

Bruce Allen

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Education

Massachusetts Institute of Technology	Physics	BS 1976-80
Cambridge University, England	Gravitational Physics	Ph.D., 1980-83
University of California at Santa Barbara	Relativity	Postdoc, 1983-85
Tufts University	Relativity	Postdoc, 1985-86
Observatoire de Paris – Meudon	Relativity	Postdoc, 1986-87

Positions

1997-present Professor, University of Wisconsin – Milwaukee
1992-97 Associate Professor, University of Wisconsin - Milwaukee
1989-92 Assistant Professor, University of Wisconsin – Milwaukee
1987-89 Research Assistant Professor, Tufts University

Other academic experience (six months or more)

2000 Visiting Associate, Albert Einstein Institute, Berlin (6 months)
1999 Visiting Associate, Caltech LIGO Project (6 months)
1997-8 Visiting Associate, Caltech LIGO Project (1 year)
1995 Visiting Associate, Caltech Relativity Theory Group (6 months)
1994 Visiting Associate, Isaac Newton Math Institute, Cambridge (6 months)

Awards

1990	Gravity Research Foundation	First Prize
1981	Cambridge University	Knight Prize
1980-83	Cambridge University	Marshall Scholar
1980	Cambridge University	Churchill Scholar (declined)
1980	National Science Foundation	Graduate Fellowship (declined)
1980	M.I.T.	Phi Beta Kappa

Research Funding

2000-01	Development of a high-speed data analysis system for LIGO gravitational wave detection (NSF 0079638)	Allen, Brady, Wiseman	\$415,326 (1 year) + \$177,977 match
2000-03	Gravitational wave data analysis for LIGO (NSF 0071028)	Allen	\$630,000 (3 years)
2000-05	GriPhyN: towards a petascale virtual data grid	Allen	\$410,000 (5 years)
1999	LIGO Visitors Program	Allen	\$82,987
1998-99	Data analysis tools, techniques, and algorithms for gravitational wave detectors (NSF 9728704)	Allen	\$203,360 (2 years)
1995-00	Classical and quantum gravitation and cosmology (NSF 9728704)	Allen, Parker, Friedman	\$1,120,875 (5 years)
1993	NATO collaborative research grant	Allen, Ottewill	\$6,480
1991-95	Research in gravitation and cosmology (NSF 9105395)	Allen, Parker, Friedman	\$765,010 (4 years)
1989-90	Inflationary cosmology, cosmic-string models, and the Vilkovisky-DeWitt formalism (NSF 8903027)	Allen	\$90,559 (3 years)
1987-88	DeSitter space field theory (NSF 8705107)	Allen	\$92,000 (2 years)

Professional Service

2000-present Member, NSF/DOE LHC Software & Computing Review Committee
1998-present Chair, Astrophysical Source Identification and Signature sub-group, LIGO Scientific Collaboration
1997-present Member, NASA Laser Interferometer Space Antenna (LISA) Mission Definition Team
1997-present Executive Committee, LIGO Scientific Collaboration
1995-7 Executive Committee, LIGO Research Community

Teaching Experience

About 30 graduate and undergraduate courses, including General Physics, Special Relativity, General Relativity, Cosmological Perturbation Theory, Singularity Theorems of General Relativity, Classical Electrodynamics, Mathematical Methods, and other. Supervised five students to Ph.Ds.

Publications

About 70 peer-reviewed publications (list attached).

Most Significant LIGO-related Publications

- [1] B. Allen, J.K. Blackburn, P.R. Brady, J.D.E. Creighton, T. Creighton, S. Droz, A.D. Gillespie, S.A. Hughes, S. Kawamura, T.T. Lyons, J.E. Mason, B.J. Owen, F.J. Raab, M.W. Regehr, B.S. Sathyaprakash, R.L. Savage, Jr., S. Whitcomb, A.G. Wiseman, "Observational limit on gravitational waves from binary neutron stars in the Galaxy", *Phys. Rev. Lett.* **83** (1999) 1498. Available at xxx.lanl.gov/abs/gr-qc/9903108.
- [2] B. Allen and J. Romano, "Detecting a stochastic background of gravitational radiation: signal processing strategies and sensitivities", *Phys. Rev.* **D59** (1999) 102001. Available at xxx.lanl.gov/abs/gr-qc/9710117.
- [3] B. Allen, É.É. Flanagan, and M.A. Papa, "Is the squeezing of relic gravitational waves produced by inflation detectable?", *Phys. Rev.* **D61** (2000) 024024. Available at xxx.lanl.gov/abs/gr-qc/9906054.
- [4] B. Allen et al., "GRASP: a data analysis package for gravitational wave detection". Manual and package available at www.lsc-group.phys.uwm.edu/~ballen/grasp-distribution.
- [5] B. Allen, "Benchmark tests for inspiraling binary searches for the LIGO Data Analysis System", Available from www.ligo.caltech.edu/docs/T/T970166-01.pdf.

Other Accomplishments

- Developed the public-domain GRASP package of software tools and data analysis techniques for the analysis of data from interferometric gravitational-wave detectors. Package may be downloaded from www.lsc-group.phys.uwm.edu/~ballen/grasp-distribution.
- Constructed one of two largest DEC-alpha based beowulf parallel computer systems (in Spring 1998). www.lsc-group.phys.uwm.edu/
- Organized and led a team of 18 people from 6 institutions that carried out the first end-to-end analysis of data from the LIGO 40-meter prototype (see publication [1] above for details).

Postdoctoral Advisors

J. Hartle and G. Horowitz (U.C. Santa Barbara), A. Vilenkin and L. Ford (Tufts), B. Carter (Observatoire de Paris - Meudon), T. Damour (IHES, Paris).

Thesis Advisor & Postgraduate-Scholar Sponsor: 3 Ph.D., 5 Postdoc

W. Anderson (UWM), R. Balasubramanian (Cardiff), R. Caldwell (Princeton), P. Casper, J. Creighton (UWM), S. Koranda (NCSA, Urbana-Champaign), J. Romano (U. Texas - Brownsville), A.G. Wiseman (UWM).

Graduate Advisor

Stephen Hawking (Cambridge University, England)

Personal:

Married. DOB 5/11/59.