Recent Colleagues

- John C. Armstrong (Physics, Weber State University)
- Stas Babak (Albert Einstein Institute)
- Krzysztof Belczynski (Los Alamos National Laboratory)
- Matthew Benacquista (Physics, University of Texas-Brownsville)
- Greg Comer (St. Louis University)
- Lee Samuel Finn (Physics, Pennsylvania State University)
- Marc Freitag (Institute of Astronomy, Cambridge University)
- Jonathan Gair (Institute of Astronomy, Cambridge University)
- Dawn Gelino (Michelson Science Center, Caltech)
- Ron Hellings (NASA HQ & Physics, Montana State University)
- Kelly Holley-Bockelman (Vanderbuilt University)
- Clovis Hopman (Leiden University)
- Scott Hughes (MIT)
- Dale Ingram (LIGO-Hanford)
- Danny Jacobs (Physics, Montana State University)
- Rick Jenet (Physics, University of Texas-Brownsville)
- Vicky Kalogera (Physics & Astronomy, Northwestern University)
- Dan Kennefick (Einstein Papers/Caltech & University of Arkansas)
- Pablo Laguna (School of Physics, Georgia Tech)
- Andrea Lommen (Physics & Astronomy, Franklin & Marshall College)
- Bruce Mason (University of Oklahoma)
- Joseph Plowman (Physics, Montana State University)
- Ed Porter (APC, Paris)
- Tom Prince (Space Radiation Laboratory, Caltech & JPL)
- Patricia Purdue (Physics, Colorado College)
- Pete Roming (SWIFT/Astronomy & Astrophysics, Pennsylvania State University)
- Joe Romano (Physics, University of Texas-Brownsville)
- Louis Rubbo (Coastal Carolina University)

- Ashley Ruiter (Astronomy, New Mexico State University)
- Deirdre Shoemaker (School of Physics, Georgia Tech)
- Brett Taylor (Physics, Radford University)
- Seth Timpano (Physics, Pennsylvania State University)
- Massimo Tinto (Jet Propulsion Laboratory)
- Sachiko Tsuruta (Physics, Montana State University)
- Michele Vallisneri (Jet Propulsion Laboratory)
- Alberto Vecchio (University of Birmingham)
- Kristina Zaleski (Engineering, North Carolina State University)
- Rhett Zollinger (Physics, Weber State University)

Other Interests

- Recreational Astronomy: Telescope making, Deep sky observing
- Lego modeling: http://www.brickshelf.com/gallery/graviton/
- Model and High Power Rocketry
- Mountain biking

Research References

- *Dr. Lee Samuel Finn*
  Director, Center for Gravitational Wave Physics & Professor of Physics
  Member LISA International Science Team
  104 Davey Lab, The Pennsylvania State University, University Park, PA 16802
  PHONE: 814-863-9598 eMAIL: lsfinn@psu.edu
- *Dr. Pablo Laguna*
  Director, Center for Relativistic Astrophysics &
  Professor of Physics
  School of Physics, Georgia Tech
  837 State Street
  Atlanta, GA 30332
  PHONE: 404-385-3907 eMAIL: plaguna@gatech.edu
- *Dr. Thomas A. Prince*
  Chief Scientist, Jet Propulsion Laboratory & Professor of Physics
  LISA Mission Scientist & Head LISA International Science Team
  M/C 220-47, California Institute of Technology, Pasadena, CA 91109
  PHONE: 626-395-6605 eMAIL: prince@srl.caltech.edu

- *Dr. Bonny L. Schumaker*
  LISA Deputy Mission Scientist & Research Scientist
  Jet Propulsion Laboratory
  Mail Stop 198-235, Pasadena, CA 91109
  PHONE: 818-354-4169 eMAIL: Bonny.L.Schumaker@jpl.nasa.gov

- *Dr. Massimo Tinto*
  Research Scientist
  Jet Propulsion Laboratory
  Mail Stop 161-260, Pasadena, CA 91109
  PHONE: 818-354-0798 eMAIL: massimo.tinto@jpl.nasa.gov

- *Dr. Ronald W. Hellings*
  Discipline Scientist, Gravitational Physics, Universe Division (NASA Headquarters) &
  Research Professor, Montana State University
  PHONE: 202-358-0995 eMAIL: rhelling@nasa.gov

- *Dr. William A. Hiscock*
  Director, Montana Space Grant Consortium & Professor of Physics
  Montana State University, EPS 264 Bozeman, MT 59717
  PHONE: 406/994-6170 eMAIL: hiscock@montana.edu

- *Dr. Neil J. Cornish*
  Assistant Professor of Physics; Member LISA International Science Team
  Montana State University, EPS 264 Bozeman, MT 59717
  PHONE: 406-994-7986 eMAIL: cornish@physics.montana.edu

Teaching References

- *Dr. Kimberly K. Obbink*
  Director, Burns Technology Center
  Montana State University, EPS 128 Bozeman, MT 59717
  PHONE: 406-994-6550 eMAIL: kobbink@montana.edu

- *Dr. Gerry Wheeler*
  Professor of Physics
  Former Executive Director, National Science Teachers Association
  Montana State University, EPS 264 Bozeman, MT 59717
  eMAIL: gwheeler@nsta.org

- *Dr. Larry D. Kirkpatrick*
  Professor of Physics, Former President AAPT
  Montana State University, EPS 264 Bozeman, MT 59717
  PHONE: 406-994-6182 eMAIL: kirkpatrick@physics.montana.edu

- *Dr. Gregory Francis*
  Professor of Physics
  Montana State University, EPS 264 Bozeman, MT 59717
  PHONE: 406-994-6625 eMAIL: francis@physics.montana.edu