

# Ananth P. Chikkatur

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## Education

**Massachusetts Institute of Technology** Cambridge, MA  
Candidate for Ph.D. Department of Physics. Sep. 2002. *GPA: 5.0/5.0*  
Thesis: Superfluid collisions and transportable Bose-Einstein condensates

**University of Rochester** Rochester, NY  
Bachelor of Science, Physics, Summa Cum Laude, May 1997. *GPA: 3.97/4.00*  
Senior Thesis: Construction and characterization of a Magneto-Optical Trap (MOT)

## Awards

National Science Foundation Graduate Fellowship (1997-2000), Deutsch Award for Excellence in Experimental Physics (1999), National Science Scholarship (1993-1997), Xerox Scholarship (1993-1997), Flagg Award for Outstanding scholarship in Physics (1997), Stoddard Prize for Best Senior thesis in Physics (1997), Fulbright Prize for excellence in Advanced Laboratory in Physics (1996), Honors Prize for excellence in Sophomore Physics (1994), Member of  $\Sigma\Pi\Sigma$  (Physics Honor Society, 1996), Member of  $\Phi B K$  (1996).

## Research Experience

**MIT, Department of Physics** Cambridge, MA  
Advisor: Wolfgang Ketterle  
July 1997 - Present  
Exploring the physics of Bose-Einstein condensation experimentally using techniques of ultra-cold atomic and optical physics. Planned and constructed a novel apparatus for Bose-Einstein condensation as part of a team. Work involved operating a dye and solid state (Nd:YVO<sub>4</sub>) laser. Designed and built optical systems for imaging, optical tweezers, and atom trapping. Built electronics using RF components for acousto-optic and electro-optic modulators, and for high currents (500 A). Currently pursuing experiments using micro-traps, waveguides, and continuous atom-lasers, with applications towards interferometry and sensors.

**University of Rochester, Department of Physics** Rochester, NY  
Advisor: Nicholas Bigelow  
Jun. 1996 – May 1997  
Constructed a magneto-optical trap for cesium atoms using diode lasers. Built electronics for controlling the current and temperature for the diode lasers.

**University of Rochester, Department of Physics** Rochester, NY  
Advisor: Arie Bodek  
Sep. 1995 – Dec. 1996  
Analyzed cosmic ray muon data and developed a new technique for measuring the energies of high energy muons.

**E815 (NuTeV), Fermilab** Batavia, IL  
Advisor: Arie Bodek  
May 1995 – Aug. 1996  
Helped build a muon detector currently being used in the fixed-target neutrino detector.

## Teaching Experience

**MIT, Department of Physics** Cambridge, MA  
Teaching Assistant, *Atomic and Optical Physics II* (graduate level) Spring 2001  
Graded problem sets, and assisted students with their homework.

**University of Rochester, Department of Physics** Rochester, NY  
Teaching assistant, *Elements of Quantum Physics* Spring 1996 & 1997  
Prepared and conducted recitation sections, and graded problem sets.

**University of Rochester, Department of Mechanical Eng.** Rochester, NY  
Teaching assistant, *Boundary Value Problems* Fall 1995  
Graded homework assignments and assisted students with their homework.

**University of Rochester, Department of Mathematics** Rochester, NY  
Teaching assistant, *Differential Equations* Spring 1995  
Prepared and conducted recitation section. Graded homework assignments and helped proctor and grade exams.

**University of Rochester, Department of Mathematics** Rochester, NY  
Teaching assistant, *Analysis* Fall 1994  
Prepared and conducted recitation section. Graded homework assignments and helped proctor and grade exams.

## Professional Affiliations

American Physical Society (APS), Optical Society of America (OSA)

## Activities

Chapter coordinator (Aug. 2000--Nov. 2001) and volunteer for *Asha for Education*-Boston chapter, an action group for basic education in India. Responsible for organization of chapter meetings, coordination of various events, such talks and fundraisers, and being a liason between Asha and other developmental organizations. Editor of two newsletters for Asha; see <http://www.ashanet.org/mit/events-fs.html>.

Asha project steward for Jaher Development Samiti, a Santhali (a tribal group) organization based in Jharkhand, India. Responsible for communicating with the NGO, evaluating and reviewing an education component of their work.

Visited and evaluated various schools and NGOs in Bangalore and Mysore districts (India) for Asha during December 2001. See <http://cua.mit.edu/personal/chikkatur/asha/sitevisits.html> for reports on my visit to the NGOs.

Participated in a meeting held in Princeton, "Activists Together," regarding developmental and current issues in India, with a goal of building a support group of U.S. based activists to support people's movements in India. See <http://lexus.princeton.edu/hazra/meeting> for more information.

## References

*The following two professors can provide information about my academic work at MIT.*

Professor Wolfgang Ketterle  
Department of Physics and the Center for Ultracold Atoms  
Room 26-243 MIT  
77 Massachusetts Avenue  
Cambridge, MA 02139  
(617) 253-6815  
[ketterle@mit.edu](mailto:ketterle@mit.edu)

Professor David Pritchard  
Department of Physics and the Center for Ultracold Atoms  
Room 26-241 MIT  
77 Massachusetts Avenue  
Cambridge, MA 02139  
(617) 253-6812  
[dpritch@mit.edu](mailto:dpritch@mit.edu)

*The following two professors can provide information about my academic work at the University of Rochester.*

Professor Nicholas P. Bigelow  
Department of Physics and Astronomy  
Bausch and Lomb Hall Room 312  
University of Rochester  
Rochester, NY 14627  
(585) 275-8549  
[nbig@le.rochester.edu](mailto:nbig@le.rochester.edu)

Professor Arie Bodek  
Department of Physics and Astronomy  
Bausch and Lomb Hall Room 206  
University of Rochester  
Rochester, NY 14627  
(585) 275-4344  
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*Ms. Annamalai can provide information about my volunteer work with Asha for Education.*

Ms. Melliyal Annamalai  
President, Asha for Education  
4 Canter Court  
Nashua, NH 03063  
(603) 886-3332 [Home]; (603) 897-3218 [Work]  
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*Dr. Ajaikumar can provide information about my analysis of some of the NGOs that I visited during my visits to India.*

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