

CURRICULUM VITAE

Jason J.B. Harlow

A. BIOGRAPHICAL INFORMATION

1. PERSONAL

Name: Jason John Bradley Harlow
University address: Department of Physics, University of Toronto
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Toronto, ON M5S1A7
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2. DEGREES

Ph.D. 2000 Department of Astronomy and Astrophysics, The Pennsylvania State University
- Title of graduate thesis: "The Faint End of the Stellar Luminosity Function"
- Supervisor's name: Donald Schneider

B.Sc. 1993 Department of Physics, University of Toronto
- Title of graduate thesis: "Radial Velocities of M Dwarfs"
- Supervisor's name: Karl Kamper

3. EMPLOYMENT

- Associate Chair, Undergraduate Studies, Department of Physics, University of Toronto, 2016 to present
- Associate Professor, Teaching Stream, Department of Physics, University of Toronto, 2016 to present
- Senior Lecturer, Department of Physics, University of Toronto, 2010 to 2015
- Lecturer, Department of Physics, University of Toronto, 2004 to 2010
- Assistant Professor, Department of Physics, University of the Pacific, 1999 to 2004
- Graduate Research and Teaching Assistant, Department of Astronomy and Astrophysics, The Pennsylvania State University, 1994 to 2000
- Telescope Operator, David Dunlap Observatory, University of Toronto, 1993 to 1994
- Undergraduate Research Assistant, Department of Astronomy and Astrophysics, University of Toronto, 1992 to 1993

4. HONOURS

The Royal Astronomical Society Gold Medal, University of Toronto (1993)

5. PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Canadian Association of Physicists (2016 – present)
Ontario Association of Physics Teachers (2005 – present)

B. ACADEMIC HISTORY

6. A. RESEARCH ENDEAVOURS

- Physics Education Research, Best Teaching Methods
- Low Mass Stars, the Faint End of the Stellar Luminosity Function
- Astronomical Instrumentation, Fibre Optics

C. SCHOLARLY AND PROFESSIONAL WORK

7. Refereed publications

A. Articles

- **Harlow, J.J.B.**, Harrison, D.M., Justason, A., Meyertholen, A. and Wilson, B. "Personality types and student performance in an introductory physics course" 2017, Phys. Rev. Phys. Educ. Res. 13, 020124
- **Harlow, J.J.B.**, Harrison, D.M and Meyertholen, A. "Effective student teams for collaborative learning in an introductory university physics course" 2016, Phys. Rev. Phys. Educ. Res. 12, 010138
- French, M., Taverna, F.A., Neumann, M., Paulo Kushnir, L., **Harlow, J.J.B.**, Harrison, D.M. and Serbanescu, R.M. "Textbook Use in the Sciences and Its Relation to Course Performance" 2015, College Teaching, v.63, p.171
- **Harlow, J.J.B.**, Harrison, D.M. and Honig, E. "Compressed-format compared to regular-format in a first-year university physics course" 2015, American Journal of Physics v.83, p.272
- **Harlow, J.J.B.**, Landau, R. and Bailey, D.C. "The Effects of Physics Breadth Courses on Student Attitudes About Science" 2014, Physics in Canada / La Physique au Canada Theme: Physics Education v.70.2, p.69
- **Harlow, J.J.B.**, Harrison, D.M. and Meyertholen, A. "Correlating student interest and high school preparation with learning and performance in an introductory university physics course" 2014, Physical Review Special Topics Physics Education Research, v.10, p.010112
- **Jason Harlow**, Lena Kushnir, Charly Bank, Scott Browning, Jim Clarke, David Harrison, Karen Ing, Cecilia Kutas and Ruxandra Serbanescu "What's all the clicking about? A study of Classroom Response System use at the University of Toronto" 2009, Collected Essays on Learning and Teaching (CELT), vol. 2. (10 pages)
- Melody Neumann, Charly Bank, Scott Browning, Jim Clarke, **Jason Harlow**, David Harrison, Karen Ing, Lena Kushnir, Cecilia Kutas, John Pitre, Ruxandra Serbanescu, Marty Wall, and Ron Wilson "Serial Team Teaching and the Evolving Scholarship of Learning: Students' Perspective" 2008, Collected Essays on Learning and Teaching (CELT), vol. 1. (8 pages)
- Wade, R.A., **Harlow, J.J.B.** and Ciardullo, R.B. "Biases in Expansion Distances of Novae Arising from the Prolate Geometry of Nova Shells" 2000, Publications of the Astronomical Society of the Pacific, v.112, p.614 (11 pages)
- Orosz, J.A., Wade, R.A., **Harlow, J.J.B.**, Thorstensen, J.R., Taylor, C.J. and Eracleous, M. "The Post-Common Envelope and Pre-cataclysmic Binary PG 1224+309" 1999, Astronomical Journal, v.117, p.1598 (11 pages)
- Percy, J.R., **Harlow, J.J.B.**, Hayhoe, K.A.S., Ivans, I.I., Lister, M., Plume, R., Rosebery, T., Thompson, S. and Yeung, D. "Photometric Monitoring of Bright Be Stars. III. 1988-89 and 1992-95" 1997, Publications of the Astronomical Society of the Pacific, v.109, p.1215 (6 pages)
- Orosz, J.A., Wade, R.A. and **Harlow, J.J.B.** "Variable Radial Velocities Among Composite-Spectrum Binaries in the PG Catalog" 1997, Astronomical Journal, v.114, p.317 (9 pages)
- **Harlow, J.J.B.** "The M Dwarf Double Lined Spectroscopic Binary Gliese 372" 1996, Astronomical Journal, v.112, p.2222 (5 pages)
- Uppgren, A.R., and **Harlow, J.J.B.** "Space Motions of Low-Mass Stars. II. Radial Velocities" 1996, Publications of the Astronomical Society of the Pacific, v.108, p.64 (4 pages)

B. Books and/or Chapters

C. Books edited

- "Physics for the Life Sciences" 3rd Edition by Martin Zinke-Allmang, Ken Sills, Reza Nejat and Eduardo Galiano-Riveros ©2016 by Nelson. I reviewed five chapters.
- "Principles & Practice of Physics" by Eric Mazur ©2014 by Addison-Wesley. I edited the online homework assignments in MasteringPhysics
- "Physics for Scientists and Engineers: 3rd Edition" by Randall D. Knight, ©2012 Addison Wesley. I reviewed 10 chapters.

- Ontario High School Textbook: “Physics 11” by Maurice DiGiuseppe et al, ©2011 Nelson Education Ltd. I was an accuracy-checker.
- “University Physics 13th Edition” by Hugh D. Young and Roger A. Freedman, ©2011 Pearson Addison-Wesley. I accuracy-checked the entire book.
- Ontario Grade 11 Physics Curriculum “Unit A: Kinematics” and “Unit B: Forces” ©2010 Pearson Edvantage Press. Reviewed and accuracy-checked the new edition.
- “College Physics: A Strategic Approach 2nd Edition” by Randall D. Knight, Brian Jones and Stuart Field, ©2010 Pearson Addison-Wesley. Reviewed 8 chapters and accuracy-checked the entire book.
- “Physics for Scientists and Engineers: A Strategic Approach 2nd Edition” by Randall D. Knight, ©2007 Addison Wesley. I created a complete set of lecture outlines in Powerpoint, and reviewed and edited the online MasteringPhysics tutorials.
- “Physics for Scientists and Engineers 6th Edition” by Paul A. Tipler, Gene Mosca, ©2007 W. H. Freeman. – I reviewed and corrected a complete set of Clicker Questions.

8. Non-Refereed Publications

- Bailey, D.C., **Harlow, J.J.B.** and Krasnopolskaia, N.N. “The Advanced Physics Lab at the University of Toronto” 2009, Topical Conference on Advanced Laboratories, Session II S14, July 23-25, 2009 University of Michigan www.advlabs.aapt.org
- Bailey, D.C., **Harlow, J.J.B.**, Krasnopolskaia, N.N. and Morris, S.W. “A Knots Experiment” 2009, Topical Conference on Advanced Laboratories, Session IX L02, July 23-25, 2009 University of Michigan www.advlabs.aapt.org
- Sperauskas, J., Boyle, R.P., **Harlow, J.J.B.**, Jahreiss, H. and Upgren, A.R. “An Ongoing Program of Radial Velocities of Nearby Stars” 2004, Bulletin of the American Astronomical Society, 203, 43.02
- **Harlow, J.J.B.** “The Faint End of the Stellar Luminosity Function” 2000, Bulletin of the American Astronomical Society, 197, 127.03
- **Harlow, J.J.B.**, Wade, R.A. and Ciardullo, R.B. “Implications of the Assumption of Spherical Symmetry on Nova Expansion Parallaxes” 1999, Bulletin of the American Astronomical Society, 195, 36.03
- **Harlow, J.J.B.**, Pavlov, G.G. and Halpern, J.P. “HST/NICMOS observations of PSR 0656+14 and Geminga” 1999, Bulletin of the American Astronomical Society, 193, 41.07
- **Harlow, J.J.B.**, Schneider, D.P. “Limits on the Stellar Luminosity Function as Determined from a CCD Transit Survey” 1998 Bulletin of the American Astronomical Society, 191, 108.04
- **Harlow, J.J.B.**, Ramsey, L. W., Andersen, D.R., Fleig, J.D., Rhoads, B.T. and Engel, L.G. “The Upgraded Fiber Optic Echelle Spectrograph” 1997 Bulletin of the American Astronomical Society, 189, 42.07
- **Harlow, J.J.B.** “The Radial Velocity Curves of the Two Components of the Spectroscopic Binary Gliese 372, a Double M-Dwarf System” 1996 Bulletin of the American Astronomical Society, 188, 60.06

9. Manuscripts/publications, etc. in preparation and submitted to publishers but not yet accepted.

10. Papers presented at meetings and symposia.

- **Jason Harlow**, “Personality Types and Student Performance in an Introductory Physics Course”, International Conference on Improving University Teaching (IUT), Tel Aviv, Israel, July 19, 2017
- **Jason Harlow**, “Personality Types and Student Performance in an Introductory Physics Course”, Canadian Association of Physicists Congress (CAP), Queen’s University, Kingston ON, May 30, 2017
- **Jason Harlow**, “Clickers in the classroom: best practices, common pitfalls, and a test of efficacy”, Large-Class Science & Math Teaching Symposium, Department of Chemistry, University of Toronto, Feb. 19, 2016
- **Jason Harlow** and Andrew Meyertholen “Fun with Waves and Sound” 2014, Ontario Association of Physics Teachers 36th Annual Conference Toronto May 8-10 2014, Session D.20

- **Jason Harlow** “Grade 10: Optics” 2012, Ontario Association of Physics Teachers 34th Annual Conference Waterloo April 26-28 2012, Session A.05
- **Jason Harlow** “Ray Optics” 2011, Ontario Association of Physics Teachers 33rd Annual Conference Hamilton May 12-14 2011, Session C.11
- **Jason Harlow**, Heather Andres, Alireza Mashayekhi, Eric Lee and Kemp Plumb, “Forces, Motion & the Scientific Method” and “Electricity, Magnetism and Geometric Optics” 2010 Ontario Association of Physics Teachers 32nd Annual Conference Toronto April 29-May 1 2010, Sessions B.02, C.07, D.12, E.17, E.20, F.23 and F.26 [I also co-hosted this conference.]
- **Jason Harlow**, David Harrison, Tony Key, “Engaging a Class of a Thousand Students” 2005 Teaching Large Classes: Challenges and Opportunities, Wilfrid Laurier University and Institute for the Advancement of Teaching in Higher Education May 18, 2005.
- Wade, R.A., **Harlow, J.J.B.** and Orosz, J.A. “Variable Radial Velocities Among the Ferguson-Green-Liebert Hot Subdwarf Composites in the PG Catalog” 1996, Third Faint Blue Stars Conference, ed. A.G.D. Philip (Schenectady: Union College), 429

11. Invited Lectures

- “Teaching Large Classes” Mar. 6, 2018, Woodsworth College Teaching in Higher Education seminar
- “Practicals: Not a Lab, Not a Tutorial” Nov. 7, 2012 Department of Astronomy and Astrophysics, University of Toronto
- “Putting Results of Physics Education Research Into Practice” Jan. 4, 2012 Physics Department, Indian Institute of Technology Delhi, India
- “Teaching Big First Year Physics: Combining Labs and Tutorials” Jan. 25, 2011 York University Physics & Astronomy Departmental Colloquium

D. LIST OF COURSES (in preceding 5 years)

12. Undergraduate courses taught

- Department of Physics, University of Toronto
 - Physics of Music (PHY207): online-only breadth course, with approximately 100 students per semester. 2018
 - Introduction to Physics I (PHY131): first semester of a year-long laboratory-based course suitable for life-sciences students, with approximately 1000 students per semester 2009-2015, 2017
 - Foundations of Physics I (PHY151) Practicals Coordinator, our first specialist course with approximately 200 students per semester. 2013-present
 - Foundations of Physics II (PHY152) Practicals Coordinator, our second specialist course with approximately 270 students per semester. 2014-present
 - Introduction to Physics II (PHY132F): second semester of a year-long laboratory-based course suitable for life-sciences students, 500-700 students in the on-semester, 50-100 students in the off-semester. 2009-2015
 - Physics of Everyday Life (PHY205), a one-semester lecture course designed for non-science students, 350 students per semester. 2005-2006, 2012-2014.

B. Graduate courses taught

- Microteaching Mini-course, required for all 1st year physics graduate students, to give students practice giving a formal presentation in front of a small group, and discuss public speaking. 2007-present

C. Theses supervised.

- Mark Kazakevich, PHY478H1S Winter 2015. The title of the project was “Developing Programming Teaching-Tools for in a First-Year Physics Course”
- Rikki Landau, M.Sc. Report (Option I), I co-supervised this student with David Bailey. The title of her report was: “Student Background, Attitudes, and Performance in Physics Breadth Courses”. 2012-2013

E. ADMINISTRATIVE POSITIONS

13. A. Positions held and service on committees and organizations within the University.
- Undergraduate Curriculum Committee Chair, Physics Department, 2016-present.
 - Progress Through the Ranks Committee Member, Physics Department, 2016-present
 - Planning Committee Member, Physics Department, 2016-present.
 - Outreach Committee Member, Physics Department 2007-present.
 - Sciences Curriculum Committee, Faculty of Arts and Science, 2016-present
 - Inclusivity Committee Member, Physics Department, 2015-present
 - Outreach Committee Chair, Physics Department 2015-2016.
 - 299 Research Opportunities Program Review Committee, Faculty of Arts and Science. 2015-2016.
 - Working Group on Undergraduate Laboratory Renewal (WGUL), Physics Department, 2013-2016.
 - Physics Web Page Committee 2010-2013.
 - Physics Library Committee 2010.
 - Undergraduate Curriculum Committee Member, Physics Department 2005-2010.
 - Undergraduate Services Committee, Physics Department 2009-2010.
 - First Year Practical Development, Physics Department 2005-2008. I worked to redesign the first-year laboratories and tutorials, including renovation of the physical space.
 - High School Liaison Committee Chair, Physics Department 2006-2007.
- B. Positions held and service on committees and organizations outside the University of scholarly and academic significance.
- University of the Pacific, Stockton, California, U.S.A., 1999-2004
 - Committee on Courses and Standards, College of the Pacific (2001 - 2004)
 - Academic Affairs Committee: Geosciences Program Review Panel (2003-2004)
 - General Education Committee (2003-2004)