

CURRICULUM VITAE

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Department of Physics
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EDUCATION

Ph.D. Degree, State University of New York at Albany	1981
M.S. Degree, State University of New York at Albany	1977
Vor-Diplom, Universität Würzburg, Germany	1976

EMPLOYMENT

Professor of Physics at Westmont College	1985-Present
Visiting Scientists, Max-Planck-Institute for Nuclear Physics	1991/1992
Visiting Associate, California Institute of Technology	1986-1992
Editorial Advisor, Springer Publishing Company, New York	1989-1991
Research Associate, University of Illinois Champaign-Urbana	1983-1985
Research Associate, Max-Planck-Institute for Nuclear Physics	1981-1983
Research Assistant, Nuclear Research Center at Jülich	1979 & 1981
Research Assistant, Universität Tübingen	June 1980
Research Assistant, SUNY at Stony Brook	1979-1981

HONORS AND AWARDS

Faculty Research Award, Westmont College	1993
University Presidential Fellowship SUNY Albany	1977-1980
Quadrille Ball Committee Scholarship	1979
Exchange Student Scholarship SUNY Albany	1976
Fulbright Scholarship	1976

RESEARCH INTERESTS

Nuclear Structure Theory; Nuclear Interactions
Soliton Model of Nucleon Structure and Nuclear Collisions
Astronomy: Masses in Binary Star Systems; Accretion Disks; Photometry
Issues at the Interface of Science and Religion

PROFESSIONAL ORGANIZATIONS

The American Physical Society
Member of the AIP Division of Nuclear Physics
Member of the AIP Forum on Education
The Scientific Research Society SIGMA XI
The Honor Society PHI KAPPA PHI
The American Scientific Affiliation

SELECTED PUBLICATIONS

- [1] *Contributions from High-Momentum Intermediate States to Effective Nucleon-Nucleon Interactions*
H. M. Sommermann, H. Müther, K. C. Tam, T. T. S. Kuo, A. Fässler
Physical Review **C23**, No.4, 1765 (1981)
- [2] *Dynamical Effects in Finite Nuclei and their Importance in Giant Resonance Calculations*
H. M. Sommermann, T. T. S. Kuo, K. F. Ratcliff
Physics Letters **112B**, 108 (1982)
- [3] *Microscopic Calculation of Dynamical Effects: The Energy Dependence of Nucleon Self-Energies in ^{208}Pb*
H. M. Sommermann, K. F. Ratcliff, T. T. S. Kuo
Nuclear Physics **A406**, 109 (1983)
- [4] *Microscopic Description of Giant Resonances in Highly Excited Nuclei*
H. M. Sommermann
Annals of Physics, Vol. **151**, No.1, 163 (1983)
- [5] *Enhanced Backward Emission of Heavy Fragments in High-Energy Proton-Nucleus Collisions*
J. Hüfner, H. M. Sommermann
Physical Review **C27**, No.5, 2090 (1983)
- [6] *Skyrmion Interactions at Short Distances*
H. M. Sommermann, H. W. Wyld, C. J. Pethick
Physical Review Letters **55**, 476 (1985)
- [7] *Stability of the Rotating Skyrmion*
R. Rajaraman, H. M. Sommermann, J. Wambach, H. W. Wyld
Physical Review **D33**, 287 (1986)

- [8] *Dynamics of Skyrmion Collisions in 3+1 Dimensions*
A. E. Allder, S. E. Koonin, R. Seki, and H. M. Sommermann
Physical Review Letters **59**, 2836 (1987)
- [9] *Baryon-Antibaryon Annihilation in the Skyrme Model*
S. E. Koonin, S. Larson, R. Seki, and H. M. Sommermann
Physical Review **D45**, 4303 (1992)
- [10] *Semiclassical Approximation for the Average Level Density of a System of Identical Interacting Particles*
H. M. Sommermann and H. A. Weidenmüller
Euro-Physics Letters **23** (2), 79 (1993)

RESEARCH GRANTS

National Science Foundation Grant No. PHY86-11103
“*RUI: Dynamics of the Skyrmion-Skyrmion Interaction*”
Project Period: July 1, 1986 to December 31, 1987.

National Science Foundation Grant No. PHY87-06748
“*RUI: Dynamics of Skyrmion Interactions in Three Dimensions*”
Project Period: July 1, 1987 to December 31, 1988.

San Diego Supercomputer Center SDSC Allocation 818WES
“*Dynamics of Skyrmion Interactions in Three Dimensions*”
Project Period: October 1, 1988 to September 30, 1989.

National Science Foundation Grant No. PHY88-06427
“*RUI: Dynamics of Skyrmion Collisions and Skyrmion Matter in 3+1 Dimensions*”
Project Period: August 1, 1988 to January 31, 1991.

National Science Foundation Workshop Grant
“*Astronomy Workshop at the University of Colorado, Boulder*”
Project Period: Summer 1993.

John Templeton Foundation Science & Religion Course Award
“*Exploration of the Universe: Connections of Science and Religion in Astronomy*”
Project Period: 1996 Course Competition.

John Templeton Foundation Development Grant Award
“*Exploration of the Universe: Connections of Science and Religion in Astronomy*”
Project Period: 1999 - 2000 Academic Year.

RESEARCH WITH UNDERGRADUATE STUDENTS

CCD Imaging of the Lagoon Nebula

Aaron T. Nadler and H. Michael Sommermann

SUMMER 2004 – Symposium on Summer Research, September 2004

The Lightcurve of the Pulsating Star TW Hercules

Damien Durruty, Jaimie Gillette, and H. Michael Sommermann

SUMMER 2005 – Symposium on Summer Research, September 2005

Principles of Astrophotography

Damien Durruty, Fern Lim, and H. Michael Sommermann

AUGUST 2006 – Physics Department Report, Westmont College

CCD Imaging of the Whirlpool Galaxy

Damien Durruty, Fern Lim, and H. Michael Sommermann

AUGUST 2006 – Symposium on Summer Research, September 2006

Periodic Error Correction for Astronomical Imaging

Fern Lim, Damien Durruty, and H. Michael Sommermann

AUGUST 2006 – Symposium on Summer Research, September 2006

Photometry of RS Bootes using CCDSoft

Fern Lim, Michael Bennett, and H. Michael Sommermann

JULY 2007 – Symposium on Summer Research, September 2007

Photometry of RR Lyrae Variable Stars using IRAF

Michael Bennett, Fern Lim, and H. Michael Sommermann

JULY 2007 – Symposium on Summer Research, September 2007

Photometric Measurements of Asteroid 87-Sylvia

Damien Durruty and H. Michael Sommermann

APRIL 2008 – Research Symposium at Westmont College, April 2008

Orbit Determination for 87-Sylvia and Other Main Belt Asteroids

Michael Bennett, Scott Vaughan, and H. Michael Sommermann

AUGUST 2008 – Symposium on Summer Research, September 2008

Astrometric Measurements of Asteroid Orbitals

Chris Sullivan, Chris Morse, and H. Michael Sommermann

APRIL 2009 – Research Symposium, April 2009

Photometry of Open Star Clusters: The Method of Spectroscopic Parallax

Chris Morse, Chris Sullivan, and H. Michael Sommermann

SUMMER 2009

REPERTOIRE OF COURSES

Courses for Physics and Science Majors:

PHY-023 General Physics I

Calculus-based introduction to physics for physics, engineering, and chemistry students.

PHY-023 General Physics II

Calculus-based introduction to physics for physics, engineering, and chemistry students.

PHY-011 Physics for the Life-Sciences I

Algebra-based introduction to physics for biology, kinesiology, and pre-med students.

PHY-013 Physics for the Life-Sciences II

Algebra-based introduction to physics for biology, kinesiology, and pre-med students.

PHY-025 Modern Physics

Survey of modern physics for physics and engineering majors.

PHY-026 Modern Physics Laboratory

Classic experiments in modern physics for physics and engineering majors.

PHY-040 Differential Equations

Mathematical methods for physics and engineering students.

PHY-115 Mathematical Physics

Mathematical methods for physics and engineering students.

PHY-180 Senior Seminar

Capstone course for physics majors.

General Education Courses:

PHY-005 Physics for Poets

Conceptual discussion of the great ideas and theories of physics.

PHS-007 Discovering the Universe

Introduction to Astronomy for liberal arts students.

Inter-Disciplinary Courses:

PHY-117 Connections of Science and Religion in Astronomy

General Education Course - Supported by the Sir John Templeton Foundation.

COMMITTEES

Admissions Committee 1986–1989

Student Life Committee 1990-1993

Faculty Personnel Committee (Chair) 1987-1988

Faculty Personnel Committee (Chair) 2007-2008

Faculty Budget & Salary Committee (Chair) 2010–2012

President’s Council 2010–2012

Chair of the Physics Department 2002-2004

Academic Review Committee 2002-2004

Academic Senate 2002-2004, Spring 2013

Academic Resources Committee, Spring 2013

Program Review Committee, Fall 2013-