

## Sean T. McWilliams

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BIOGRAPHY Born April 8, 1981 in Allentown, PA, USA. Married with three children, ages 3, 6, and 8.

RESEARCH INTERESTS Numerical relativity in vacuum and with matter, gravitational wave source modeling of compact binaries including their electromagnetic counterparts, gravitational wave data analysis including constraints on cosmology and neutron star equation-of-state, gravitational wave detection and parameter estimation with Advanced LIGO, NANOGrav, and eLISA

EDUCATION **University of Maryland**, College Park, MD  
Ph. D. in Physics Spring 2008  
Dissertation Topic: “Applying Numerical Relativity to Gravitational Wave Astronomy”  
Advisor: Joan M. Centrella  
M. S. in Physics Spring 2006  
*Honors*  
Gravitational Wave International Committee Thesis Prize, Honorable Mention Fall 2008  
Leon A. Herreid Fellowship Fall 2005–Spring 2008  
NASA Lab for High Energy Astrophysics Fellowship Fall 2003–Spring 2005  
University Senator Fall 2007–Spring 2008

**Pennsylvania State University**, University Park, PA  
B. S. in Physics and B. S. in Astronomy/Astrophysics, with honors Spring 2003  
Thesis Topic: “Detection of gravitational wave emission from coalescing black hole binaries”  
Advisor: Pablo Laguna  
Minors in Mathematics, Astrobiology, and Philosophy  
*Honors*  
Schreyer Honors Scholarship Fall 1999–Spring 2003  
John Teas Scholarship Fall 2001–Spring 2003  
Penn State Deans List Spring 2000–Spring 2003  
Phi Beta Kappa National Honors Society inducted Spring 2003  
Golden Key National Honors Society inducted Spring 2003

AFFILIATIONS American Physical Society  
American Astronomical Society  
eLISA/NGO/SGO Science Taskforce  
LIGO Scientific Collaboration  
NANOGrav Collaboration

## EMPLOYMENT

**Assistant Professor**

Fall 2013–Present

Department of Physics, West Virginia University, Morgantown, WV

Lead a research effort (currently two postdocs, three undergraduate students) in theoretical gravitational-wave astrophysics, teach two courses per year from the undergraduate and graduate Physics and Astronomy curricula.

**Postdoctoral Fellow**

Fall 2010–Spring 2013

Department of Physics, Princeton University, Princeton, NJ

Institute for Strings, Cosmology, and Astroparticle Physics, Columbia University, New York, NY

Joint long-term fellowship. Developed magnetohydrodynamic capabilities in numerical relativity code and performed simulations including matter. Applied results to analytic source modeling (both gravitational waves and electromagnetic counterparts) and data analysis of simulated gravitational wave observations with Advanced LIGO, NANOGrav, and LISA.

**NASA Postdoctoral Fellow**

Fall 2008–Spring 2010

NASA Goddard Space Flight Center, Greenbelt, MD

Developed code and performed numerical simulations of black-hole binaries with numerical relativity code `Hahndo1` and applied results to analytic source modeling and parameter estimation studies pertaining to LIGO and LISA.

**Graduate Fellow**

Fall 2003–Spring 2008

University of Maryland, College Park, Maryland

NASA Goddard Space Flight Center, Greenbelt, MD

NASA LHEA and Herreid fellowships covered full stipend and tuition remission, allowing creation of my own research plan for the entirety of my matriculation. Developed/ported modules for numerical relativity code `Hahndo1` and performed numerical simulations of dynamical spacetimes, applied the results to waveform modeling and parameter estimation.

TEACHING  
EXPERIENCE**Assistant Professor**

Fall 2013–Present

Department of Physics, West Virginia University, Morgantown, WV

Currently teach undergraduate classical mechanics, responsible for teaching two courses from the undergraduate and graduate curriculum in Physics and Astronomy.

**Instructor**

Fall 2008–Spring 2013

Physics and Astronomy curriculum, Thomas Edison State College, Trenton, NJ

Taught introductory-level courses in Physics and Astronomy for non-majors, including courses administered online via *Blackboard*.

**Guest Lecturer**

Spring 2011

Department of Physics and Astronomy, Barnard College of Columbia University, New York, NY

Lectured on numerous occasions for the introductory electricity and magnetism course for Physics majors

**Teaching Assistant**

Fall 2006–Spring 2007

Department of Physics, University of Maryland, College Park, MD

Taught an undergraduate optics laboratory section for Physics majors: lectured on the lab material, oversaw completion of the laboratory assignments, and graded lab write-ups.

Serve on the governing body for the LIGO Scientific Collaboration.  
Principal investigator for the institutional membership of West Virginia University.

**Conference Organizer**

Spring 2012–Present

Member of Scientific Organizing Committee, “2014 International Pulsar Timing Array Meeting”, June 23–June 27, 2014, Banff Centre, Alberta, Canada

Principal Organizer, “17th annual Eastern Gravity Meeting”, May 16–May 17, 2014, Erickson Alumni Center, West Virginia University, Morgantown, WV

Member of Scientific Organizing Committee, “2014 North American Nanohertz Observatory for Gravitational Waves Meeting”, February 5–February 7, 2014, Arecibo, Puerto Rico

Principal organizer, “Gravitational Waves Beyond the First Detection”, April 30–May 4, 2012, Princeton Center for Theoretical Science, Princeton University, Princeton, NJ

**Student Advisor/Mentor**

Fall 2009–Present

Serve as advisor for two physics undergraduate students (Trey McNeely and Logan Shamberger) and two postdoctoral associates (Eliu Huerta and Fan Zhang).

Previously served as co-advisor/mentor for physics graduate students (Evan Ochsner [Maryland], Solomon Endlich [Columbia], William East [Princeton]) and as co-advisor for an undergraduate thesis (Kai-Sheng Tai [Princeton]) and numerous REU students.

**Referee**

Fall 2008–Present

Astrophys. J., Astrophys. J. Lett., Class. Quant. Grav., Gen. Rel. Grav., Phys. Rev. D, and Phys. Rev. Lett.

**Seminar Organizer**

Fall 2011–Spring 2013

Gravity Group Astrophysics/Cosmology Seminar, Princeton University, Princeton, NJ

**University Senator**

Fall 2007–Spring 2008

Graduate student representative for the College of Computer, Mathematical and Physical Sciences, University of Maryland, College Park, MD.

**GRANTS AND ALLOCATIONS**

NSF TeraGrid/XSEDE Allocation TG-PHY100053, 2010–2011 and 2011–2012

Co-investigator

Apply dynamic GRHD to simulate black hole-neutron star binaries, including gravitational wave and electromagnetic signatures.

3 million SUs on Kraken for 2010–2011, 6.5 million SUs on Kraken for 2011–2012

NSF TeraGrid Allocation TG-AST100027, 2010–2011

Principal Investigator (PI)

Apply dynamic GRMHD code to simulate compact binary mergers and collapsars, including gravitational wave and electromagnetic signatures.

2 million SUs on Ranger

NVIDIA Professor Partnership Grant, 2011

PI (Sole investigator)

Provided with hardware and funding to construct a GPU cluster, and study the application of GPU supercomputing to dynamic GR simulations with CUDA.

NSF TeraGrid Allocation TG-PHY090103, 2009–2010

PI (Sole investigator)

Small development allocation to study dynamic GR and GR(M)HD using spectral elements.

NASA NCCS Allocation SMD-09-1370, 2009–2010

Co-investigator

Apply numerical relativity merger waveforms to address parameter estimation with LISA.

NASA grant 08-ATFP08-0126, 2008–2011

Co-investigator

Funded salary for one postdoc to develop a generic spinning waveform model, apply it to LISA parameter estimation.

NASA NCCS Allocation SMD-08-0929, 2008–2009

Co-investigator

Perform numerical relativity simulations, focusing on cases with large precessing spins.

## TALKS

## INVITED

35. “Signatures of massive galaxy mergers at  $z < 1$ ”, Astronomy Colloquium, Institute for Advanced Study, Princeton, NJ, May 2014
34. “Prospects for Detecting Stochastic Gravitational Waves from Supermassive Black-Hole Binaries with Pulsar Timing Arrays”, GRITTS Seminar, MIT, Cambridge, MA, March 2014
33. “Predicting the Stochastic Signal from Supermassive Black-Hole Binaries”, NANOGrav Conference, Arecibo Telescope, Arecibo, PR, February 2014
32. “Modeling and Detecting Gravitational Waves from Dynamical Capture Binaries”, Numerical Relativity and Data Analysis (NRDA), Mallorca, Spain, September 2013
31. “Signatures of massive galaxy mergers at  $z < 1$ ”, Frontiers in Cosmology Workshop, Perimeter Institute, Ontario, Canada, July 2013
30. “Gravitational waves and stalled satellites from massive galaxy mergers at  $z < 1$ ”, TAPIR Seminar, Caltech, Pasadena, CA, June 2013
29. “Update on massive galaxy merger rates at  $z < 1$ ”, NANOGrav Conference, Green Bank Telescope, Green Bank, WV, May 2013
28. “The imminent detection of gravitational-waves from massive black-hole binaries by pulsar timing arrays”, Theoretical Astrophysics and General Relativity Forum, University of Illinois at Urbana-Champaign, May 2013
27. “Gravitational waves and stalled satellites from massive galaxy mergers at  $z < 1$ ”, Theoretical Astrophysics Seminar, Johns Hopkins University, Baltimore, MD, March 2013
26. “Gravitational waves and stalled satellites from massive galaxy mergers at  $z < 1$ ”, Astrophysics Colloquium, NASA Goddard Space Flight Center, Greenbelt, MD, March 2013
25. “Binary Systems as Resonance Detectors for Gravitational Waves”, Astronomy Theory Seminar, University of Maryland, College Park, MD, March 2013
24. “Gravitational waves and stalled satellites from massive galaxy mergers at  $z < 1$ ”, Astrophysics Colloquium, Rutgers University, New Brunswick, NJ, February 2013
23. “Gravitational waves from massive galaxy mergers at  $z < 1$ ”, Gravity/Cosmology Seminar, Princeton University, Princeton, NJ, February 2013
22. “Predicting the Stochastic Signal from Supermassive Black-Hole Binaries”, Physical Applications of Millisecond Pulsars, Aspen Center for Physics, Aspen, CO, January 2013
21. “Gravitational-wave astronomy: the promise, the challenges, and the rapid approach of first ‘light’”, Astronomy Colloquium, West Virginia University, Morgantown, WV, December 2012
20. “The imminent detection of gravitational-waves from massive black-hole binaries by pulsar timing arrays”, NANOGrav Conference, Oberlin College, Oberlin, OH, October 2012
19. “Signatures of merger-dominated galaxy evolution at  $z < 1$ ”, Astrophysics Seminar, University of Chicago, Chicago, IL, October 2012
18. “Gravitational Wave and Electromagnetic Observation of Black Hole-Neutron Star Binaries”, CIERA Astrophysics Seminar, CIERA/Northwestern University, Evanston, IL, October 2012
17. “Alternatives to LISA for Gravitational Wave Observation at Low Frequencies”, Astrophysics Seminar, University of Pennsylvania, Philadelphia, PA, October 2012

16. “Alternatives to LISA for Gravitational Wave Observation at Low Frequencies”, Gravity Seminar, Albert Einstein Institute, Potsdam, Germany, September 2012
15. “Gravitational Wave and Electromagnetic Observation of Black Hole-Neutron Star Binaries”, Gravity Seminar, Albert Einstein Institute, Potsdam, Germany, August 2012
14. “Signatures of merger-dominated galaxy evolution at  $z < 1$ ”, Gravity/Cosmology Seminar, Princeton University, Princeton, NJ, February 2012
13. “Geostationary Antenna for Drag-Free Laser Interferometry (GADFLI)”, Gravitational Wave Mission Concepts Workshop, Columbia, MD, December 2011
12. “Electromagnetic Extraction of Energy from Black Hole-Neutron Star Binaries”, Astroplasmas Seminar, Princeton University, Princeton, NJ, October 2011
11. “Implications of a LISA Redesign for Massive Black-Hole Binary Observations”, Astro-GR, Universitat de les Illes Balears, Palma de Mallorca, September 2011
10. “Gravitational Wave Astronomy: Precision Measurements of Black Holes, Neutron Stars, and the Expanding Universe”, LA-Astro Seminar, Los Alamos National Laboratory, Los Alamos, NM, September 2011
9. “Gravitational Wave Astronomy in the Advanced Detector Era”, Astronomy Colloquium, Institute for Advanced Study, Princeton, NJ, March 2011
8. “Merging Black Holes and Ripples in Space”, Stargazing and Public Lecture Series, Columbia University, New York, NY, January 2011
7. “Gravitational Wave Astronomy with Black Hole Binary Mergers”, Astronomy Colloquium, Columbia University, New York, NY, November 2010
6. “The Status of Black Hole Binary Simulations”, NRDA/CAPRA 2010, Perimeter Institute, Ontario, Canada, June 2010
5. “Cosmography to  $z \sim 6$  with Coincident Gravitational Wave and Electromagnetic Observations”, Gravity/Cosmology Seminar, Princeton University, Princeton, NJ, March 2010
4. “Cosmography to  $z \sim 6$  with Coincident Gravitational Wave and Electromagnetic Observations”, ISCAP Seminar, Columbia University, New York, NY, February 2010
3. “Applying Numerical Relativity to Black Hole Binary Observation”, CGWP Seminar, Pennsylvania State University, University Park, PA, March 2009
2. “Parameter Estimation of Black-Hole Binary Mergers with LISA”, SEAL Seminar, NASA Goddard Space Flight Center, Greenbelt, MD, February 2009
1. “Parameter Estimation with LISA”, 37th COSPAR Scientific Assembly, Montreal, July 2008

#### CONTRIBUTED

19. LISA 10 Symposium, Gainesville, FL, May 2014
18. LISA 9 Symposium, Paris, France, May 2012
17. APS April Meeting, Atlanta, GA, March 2012
16. LISA 8 Symposium, Palo Alto, CA, June 2010
15. APS April Meeting, Washington, DC, February 2010
14. AAS Meeting, Washington, DC, January 2010
13. GWDAW, Rome, Italy, January 2010
12. 8<sup>th</sup> Edoardo Amaldi Conference, New York, NY, June 2009
11. APS April Meeting, Denver, CO, May 2009
10. NRDA 2008, Rochester, NY, August 2008
9. LISA 7 Symposium, Barcelona, Spain, June 2008
8. Post Newton 2008 International Workshop, Jena, June 2008
7. APS April Meeting, St. Louis, MO, April 2008
6. HEAD Conference, Los Angeles, CA, April 2008
5. AAS Meeting, Austin, TX, January 2008

4. IGC Inaugural Conference, University Park, PA, August 2007
3. APS April Meeting, Jacksonville, FL, April 2007
2. AAS Meeting, Seattle, WA, January 2007
1. LISA 6 Symposium, Greenbelt, MD, July 2006

PEER-REVIEWED  
PUBLICATIONS

Citations report via SAO/NASA Astrophysics Data System as of 4/24/2014:  
h-index = 26, 2258 citations.

SUBMITTED/ACCEPTED (in reverse chronological order, excludes contributed conference proceedings - see TALKS)

51. Z. Arzoumanian *et al.* (The NANOGrav Collaboration), “NANOGrav Limits on Gravitational Waves from Individual Supermassive Black Hole Binaries in Circular Orbits”, arXiv:1404.1267, submitted to *Astrophys. J.*
50. Kai Sheng Tai, **Sean T. McWilliams**, and Frans Pretorius, “Detecting gravitational waves from highly eccentric compact binaries”, arXiv:1403.7754, submitted to *Phys. Rev. D*
49. E. A. Huerta, Prayush Kumar, Jonathan R. Gair, and **Sean T. McWilliams**, “Self-forced evolutions of an implicit rotating source: a natural framework to model comparable and intermediate mass-ratio systems from inspiral through ringdown”, arXiv:1403.0561, submitted to *Phys. Rev. D*
48. Pau Amaro Seoane *et al.* (The eLISA Consortium), “The Gravitational Universe”, arXiv:1305.5720 [astro-ph.CO]
47. **Sean T. McWilliams**, “Reply to ‘Comment on ‘Black Holes are neither Particle Accelerators nor Dark Matter Probes’ ’”, *Phys. Rev. Lett.* 111, 079002 (2013)
46. Lam Hui, **Sean T. McWilliams**, and I-Sheng Yang, “Binary Systems as Resonance Detectors for Gravitational Waves”, *Phys. Rev. D* 87, 084009 (2013)
45. William E. East, **Sean T. McWilliams**, Janna Levin, and Frans Pretorius, “Observing complete gravitational wave signals from dynamical capture binaries”, *Phys. Rev. D* 87, 043004 (2013)
44. **Sean T. McWilliams**, Jeremiah P. Ostriker, and Frans Pretorius, “Gravitational waves and stalled satellites from massive galaxy mergers at  $z \leq 1$ ”, arXiv:1211.5377 [astro-ph.CO], submitted to *Astrophys. J.*
43. **Sean T. McWilliams**, Jeremiah P. Ostriker, and Frans Pretorius, “The imminent detection of gravitational waves from massive black-hole binaries with pulsar timing arrays”, arXiv:1211.4590 [astro-ph.CO], refereed but ultimately rejected by *Science*
42. **Sean T. McWilliams**, “Black holes are neither particle accelerators nor dark matter probes”, *Phys. Rev. Lett.* 110, 011102 (2013)
41. Joshua Abadie *et al.* (LIGO Scientific Collaboration), “All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run”, *Phys. Rev. D* 85, 122007 (2012)
40. Joshua Abadie *et al.* (LIGO Scientific Collaboration), “Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600 – 1000 Hz”, *Phys. Rev. D* 85, 122001 (2012)
39. Rainer Weiss *et al.* (Mission Concept Study Science Task Force), “Gravitational-Wave Mission Concept Study Final Report”, [pcos.gsfc.nasa.gov/studies/gravitational-wave-mission.php](http://pcos.gsfc.nasa.gov/studies/gravitational-wave-mission.php) (2012)
38. Joshua Abadie *et al.* (LIGO Scientific Collaboration), “Search for gravitational waves from intermediate mass binary black holes”, *Phys. Rev. D* 85, 102004 (2012)
37. Joshua Abadie *et al.* (LIGO Scientific Collaboration), “First low-latency LIGO+Virgo search for binary inspirals and their electromagnetic counterparts”, *Astron. Astrophys.* 541, A155 (2012)
36. Pau Amaro-Seoane *et al.* (NGO Science Performance Task Force), “Low-frequency gravitational-wave science with eLISA/NGO”, *Class. Quant. Grav.* 29 124016 (2012)
35. Pau Amaro-Seoane *et al.* (NGO Science Performance Task Force), “eLISA: Astrophysics and cosmology in the millihertz regime”, arXiv:1201.3621 [gr-qc], submitted to *GW Notes*
34. **Sean T. McWilliams**, “Geostationary Antenna for Disturbance-Free Laser Interferometry (GAD-FLI)”, [pcos.gsfc.nasa.gov/studies/gravwave/gravitational-wave-mission-rfis.php](http://pcos.gsfc.nasa.gov/studies/gravwave/gravitational-wave-mission-rfis.php) (2011)

33. **Sean T. McWilliams** and Janna Levin, “Electromagnetic extraction of energy from black hole-neutron star binaries”, *Astrophys. J.* 742 90 (2011)
32. Bernard J. Kelly, John G. Baker, William D. Boggs, **Sean T. McWilliams** and Joan Centrella, “Mergers of black-hole binaries with aligned spins: Waveform characteristics”, *Phys. Rev. D* 84 084009 (2011)
31. **Sean T. McWilliams**, John G. Baker, James Ira Thorpe, and Ryan N. Lang, “Sky localization of complete inspiral-merger-ringdown signals for nonspinning black hole binaries with LISA”, *Phys. Rev. D* 84, 064003 (2011)
30. **Sean T. McWilliams**, “The Status of Black Hole Binary Simulations with Numerical Relativity”, invited review, *Class. Quant. Grav.* 28 134001 (2011)
29. Janna Levin, **Sean T. McWilliams**, and Hugo Contreras, “Inspirals of Generic Black Hole Binaries: Spin, Precession, and Eccentricity”, *Class. Quant. Grav.* 28 175001 (2011)
28. **Sean T. McWilliams**, Bernard J. Kelly, and John G. Baker, “Observing mergers of non-spinning black-hole binaries”, *Phys. Rev. D* 82, 024014 (2010)
27. **Sean T. McWilliams**, “Constraining the braneworld with gravitational wave observations”, *Phys. Rev. Lett.* 104, 141601 (2010)
26. Stanislav Babak *et al.* (Mock LISA Data Challenge Task Force), “The Mock LISA Data Challenges: From Challenge 3 to Challenge 4”, *Class. Quant. Grav.* 27 084009 (2010)
25. **Sean T. McWilliams**, James I. Thorpe, John G. Baker, and Bernard J. Kelly, “Impact of mergers on LISA parameter estimation for nonspinning black hole binaries”, *Phys. Rev. D* 81, 064014 (2010)
24. James R. van Meter, John H. Wise, M. Coleman Miller, Christopher S. Reynolds, Joan M. Centrella, John G. Baker, William D. Boggs, Bernard J. Kelly, and **Sean T. McWilliams**, “Modeling Flows Around Merging Black Hole Binaries”, *Astrophys. J. Lett.* 711, L89 (2010)
23. Benjamin Aylott *et al.* (NINJA Collaboration), “Status of NINJA: The Numerical INjection Analysis project”, *Class. Quant. Grav.* 26, 114008 (2009)
22. Benjamin Aylott *et al.* (NINJA Collaboration), “Testing gravitational-wave searches with numerical relativity waveforms: Results from the first Numerical INjection Analysis (NINJA) project”, *Class. Quant. Grav.* 26, 165008 (2009)
21. James I. Thorpe, **Sean T. McWilliams**, Bernard J. Kelly, Richard P. Fahey, Keith Arnaud, and John G. Baker, “LISA parameter estimation using numerical merger waveforms”, *Class. Quant. Grav.* 26, 165008 (2009)
20. John G. Baker, William D. Boggs, Joan Centrella, Bernard J. Kelly, **Sean T. McWilliams**, and James R. van Meter, “Mergers of non-spinning black-hole binaries: Gravitational radiation characteristics”, *Phys. Rev. D* 78, 044046 (2008)
19. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Search of S3 LIGO data for gravitational wave signals from spinning black hole and neutron star binary inspirals”, *Phys. Rev. D* 78, 042002 (2008)
18. John G. Baker, William D. Boggs, Joan Centrella, Bernard J. Kelly, **Sean T. McWilliams**, M. Coleman Miller, and James R. van Meter, “Modeling kicks from the merger of generic black-hole binaries”, *Astrophys. J.* 682, L29 (2008)
17. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Implications for the Origin of GRB 070201 from LIGO Observations”, *Astrophys. J.* 681, 1419 (2008)
16. Lucio Baggio *et al.* (AURIGA Collaboration and LIGO Scientific Collaboration), “A Joint search for gravitational wave bursts with AURIGA and LIGO”, *Class. Quant. Grav.* 25, 095004 (2008)
15. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Search for gravitational waves associated with 39 gamma-ray bursts using data from the second, third, and fourth LIGO runs”, *Phys. Rev. D* 77, 062004 (2008)
14. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Search for gravitational waves from binary inspirals in S3 and S4 LIGO data”, *Phys. Rev. D* 77, 062002 (2008)
13. Jeremy D. Schnittman, Alessandra Buonanno, James R. van Meter, John G. Baker, W. Darian Boggs, Joan Centrella, Bernard J. Kelly, and **Sean T. McWilliams**, “Anatomy of the binary black hole recoil: A multipolar analysis”, *Phys. Rev. D* 77, 044031 (2008)

12. Yi Pan, Alessandra Buonanno, John G. Baker, Joan Centrella, Bernard J. Kelly, **Sean T. McWilliams**, Frans Pretorius, James R. van Meter, “A Data-analysis driven comparison of analytic and numerical coalescing binary waveforms: Nonspinning case”, *Phys. Rev. D* 77, 024014 (2008)
11. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “All-sky search for periodic gravitational waves in LIGO S4 data”, *Phys. Rev. D* 77, 022001 (2008)
10. John G. Baker, James R. van Meter, **Sean T. McWilliams**, Joan Centrella, Bernard J. Kelly, “Consistency of post-Newtonian waveforms with numerical relativity”, *Phys. Rev. Lett.* 99, 181101 (2007)
9. Alessandra Buonanno, Yi Pan, John G. Baker, Joan Centrella, Bernard J. Kelly, **Sean T. McWilliams**, and James R. van Meter, “Approaching faithful templates for non-spinning binary black holes using the effective-one-body approach”, *Phys. Rev. D* 76, 104049 (2007)
8. Benjamin Abbott *et al.* (LIGO Scientific Collaboration) “Search for gravitational-wave bursts in LIGO data from the fourth science run”, *Class. Quant. Grav.* 24, 5343 (2007), Erratum-ibid. 25, 039801 (2008)
7. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Upper limit map of a background of gravitational waves”, *Phys. Rev. D* 76, 082003 (2007)
6. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1: Results from the second LIGO science run”, *Phys. Rev. D* 76, 082001 (2007)
5. John G. Baker, William D. Boggs, Joan Centrella, Bernard J. Kelly, **Sean T. McWilliams**, M. Coleman Miller, and James R. van Meter, “Modeling kicks from the merger of non-precessing black-hole binaries”, *Astrophys. J.* 668, 1140 (2007)
4. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Search for gravitational wave radiation associated with the pulsating tail of the SGR 1806-20 hyperflare of 27 December 2004 using LIGO”, *Phys. Rev. D* 76, 062003 (2007)
3. Benjamin Abbott *et al.* (LIGO Scientific Collaboration), “Upper limits on gravitational wave emission from 78 radio pulsars”, *Phys. Rev. D* 76, 042001 (2007)
2. Benjamin Abbott *et al.* (ALLEGRO Collaboration and LIGO Scientific Collaboration), “First Cross-Correlation Analysis of Interferometric and Resonant-Bar Gravitational-Wave Data for Stochastic Backgrounds”, *Phys. Rev. D* 76, 022001 (2007)
1. John G. Baker, **Sean T. McWilliams**, James R. van Meter, Joan Centrella, Dae-Il Choi, Bernard J. Kelly, and Michael Koppitz, “Binary black hole late inspiral: Simulations for gravitational wave observations”, *Phys. Rev. D* 75, 124024 (2007)