

VITA

Nageswar Rao Chekuri
Professor of Physics
Chair, Dept of Mathematics & Natural Sciences
Woodbury University
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Academic Degrees:

Ed.D with concentration in Physics Education (Graduation: June 7, 1996)
University of Cincinnati; Cincinnati, Ohio.
Master of Science in Particle Physics and Field Theory (Graduation: July 1989)
Simon Fraser University; Canada.
Master of Science in Space Science & Technology (Course work and Thesis: July 1977- August 1979), Andhra University; India.
Master of Science in Electronics (Graduation: July 1974)
Vikram University; India.

Additional Course and Research Work:

Doctoral course work with concentration in Particle Physics and Field Theory (August 1990-August 1992), University of Cincinnati; Cincinnati, Ohio.
Ph.D with concentration in Particle Physics and Field Theory (ABD, July 1980-August 1986), University of Hyderabad, Hyderabad, India.
Science and Engineering Research Council (SERC) Summer School in *Theoretical High Energy Physics*, The Indian Institute of Science, Bangalore, India (Six weeks summer course 1986).
25 Years of Weak Interaction and the Current Status of Gauge Theories, The Indian Institute of Science, Bangalore, India (A month long summer course 1982).

Professional Experience:

Chair, Mathematics and Natural Sciences, Woodbury University; Burbank, California, 2004 – present.
Professor, Woodbury University; Burbank, California, August 2007 –Present.
Associate Professor, Woodbury University; Burbank, California, August 1996 –July 2007.
Adjunct Professor, University of Cincinnati, OMI College of Applied Sciences, Cincinnati, Ohio, August 1990 –July 1996.
Physics and Mathematics Instructor, Coquitlam College; Vancouver, Canada, August 1988-July 1990.
Department Head, Lecturer and jr. Lecturer in Physics, Govt Colleges; A P, India, 1980-1986.
Physics Post Graduate Teacher, Vishakha Valley School; Vishakhapatnam, India, 1976 -1979.

Professional Services:

Reviewer for the *Journal of Science Education and Technology*, 2006-present.

Reviewer for the *Journal of Research in Science Teaching*, 2003-present.
 Mentored visiting faculty Mrs. Venkata Ramani, SKR College for Women, Rajahmundry, India from December 27, 2005 through March 6, 2006 on “Event-Subevent” based instruction and “Skills Based Instruction.”
 Subject guide for the doctoral dissertation of “Mrs. Venkata Ramani,” Andhra University, India.
 Helped Project Discovery, June 12, 1995 to July 20, 1995.

Current Research Interests:

Resources model, E-frames, and P-prims.
 Epistemic Beliefs.
 Instructional designs.
 Application of science and mathematics to engage students on Civic & Social Issues.
 Transdisciplinary instructional approach to complex problems.

Grant Writing:

Proposal to conduct research on *The Effect of Epistemological Beliefs in Learning Basic Physics Concepts: an International Comparison*, Faculty Development, Woodbury University, 2008, for \$5000, funded.
 Worked on physics lab proposals with Dr. Zelda Gilbert (Title V), 2002-03, for \$100,000, funded.
 Carrier Physics: Interactive Physics Material for Non-Science Major; with Prof. Glenn C. Markle as Co PI. (NSF, EMD Track, 2001-2002. Not Awarded.)
 RealTime Physics for Architecture Students; with Glen C. Markle as Co PI. (NSF, A&I Track, 2001-2002. Not Awarded.)
 Proposal to *Improve Clarity of Instruction on Time Evolution of the Physical Variables*, Faculty Development, Woodbury University, 2001, for \$2500, funded.
 Proposal submitted to Toyota through university grant writing in 2000-01 for \$25,000, funded.
 Proposal submitted to university for grant \$10,000 during 1996-97, funded.

Memberships:

A member of Telugu Association of North America (TANA)
 National Association for Research and Science Teaching (NARST)
 American Association of Physics Teachers (AAPT)

Conferences and Workshops Attended:

2007-2008: the International Conference on Physics Education ICPE 2007: Building Careers with Physics, 11-16 November 2007, Marrakech, Morocco.
 2007-2008: SENCER conference Portland, Maine , August 3-6, 2007; Western Regional SENCER Conference, Chapman University, April 13 & 14, 2007.
 2006-2007: Science Education for New Civic Engagement and Responsibility (SENCER) Summer Institute 2006, San Francisco.
 2005-2006: Lilly Conference, Cal-Poly, Pomona; National Association for Research and Science Teaching (NARST) conference, San Francisco.
 2004-05: International Physics Education Conference, New Delhi, India.
 2003-04: Lilly conference, Cal-Poly, Pomona; Chair’s conference, Orlando, Florida; NARST Conference, Vancouver.

- 2002-03: Fullbright Scholar Workshop, Loyola Marymount University, Los Angeles.
 2000-01: PASCO Scientific Equipment Company Workshop, Valencia.
 1997-98: National Association for Research and Science Teaching (NARST) conference in San Diego; "Syllabus Conference" at Cal Poly Pomona.
 1996-97: American Association of Physics Teachers Conference (AAPT), Simi Valley; Apple computer: Workshop on Research Development and Publishing tools for scientific professionals.

Publications, Presentations, Collaborations, Preprints and Awards:

Books and Monographs:

- Book: *University Physics: An Approach to Improve Skills*, Fifth Edition, Edition, ISBN: 1-888808-12-8, N. Rao Chekuri and Joseph Otu, 2003, '04, '05, '06 and '07, Gilmar Publishing; Cincinnati, Ohio,
<http://www.gilmarpublishing.com/>
 Monograph: *A Problem Solving Model for Interpretation Skills*, N. Rao Chekuri, Dept. of Science Education, University of Cincinnati, Cincinnati, Ohio, 1995.

Publications, Presentations and Conference Proceedings:

- "*Student-Reasoning for the Temperature Dependence of the Buoyant force: Pre and Post Experiment*" presented at the International Conference on Physics Education ICPE 2007: Building Careers with Physics, 11-16 November 2007, Marrakech, Morocco, accepted for publication in the proceedings.
 "*Use of Analyzing Skills to Better Understand an Event in Acoustics*," Venkata Ramani Pilaka and N. Rao Chekuri, presented at the International Conference on Physics Education, Tokyo, Japan. August 13-18, 2006, accepted for publication in the proceedings.
 "*Improving Problem Analyzing Skills of Undergraduate Students in Mechanics*," N. Rao Chekuri, and Glenn C. Markle, accepted for publication in the Proceedings of the International Conference on Physics Education 2005, World Scientific.
 "*A Physics Instructional Design to Improve Cognitive Skills and Scientific Reasoning*," N. Rao Chekuri, and Glenn C. Markle, Presented at the National Association for Research in Science Teaching; Vancouver, Canada, April 1, 2004.
 "*A Physics Problem Solving Model for Developing Interpretation Skills*," N. Rao Chekuri, and Glenn C. Markle, Presented at the 68th Annual Meeting of the National Association for Research in Science Teaching, St. Louis, MO., April, 1996.
 "*A Problem-Solving Model for University Physics Students*," N. Rao Chekuri, Presented at the Research Conference at University of Cincinnati, Spring 1994.
 "*A Mathematical Model for Ajzen's Attitude Theory*," N. Rao Chekuri, and P. Swami; Presented at the National Association for Research in Science teaching, Atlanta, Georgia, 1993.
 "*Fractional Spin in the Gauged $O(3)$ Nonlinear Sigma Model*," Taejin Lee, N. Rao Chekuri, and K. S. Viswanathan; Published in Physics Review D 39, 2350-2365, 1989.

Collaborations:

- "*Fractionization of Fermion Number*," collaborated with Professor Gordon Semenoff, Department of Physics, University of British Columbia, Vancouver, Canada, 1988 – 1990.

“C. G. Coefficients Construction for $SU(6)$ Quark Model,” “F. W. Transformations of Dirac Equations using Yang-Mills Field,” and “Static and Multi-Soliton Solutions,” collaborated with Professor V. Srinivasan, School of Physics, University of Hyderabad, India, work towards ABD, 1980-1986.

“Application of Dirac Equation to Solitons,” collaborated with Prof. R. B. Ramachander, College of Engineering, Osmania University, India, 1976 – 1980.

“Angular Correlation Studies of Gamma Rays,” collaborated with Professor A. A. Kamal, Department of Physics, Osmania University, India, 1975 - 1976.

Preprints:

“Theory and Experimental Setup to Measure the Buoyant Force of a Liquid at Different Temperatures,” N. Rao Chekuri, and Joe Otu, Submitted to “Physics Teacher” in November, 2006.

“E-Frames on the Temperature Dependence of the Buoyant Force-Pre and Post Experiment,” N. Rao Chekuri, July 2006.

“Analysis of the Data for Designing Introductory Physics Courses,” N. Rao Chekuri, and Glenn C. Markle, December 2005.

“Theoretical and Empirical Bases for Designing Introductory Physics Courses,” N. Rao Chekuri, and Glenn C. Markle, September, 2004.

“Learning Styles of Unsuccessful Students in General Physics Courses,” N. Rao Chekuri, August 1998.

“Possibility of Soliton Type Laser,” N. Rao Chekuri, and Prof: V. Srinivasan, (part of ABD), July 1985.

Seminar Presentations:

“A Physics Problem Solving Model for Developing Interpretation Skills,” 1995, Division of Teacher Education, University of Cincinnati.

“Fractional Spin in the Gauged $O(3)$ Nonlinear Sigma Model,” 1989, Simon Fraser University, Vancouver, Canada.

“Covariant Quantization of Strings Based on $B. R. S$ Invariance,” 1988, Simon Fraser University, Vancouver, Canada.

“Dirac Magnetic Monopoles,” 1987, Simon Fraser University, Vancouver, Canada.

Awards:

1993 -1994: “Part-time Teacher of the Year,” award, University of Cincinnati, Cincinnati.