

# WITOLD NAZAREWICZ

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## ***Education:***

- Professor, Polish State title, 1994
- Dr. hab. in Physics, Warsaw University (WU), 1986; Professor, 1994
- Ph. D., Physics, Institute for Nuclear Research, Warsaw, 1981
- M. Sci. Engineer in Technical Physics and Applied Mathematics, Warsaw University of Technology (WUT), 1977

## ***Positions Held:***

### *Present*

- Professor (1995-present), University of Tennessee (UT)
- Adjunct Faculty, Physics Division, Oak Ridge National Laboratory (1996-present)
- Scientific Director, Holifield Radioactive Ion Beam Facility, ORNL (1999-present)
- Visiting Professor (2009-) University of the West of Scotland, Paisley, UK
- Professor, Warsaw University (1991-present)

### *Past*

- Teaching Assistant (1977-81), WUT
- Assistant Professor (1981-88), WUT
- Associate Professor (1988-91), WUT; (1990-91) WU

### *Visiting Positions*

- Research Fellow (1982-84), Lund University, Lund, Sweden
- Research Fellow (1984-85), Niels Bohr Institute, Copenhagen, Denmark
- Visiting Professor (1985, 1986), JIHIR
- Visiting Professor (1986, 1991), Florida State University, Tallahassee, Florida
- Visiting Professor (1987), University of Cologne, Cologne, Germany
- Visiting Professor (1988), AFI, KTH Stockholm, Sweden
- Senior Lecturer (1988, 1989), University of Liverpool, Liverpool, UK
- Visiting Professor (1990), Lund University, Lund, Sweden
- Research Professor (1991-95), Joint Institute for Heavy Ion Research (JIHIR), Oak Ridge, Tennessee
- Visiting Professor (1992), Kyoto University, Kyoto, Japan
- Adjunct Professor (1993), Vanderbilt University, Nashville, Tennessee
- Visiting Professor (1995), University of Liverpool, Liverpool, UK
- Carnegie Professor (2008), University of the West of Scotland, Paisley, UK
- Distinguished SUPA Visiting Professor (2009), University of the West of Scotland, Paisley, UK

## ***Offices, University Service:***

- Associate Dean, Faculty of Technical Physics & Applied Mathematics WUT (1987-90)
- HRIBF Scientific Director, ORNL (1999-present)
- Member of the JIHIR Directorate (1999-present)
- Member of the Long-Range Planning Committee of the Department of Physics UT (1996-present), Chair since 1999
- Various university service at WUT and WU (1977-1990)

- Grant Coordinator (1989-90) Polish Ministry for National Education
- A&S Convocation Research Awards Committee, UT, 2002
- Physics Colloquium Chair, Department of Physics, UT Physics (2003-2005)
- Member of Editorial Board, Newfound Press, UT Libraries (2006-2009)
- Faculty Promotion, Tenure & Awards Committee, UT Physics (2006-present)
- Member of the CIE Faculty Advisory Committee, UT (2007-present)

### ***Organizations, membership:***

- Polish Physical Society
- European Physical Society (EPS)
- Fellow, American Physical Society (APS)
- Fellow, Institute of Physics (IOP)
- American Association for the Advancement of Science (AAAS)

### ***Committees, service:***

#### *Present*

- 2002-present, Zdzislaw Szymański Prize, Chairman of the Board, Warsaw University, Poland
- 2004-present, RIA/FRIB Users Organization Executive Committee, member and Chair (2004-2005)
- 2005-present, EURISOL Design Study Group, Member of the International Advisory Panel
- 2006-present, Board member of the Mazurian Lakes Conferences on Physics, Warsaw, Poland
- 2006-present, Co-Editor, Editorial Board of the European Physical Journal A
- 2006-present, Scientific Expert, Scientific Advisory Board for the Finnish Centre of Excellence in Nuclear and Accelerator Based Physics at the University of Jyväskylä
- 2006-present, Member of the steering committee, Japan U.S. Theory Institute for Physics with Exotic Nuclei
- 2006-present, Associate Editor in Nuclear Physics, Reviews of Modern Physics
- 2007-present, Member of the Jefferson Lab Program Advisory Committee
- 2008-present, Co-Director, UNEDF
- 2008-present, Chair, Committee to generate a brochure for public distribution that describes recent scientific discoveries in nuclear physics, DOE, Office of Science.
- 2008-present, Member, Advisory Committee of International Summer School on Subatomic Physics, Beijing, China
- 2009-present, Member, DNP/APS Executive Committee
- 2009-present, Member, Search Committee for the Director for the Jefferson Laboratory Theory Center
- 2009-present, Member, FRIB Science Advisory Committee (SAC)

#### *Past*

- 1990-94, PAC Member, EUROGAM, Strasbourg, France
- 1992-95, Member of the Nuclear Physics Board of EPS
- 1993, Member of the NSF Special Emphasis Panel on the Evaluation of the NSF Low-Energy Nuclear Physics Accelerator Laboratories
- 1994-96, Member of the VIVITRON PAC, Strasbourg, France
- 1994-96, Member of Editorial Board of the Physical Review C
- 1994-95, Convener, Town Meeting on *Nuclear Structure, Low-Energy Reactions and Radioactive Ion Beams* organized by the DOE/NSF Nuclear Science Advisory Committee
- 1994-1998, PAC Member, HRIBF, ORNL, Oak Ridge, Tennessee

- 1995, Member of the Long Range Plan Working Group organized by the DOE/NSF Nuclear Science Advisory Committee
- 1995-1998, PAC Member, NSCL, MSU, East Lansing, Michigan
- 1995-1998, Member of the National Advisory Committee, INT Seattle, Washington
- 1996-1999, PAC Member, ATLAS, ANL, Argonne, Illinois
- 1996-2000, PAC Member, the 88" Cyclotron, LBL, Berkeley, California
- 1996-2000, Member of the Committee on Nuclear Physics, Board of Physics and Astronomy, US National Research Council
- 1996-2004, Member of the University of Chicago Review Committee for the Physics Division at the Argonne National Laboratory
- 1997, NSF Nuclear Theory Proposal Review Panel
- 1998-2003, Member of the Steering Committee for the National Nuclear Physics Summer School, DNP, APS
- 1999, Member of the DOE panel to review the INT
- 1999-2000, DNP Nominating Committee, Vice-Chair (1999) and Chair (2000)
- 2000-2004, Member of the DOE/NSF Nuclear Science Advisory Committee
- 2000-2004, RIA Steering Group, Co-Chair and Chair
- 2001-2002, Member of the DNP Dissertation Award Committee
- 2001-2002, PAC Member, NSCL, MSU, East Lansing, Michigan
- 2001-2002, Member of the Long Range Plan Working Group organized by the DOE/NSF Nuclear Science Advisory Committee
- 2001-2005, Member of the Advisory Committee for TRIUMF, NRC Canada
- 2001-2006, Member, Editorial Board of Reports on Progress in Physics, IOP, United Kingdom
- 2002-2004, RIA Theory Working Group Steering Committee, Member
- 2002-2006, RIA Summer School Directorate, Member
- 2003, Member, NSAC Subcommittee (Mueller) on Nuclear Theory
- 2003, Member, NSAC Subcommittee (Geesaman) on Performance Measures
- 2005, Member, NSAC Subcommittee (Tribble) on LRP Implementation
- 2005-2007, Member, Rare Isotope Science Assessment Committee of the National Research Council, NAS
- 2007-2008, Member, NSAC Long Range Plan Working Group
- 2007-2008, Member, DNP/APS Program Committee
- 2007-2008, Member, UNEDF Advisory Committee
- 2008-2009, Member, Search Committee for the FAIR Scientific Director, GSI, Darmstadt, Germany
- 2008-2009, Member, DNP/APS Fellowship Committee

***Reviewer:***

- Program reviewer, U.S. Department of Energy
- Program reviewer, U.S. National Science Foundation
- Program reviewer, U.S. National Research Council
- Program reviewer, NSERC and STFC, UK
- Program reviewer, NSERC, Canada
- Grant reviewer, Max Planck Foundation, Germany
- Grant reviewer, The Israel Science Foundation
- Grant reviewer, J.S. Guggenheim Memorial Foundation
- Grant reviewer, Research Corporation, Tucson
- Grant Reviewer, U.S. Civilian Research and Development Foundation

- Referee, Physical Review, Physical Review Letters, Physics Letters, Nuclear Physics, Physics Today, Reviews of Modern Physics, Reports on Progress in Physics, Zeitschrift für Physik, Physica Scripta, Acta Physica Polonica, Journal of Physics, Europhysics Letters, European Physical Journal, Nature, Revista Mexicana de Fisica, Canadian J. Physics

### ***Awards, Honors:***

- 1982, 1987, 1989, Individual Scientific Award of the Polish Ministry of Education
- 1983, Individual Scientific Award of the Polish Nuclear Energy Commission
- 1986, Individual Scientific Award of the Polish Physical Society
- 1994, Fellow, American Physical Society
- 1999, Lockheed-Martin Technical Achievement Award
- 2000, UT-Battelle Technical Achievement Award
- 2001, College of Arts and Sciences Senior Research/Creative Achievement Award, UT
- 2002, Senior Faculty Research/Creative Achievement Award, UT
- 2002, Listed by ISI among the most highly cited in physics, see <http://isihighlycited.com/>
- 2004, Fellow, Institute of Physics, UK
- 2006, Carnegie Centenary Professor 2008, Scotland, UK
- 2009, Honorary degree of Doctor (DUniv) of the University of the West of Scotland, UK

### ***Courses given:***

- Quantum optics, WUT (1981/82)
- Nuclear and Elementary Particle Physics, WUT (1986, 1988, 1989)
- Introduction to the Deformed Shell Model, WU (1985)
- Deformed Shell Model, Florida State University (1986, 1991)
- Deformed Shell Model, University of Cologne (1987)
- Symmetries and Conservation Laws in Physics, WUT (1986/87, 1988/89)
- Physics I and II, WUT (1987-1989)
- Collective Models For Deformed Nuclei, Postgraduate School on Nuclear Physics, University of York (1989)
- Nuclear Structure at High Spin, 10th NUPP Summer School, Charles Sturt University, Riverina, Wagga-Wagga, NSW, Australia (1991)
- Nuclear Structure, Hands on Nuclear Structure Theory Workshop, JHIR, Oak Ridge (1991)
- Nuclear Structure, Hands on Nuclear Structure Theory Workshop, NBI, Risø (1992)
- Nuclear Structure, University of Tennessee (1992-93, 1994-95)
- Nuclear Structure, Vanderbilt University (1993)
- Nuclear Deformations, Postgraduate School on Nuclear Physics, University of St. Andrews (1993)
- Deformed Shell Model - Basic Ideas, Third Nordic Summer School in Nuclear Physics, Falsterbo, Sweden (1994)
- Physics of Exotic Nuclei. Ninth Annual NSF-DOE Summer School, Yale University, New Haven, Connecticut, USA (1997)
- Theoretical Nuclear Structure, Ninth National Postgraduate Nuclear Physics Summer, Nottingham, UK (1997)
- Theoretical Electrodynamics, University of Tennessee (1997-98)
- Nuclear Structure at the Limits, Frontiers in Nuclear Physics, 11th Summer School, Australian National University, Canberra, Australia (1998)
- Nuclear Structure, WU (1998)
- Nuclear Structure, University of Tennessee (1997-98)

- Challenges of Nuclear Structure, IXth Jorge Andre Swieca Summer School, Sao Paulo (1999)
- Nuclear Structure, 9th Jyväskylä International Summer School, Jyväskylä, Finland (1999)
- Theoretical Electricity and Magnetism, University of Tennessee (1999-2000)
- Nuclear Collective Motion, VII Hispalensis International Summer School, Alcala de Guadaira, Spain (2000)
- Nuclear Structure at the Borderline, Eurosummer School on Exotic Beams, Leuven, Belgium (2000)
- Theoretical Electricity and Magnetism, University of Tennessee (2001-2002)
- Nuclear Physics, University of Tennessee (2002-2003)
- Structure of Heavy Nuclei", Lectures series at ECT\* Doctoral Training Programme, ECT\*, Trento, Italy (2003)
- Theoretical Electricity and Magnetism, University of Tennessee (2004)
- Hands-on Theory Program at the 3<sup>rd</sup> RIA Summer School, Argonne, IL (2004)
- Towards the Universal Nuclear Energy Density Functional, Lecture series (4) at the 3<sup>rd</sup> CNS International Summer School (CISS04), RIKEN, Wakoshi, Japan, 2004
- Nuclear Physics, University of Tennessee (2004)
- Hands-on Theory Program at the 5<sup>th</sup> RIA Summer School, Oak Ridge, TN (2006)
- Nuclear Physics, University of Tennessee (2006-2007)
- Nuclear Physics, University of the West of Scotland (2008)
- Nuclear Physics, University of Tennessee (2008-2009)
- Nuclei as open quantum many body systems, (6 lectures), 20th Chris Engelbrecht Summer School in Theoretical Physics, Stellenbosch Institute for Advanced Study, Stellenbosch, Western Cape, South Africa, 19–28 January 2009
- Nuclear Structure Theory, National Nuclear Physics Summer School, MSU, 28 June, 2009
- Pairing Theory, University of the West of Scotland (July 2009)

### ***Graduate Students:***

- Wojciech Satuła (WUT, M.Sci., Ph.D. 1990)
- Piotr Magierski (WUT, M.Sci., Ph.D. 1995)
- Max Misu (UT, Ph.D. 1997)
- Jolanta Karny (WU, M.Sci. 1999; jointly with J. Dobaczewski)
- Mladen Matev (UT, Ph.D., 2003)
- Piotr Borycki (UT, Ph.D., 2006)
- Georgios Papadimitriou (UT, current)
- Nicolai Nikolov (UT, current)
- Jordan McDonnell (UT, current)

### ***Books Edited:***

- *Zbiór Zadan z Fizyki*, M. Marczewski and W. Nazarewicz, Wydawnictwa Politechniki Warszawskiej, 1980 (in Polish)
- *Nuclear Structure Models*, R. Bengtsson, J. Draayer, and W. Nazarewicz, World Scientific, Singapore, 1993, ISBN 981-02-1131-7
- *The Nuclear Many-Body Problem 2001*, W. Nazarewicz and D. Vretenar, Kluwer Academic Publishers, NATO Science Series II, Vol. 53. ISBN 1-4020-0462-1
- *The 4<sup>th</sup> International Conference on Exotic Nuclei and Atomic Masses*, C.J. Gross, W. Nazarewicz, and K.P. Rykaczewski, SIF and Springer-Verlag, Berlin Heidelberg 2005, ISBN-10 3-540-28441-9, ISBN-13 978-5-540-28441-3

### ***Meetings (co)organized:***

- Selected Topics in Nuclear Structure Workshop, Warsaw, October 1990 (with S. Cwiok and J. Dobaczewski)
- Hands on Nuclear Structure Theory Workshop, JIHIR, Oak Ridge, August 5-16, 1991 (with R. Bengtsson and R. Wyss)
- Workshop on Nuclear Structure Models, JIHIR, Oak Ridge, March 16-25, 1992 (with R. Bengtsson and J. Draayer)
- Hands on Nuclear Structure Theory Workshop, NBI, Risø, June 15-27, 1992 (with B. Herskind, G. Hagemann and R. Wyss)
- Identical Bands Workshop, ORNL, Oak Ridge, August 12, 1993 (with M. Guidry, M. Strayer and T. Werner)
- High Spins and Novel Deformations, Institute for Nuclear Theory, Trento, Italy, Nov. 28-Dec. 18, 1993 (with I. Hamamoto and S. Åberg)
- Nuclear Chemistry Gordon Conference, June 18-23, 1995, Chair High Angular Momentum Phenomena Workshop, Piaski, Poland, Aug. 23-26, 1995 (vice-Chair)
- Nuclear Structure Under Extreme Conditions, INT-95-3, Program at the INT (Seattle), October 2-December 15, 1995 (together with G. Bertsch and J. Draayer)
- Mini-Symposium on "Proton-Neutron Correlations in  $N \sim Z$  Nuclei," 1997 APS/AAPT + CAM97 Spring Meeting, April 19, 1997, Organizer
- Application of the continuum shell model to atomic nuclei, (Collaboration Meeting), ECT\* Trento, Italy, May 24-26 (with M. Ploszajczak and J. Dobaczewski)
- RIA2000 meeting, Durham NC, July 24-26 (co-Chair, with R.F. Casten)
- RIA Workshop, DNP Meeting, Williamsburg, VA, October 4, 2000 (co-Chair, with J. Schiffer)
- ISOL'01 International Conference on Physics of Radioactive Nuclei, March 11-14, 2001, Oak Ridge, Tennessee (Chair)
- Nuclear Many Body Problem 2001 Workshop, Brijuni, Pula, Croatia, June 2-5, 2001 (co-Chair, together with D. Vretenar)
- Workshop on Very Heavy Nuclear Systems, ECT\*, Trento, Italy, July 9-14, 2001 (co-Chair, together with P. Butler)
- Workshop on the Continuum Shell Model, ECT\*, Trento, Italy, April, 2002 (co-Chair, together with M. Ploszajczak and H. Sagawa).
- First RIA Summer School, August 12-17, 2002 (Director), ORNL
- Oak Ridge Mini Workshop on Heavy Nuclei, JIHIR, August 25-29, 2003, Organizer
- Second RIA Summer School, August 4-9, 2003 (Co-director), MSU
- International Workshop on Theoretical Description of the Nuclear Large Amplitude Collective Motion, JIHIR, Oak Ridge, March 17 - 19, 2004, Organizer
- Third RIA Summer School, August 4-9, 2004 (Co-director), ANL
- ENAM'04, The Fourth International Conference on Exotic Nuclei and Atomic Masses, September 12-16, 2004, Callaway Gardens, Pine Mountain, Georgia (Chair)
- Oak Ridge Mini Workshop on Heavy Nuclei, JIHIR, September 21-23, 2004. Organizer
- The Second International Workshop on the Theoretical Description of the Nuclear Large Amplitude Collective Motion, JIHIR, March 30 - 31, 2005, Organizer
- RIA Day at DC, May 2005, Organizer
- YITP Workshop on "New Developments in Nuclear Self-Consistent Mean-Field Theories", Yukawa Institute for Theoretical Physics, Kyoto, Japan, May 30 - June 1, 2005, co-organizer
- Fourth RIA Summer School, July 31 - August 6, 2005 (Co-director), LBNL
- Town Meeting of the RIA Users Organization in Detroit, September 10-11, 2005, Organizer
- NuPAC Meeting, Oct 10-12, 2005, CERN, (Convener; Session Organizer)

- Nuclear Structure Near the Limits of Stability, Program INT-05-3 Sep. 26 to Dec. 2, 2005, Seattle (with Bertsch, Engel, and Ormand)
- Workshop on the Physics of Nucleons and Nuclei, SURA, Washington DC, Oct. 16-17, 2006, co-Chair
- 2007 Joint JUSTIPEN-LACM Meeting, JIHIR, March 5-8, 2007 (with Papenbrock and Bertulani)
- Workshop on “Many-body open quantum systems: From atomic nuclei to quantum dots,” ECT\*, Trento, Italy, May 14-18, 2007 (co-Chair, together with M. Ploszajczak, I. Rotter, and K. Kato).
- DFT-UNEDF Workshop, ORNL, Jan. 22, 2008 (with Schunck)
- The 2nd LACM-EFES-JUSTIPEN Workshop, JIHIR, Jan. 23-25, 2008 (with Papenbrock, Dean, and Schunck)
- One-day Workshop on the Structure of the Heaviest Elements, 12th March 2008, University of the West of Scotland, Paisley (with Herzberg and Smith)
- One-day Workshop on Dripline nuclei as open quantum systems, 9th April 2008, University of the West of Scotland, Paisley, UK (with Freer, Chapman, and Smith)
- Carnegie 2008 Conference on Nuclear Structure at the Extremes, May 8-10, 2008, University of the West of Scotland, Paisley, UK (with Chapman, and Smith)
- Lead Radius Experiment (PREX) Workshop and Neutron Rich Matter in the Heavens and on Earth, Thomas Jefferson National Accelerator Facility, August 17-19, Newport News, VA (with Horowitz, de Jager, Lattimer, Piekarewicz)
- JUSTIPEN-EFES-Hokkaido-UNEDF workshop, Onuma, Hokkaido, Japan, July 21-25, 2008 (with Otsuka)
- 5th ANL/MSU/JINA/INT FRIB Workshop on Bulk Nuclear Properties, MSU, NSCL, East Lansing, MI, Nov. 19-22, 2008 (with Danielewicz, Brown,...)
- The 3rd LACM-EFES-JUSTIPEN Workshop, JIHIR, Feb. 23-25, 2009 (with Papenbrock, Dean, and Schunck)
- Workshop on "Importance of continuum coupling for nuclei close to the drip-lines", SPhN Saclay, May 18-20, 2009 (with Michel, Duguet, and Ploszajczak)
- One-day workshop on “Structure and astrophysics from nuclear reactions with exotic nuclei”, University of the West of Scotland, Paisley, July 14, 2009 (with Orlandi, Chapman, Catford, Freer, Hadinia)
- One-Day Workshop on “Nuclear Structure and Reactions”, JIHIR, Oak Ridge, Nov. 16, 2009, organizer
- Workshop on “HRIBF, Upgrade for the FRIB Era”, November 13 - 14, 2009, Oak Ridge, TN, co-organizer

### ***Publications:***

Author or editor of 4 books

Author of 8 review papers

Author of ~295 scientific papers in refereed journals

Author of ~160 contributions to major conferences published in proceedings

Author of 10 educational papers and communications

### ***Talks:***

~190 invited talks at major international conferences

~240 invited seminars and colloquia