Theodore J. Allen

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Education

Ph.D.	California Institute of Technology *Theoretical Physics*	1988
M.S.	California Institute of Technology *Physics*	1984
B.S.	University of Wisconsin-Madison *Applied Mathematics, Engineering and Physics*	1982

Positions

Professor	Hobart & William Smith Colleges	2023-Present
Associate Professor	Hobart & William Smith Colleges	2005-2023
Assistant Professor	Hobart & William Smith Colleges	2000-2005
Assistant Professor	SUNY Institute of Technology	1999-2000
Assistant Professor	Hobart & William Smith Colleges	1998-1999
Lecturer in Physics	University of Wisconsin-Madison	1997
Faculty Assistant	University of Wisconsin-Madison	1994-1998
Assistant Scientist	University of Wisconsin-Madison	1993-1995
Lecturer in Physics	University of Wisconsin-Madison	1992-1993
Research Associate	University of Wisconsin-Madison	1991-1993
Research Associate	Syracuse University	1988-1991
Research Associate	California Institute of Technology	1988

Ph.D. Student Dennis B. Crossley, Ph.D. UW-Madison 1994
Thesis: *BRST Quantization and Self-dual Gravity*

Service

Referee: *Physical Review Letters & Physical Review, Journal of Physics, Modern Physics Letters & International Journal of Modern Physics*

Faculty Parliamentarian	HWS	2002-2019
Department Chair	HWS	2013 S-2019 S
Department Chair	HWS	2008 F-2009 S
Department Chair	HWS	2004 F-2006 S
Committee on the Library	HWS	2010-2013
Health Professions Advisory Committee	HWS	2001-2019
APS Career & Professional Development Liaison	HWS	2001-Present
Grievance Committee	HWS	2004 & 2015
Faculty Representative to Investment Board	HWS	2000-01
Academic Computing Systems Committee	SUNY-IT	1999-2000
Assessment Committee	SUNY-IT	1999-2000
Laser Safety Committee	SUNY-IT	1999-2000
Elementary Laboratories Committee	UW-Madison	1996-97
Physics Mentor	UW-Madison	1996-98
Junior Year Physics Majors Advisor	UW-Madison	1995-96
University Physical Society Advisor	UW-Madison	1994-97
Graduate Theoretical Physics Advisor	UW-Madison	1994-96
Awards Committee	UW-Madison	1994-95

Honors	National Science Foundation Graduate Fellow	Caltech	1982-85
	University Academic Excellence Award	UW-Madison	1982
	Elected Phi Beta Kappa		1981
	Elected Phi Kappa Phi		1981
	Elected Tau Beta Pi, National Engineering Honor Society		1981
	University Academic Excellence Award	UW-Madison	1981
	Radtke Prize Scholarship in Physics	UW-Madison	1981
	Frank D. Cady Scholarship in Mathematics	UW-Madison	1979 & 1980
	National Merit Scholar		1978-1982

Seminars Courses & Talks	Hamilton College *Colloquium*	September 2006
	Syracuse University	October 2003
	University of Wisconsin-Madison	September 2003
	Montreal-Rochester-Syracuse-Toronto Meeting	May 2001
	Syracuse University	December 1998
	Duke University	August 1995
	Illinois State University	March 1995
	Amherst College	February 1995
	Division of Particles and Fields, UNM-Albuquerque	August 1994
	Division of Particles and Fields, Fermilab	November 1992
	University of Wisconsin-Milwaukee *Colloquium*	March 1992
	University of Rochester	February 1991
	University of New Hampshire *Minicourse on Symplectic Geometry*	November 1990
	Montreal-Rochester-Syracuse-Toronto Meeting	May 1989
	University of Rochester	September 1988
	University of California-Davis	January 1988

Conferences Attended	*Pheno 2007*, Madison	May 2007
	Montreal-Rochester-Syracuse-Toronto Meeting, Montreal	May 2004
	Montreal-Rochester-Syracuse-Toronto Meeting, Syracuse	May 2003
	Montreal-Rochester-Syracuse-Toronto Meeting, Perimeter Institute	May 2002
	Montreal-Rochester-Syracuse-Toronto Meeting, U. Western Ontario	May 2001
	Confinement III, Jefferson Labs	June 1998
	S-Duality and Mirror Symmetry, ICTP Trieste	June 1995
	DPF Meeting, UNM-Albuquerque	August 1994
	Physics Doesn't Stop, Madison	April 1994
	SSC Symposium, Madison	April 1993
	DPF Meeting, Fermilab	November 1992
	SSC Symposium, Madison	April 1992
	Symposium on Blackholes, Membranes and Strings, Houston	January 1992
	Montreal-Rochester-Syracuse-Toronto Meeting, Rochester	May 1991
	Montreal-Rochester-Syracuse-Toronto Meeting, Montreal	May 1990
	Montreal-Rochester-Syracuse-Toronto Meeting, Syracuse	May 1989
	Mathematical Aspects of String Theory, San Diego	August 1986
	String Workshop, Santa Barbara	August 1985
	Geometry, Anomalies and Topology, Argonne	March 1985
	Second Jerusalem Winter School, Hebrew University	December 1984

Publications in Refereed Journals

1. "Inequivalence of the Brink-Schwarz and Siegel superparticles," *Mod. Phys. Lett.* **A2**, 209 (1987).

2. "Non-Gaussian density perturbations in inflationary cosmologies," with B. Grinstein and M.B. Wise, *Phys. Lett.* **B197**, 66 (1987).

3. "The Dirac propagator from pseudoclassical mechanics," *Phys. Lett.* **B214**, 87 (1988).

4. "The canonical structure of the manifestly supersymmetric string," *Int. J. Mod. Phys.* **A4**, 2811 (1989).

5. "Axionic black holes from massive axions," with M.J. Bowick and A. Lahiri†, *Phys. Lett.* **B237**, 47 (1990).

6. "BRST quantization and coadjoint orbit theories," *Phys. Rev. D* **43**, 3442 (1991).

7. "Topological mass generation in 3+1 dimensions," with M.J. Bowick and A. Lahiri†, *Mod. Phys. Lett.* **A6**, 559 (1991).

8. "Particle statistics in topologically nontrivial two dimensional magnetic systems," *Nucl. Phys.* **B360**, 409 (1991).

9. "Simpson's neutrino and the singular see-saw," with R. Johnson, S. Ranfone†, J. Schechter and J.W.F. Valle, *Mod. Phys. Lett.* **A6**, 1967 (1991).

10. "Duality and the vacuum," *Nucl. Phys.* **B395**, 185 (1993).

11. "Collective coordinate action for charged sigma-model vortices in finite geometries," *Mod. Phys. Lett.* **A8**, 1815 (1993).

12. "Harmonic BRST quantization of systems with irreducible holomorphic Boson and Fermion constraints," with D.B. Crossley†, *Phys. Rev. D* **47**, 5494 (1993).

13. "Phase space reduction and vortex statistics: An anyon quantization ambiguity," with A.J. Bordner† and D.B. Crossley†, *Phys. Rev. D* **49**, 6907 (1994).

14. "Charged vortex dynamics in Ginzburg-Landau theory of the fractional quantum Hall effect," with A.J. Bordner†, *Int. J. Mod. Phys.* **A10**, 645 (1995).

15. "Reality conditions, reducibility and ghosts," with D.B. Crossley†, *Phys. Rev. D* **52**, 1102 (1995).

16. "Quark confinement dynamics," with M.G. Olsson, S. Veseli†, and K. Williams†, *Phys. Rev. D* **55**, 5408 (1997).

† Student

17. "Excited glue and the vibrating flux tube," with M.G. Olsson and S. Veseli, *Phys. Lett.* **B434**, 110 (1998).

18. "Vibrational modes of a rotating string," with J.R. Schmidt, *Can. J. Phys.* **76**, 965 (1998).

19. "Flux tube vibrations and the excited glue spectroscopy," with M.G. Olsson and S. Veseli, *Nucl. Phys. Proc. Suppl.* **B75** , 299 (1999).

20. "Adiabatic string shape for non-uniform rotation," with M.G. Olsson and S. Veseli, *Phys. Rev. D* **59**, 094011 (1999).

21. "Curved QCD string dynamics," with M.G. Olsson and S. Veseli, *Phys. Rev. D* **60**, 074026 (1999).

22. "A note on the computation of mode sums," with M.G. Olsson and J.R. Schmidt, *Phys. Rev. D* **62**, 066006 (2000).

23. "From scalar to string confinement," with M.G. Olsson and S. Veseli, *Phys. Rev. D* **62**, 094021 (2000).

24. "Analytic quantization of the QCD string," with C. Goebel, M.G. Olsson and S. Veseli, *Phys. Rev. D* **64**, 094011 (2001).

25. "QCD string structure in vector confinement," with T. Coleman†, M.G. Olsson and S. Veseli, *Phys. Rev. D* **67**, 054016 (2003).

26. "Reduction of the QCD string to a time component vector potential," with M.G. Olsson, *Phys. Rev. D* **68**, 054022 (2003).

27. "QCD strings with spinning quarks," with M.G. Olsson and J. R. Schmidt, *Phys. Rev. D* **69**, 054013 (2004).

28. "Universal light quark mass dependence and heavy light meson spectroscopy," with T. Coleman, M.G. Olsson, and S. Veseli, *Phys. Rev. D* **69**, 074010 (2004).

29. "Direct experimental test of scalar confinement," with M. G. Olsson, Yu Yuan†, J. R. Schmidt, and S. Veseli, *Phys. Rev. D* **70**, 054012 (2004).

30. "Quantization of Pseudoclassical Systems in the Schrödinger Realization," with D. A. Spector and C. W. Wilson†, *J. Math. Phys.* **61**, 052106 (2020).

31. "Spin in Schrödinger-quantized Pseudoclassical Systems," *J. Math. Phys.* **62**, 102101 (2021); quant-ph/2105.12187.

† Student

Unpublished Articles

32. "BRST quantization and gravity in self-dual variables,"
with D.B. Crossley†, UW-Madison Preprint MAD/TH-94-11.

33. "A mechanism for charge quantization," with C. J. Efthimiou, and D. A. Spector,
hep-th/0209204.

Contributed Articles

34. "Lectures on superstring theory," given by J. H. Schwarz,
at the Second Jerusalem Winter School, notes by T. J. Allen,
in *Physics in Higher Dimensions*, Eds., T. Piran and S. Weinberg,
(World Scientific Publishers, Singapore, 1986).

35. "Axionic black holes," with A. Lahiri† and M.J. Bowick, in *Proceedings of the Eleventh Annual MRST Meeting,* Eds. C. Rosenzweig and K.C. Wali, 1989.

36. "Mass generation without symmetry breaking," with M.J. Bowick and A. Lahiri†,
in *Proceedings of Twelfth Annual MRST meeting,* Eds. B. Margolis and P. Valin, 1990.

37. "Charged vortex dynamics in a Ginzburg-Landau theory
of a 2+1 Dimensional Charged Scalar Field," with A.J. Bordner†,
in *The Fermilab Meeting DPF92*, C.H. Albright, P.H. Kasper,
R. Raja and J. Yoh, eds., (World Scientific, Singapore, 1993) p. 1537.

38. "Vortex statistics: an anyon quantization ambiguity,"
with A.J. Bordner† and D.B. Crossley†, *The Albuquerque Meeting,*
Proceedings of the 8th Meeting of the Division of Particles and Fields,
Sally Seidel, Ed. (World Scientific, Singapore, 1995) p. 1430.

39. "Relativistic strings and hybrid mesons," with M.G. Olsson and S. Veseli,
Proceedings of the Third International Conference on Quark Confinement,
(World Scientific, Singapore, 2000) p. 149.

40. "Scalar and QCD string confinement," with M.G. Olsson and S. Veseli,
Proceedings of the 7th Conference on Intersections Between Particle
and Nuclear Physics (CIPANP 2000), 22-28 May 2000, Quebec City, Quebec, Canada.
AIP Conf. Proc. **549**, 283 (2002).

41. "Analytic semi-classical quantization of a QCD string with light quarks,"
with C. Goebel, M.G. Olsson and S. Veseli,
Theoretical High Energy Physics, MRST 2001: A Tribute to Roger Migneron.
Eds. V. Elias, D.G.C. McKeon, and V.A. Miransky.
(American Institute of Physics, Melville, New York, 2001) p. 277.

† Student

42. "Confinement Dynamics," with M.G. Olsson,
Proceedings of the 8th Conference on Intersections Between Particle and Nuclear Physics (CIPANP 2003), 19-24 May 2003, New York, NY (USA).
AIP Conf. Proc. **698** 562-565, (2004).