
Curriculum Vitae

THOMAS W. O'DONNELL, Ph.D.

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1 Vital Statistics

- Birthplace: Buffalo, New York
- Citizenship: United States
- High School: Amherst, N.Y.; Regents Diploma, SUNY Regents Scholarship

2 Education

2.1 Physics

- Ph.D., Nuclear Physics, University of Michigan [2000]
Thesis: "A Superconducting-Solenoid Isotope Spectrometer for
Production of Neutron-Rich Isotopes (^{136}Xe on C at $30\text{MeV}/u$)."
URL: <http://www.umich.edu/~twod/thesis>
Committee Chair: Professor Frederick Becchetti
- M.S., Physics, University of Michigan [1991]
- B.S., Physics, Honors, University of Michigan [1988]
Thesis Advisor: Professor Marc Ross

2.2 Engineering

- Henry Ford C. College, Dearborn, MI [1981-1982]
Steam Power; Industrial Refrigeration (1^{st} -class license, unlimited.)

2.3 Social Science

- Canisius College, Buffalo, NY [1969-1970]. Political Science.
- State University of NY at Buffalo [1970-1974]. Political Science, China Studies.

3 Appointments

- Lecturer [2005-2006, 2006-2007] - & - Visiting Assist. Professor of Physics [2001-2004]
The University of Michigan, Ann Arbor. College of Literature, Science and Arts (LS&A)
 - The Residential College (RC)
 - Center for Middle East and North African Studies (CMENAS)
 - Science, Technology & Society Program (STS)
 - Associate Member, Michigan Center for Theoretical Physics (MCTP)
- Visiting Professor, The New School for Social Research, New York City
 - Graduate Economics Department. [Summer 2005]
 - Graduate Program in International Affairs. [Summer 2005]
- Visitor Lecture Series, Université d'Alger, Algèria
 - Faculté de Sciences Economiques et de Gestion. [May 2005, August 2006]
- Research Fellow, The University of Michigan, Ann Arbor.
Center for Study of Complex Systems (CSCS)
“Sustainable Mobility.” Extraordinary grant of Ford Motor Co. Research Labs. [2002]
- Post-Doctoral Fellow, Rackham Summer Interdisciplinary Institute (RSII).
Project: “Emergence in the Natural and Social Sciences, and Humanities”
Rackham Graduate School, The University of Michigan. [2002-2003]
- Post-Doctoral Research, Nuclear Physics.
With Prof. Fred Becchetti, Department of Physics, The University of Michigan. 50% [2000-2001]
- Post-Doctoral Research, X-ray synchrotron and semiconductor materials.
With Prof. Roy Clarke, P.I., Applied Physics Program, The University of Michigan.
(Collaboration with Howard University and AT&T Labs, Murry Hill, NJ) 50% [2000-2001]
- Consulting Physicist, Texas A&M University (TAMU) Cyclotron Institute.
Simulations of new superconducting-solenoid spectrometer facility.
(Spin-off of thesis research, originally at National Superconducting Cyclotron Laboratory.) [2000-2001]
- Instructor, Advanced Physics Laboratory Course, Department of Physics.
The University of Michigan. With Prof. Roy Clarke [2001], Prof. Tim Chupp. [2000]

3.1 Pre-doctoral Appointments

- Research Assistant, Experimental Nuclear Physics group (50%) [1992-1999],
 - (i) Prof. B. Becchetti, Principal Investigator, Department of Physics, U. of Michigan.
 - The National Superconducting Cyclotron Laboratory (NSCL), E. Lansing, MI. Build ‘BigSol Isotope Spectrometer.’ Conduct Ph.D. thesis experiments and radioactive nuclear beam (RNB) experiments.
 - University of Notre Dame Nuclear Structure Laboratory & Radioactive Beam Facility, South Bend, IN. Experiments of astrophysical interest, build ‘TwinSol’ dual-solenoid spectrometer.
 - (ii) Prof. Joachim Jänecke, Principal Investigator, Department of Physics, U. of Michigan.
 - Indiana University Cyclotron Facility, Bloomington, IN. Conduct charge-exchange experiments, such as (^3He , t).
 - Research Center for Nuclear Physics (RCNP), Osaka University, Japan. Ibid.
- Research Assistant, Applied Physics, X-ray and semiconductor materials (50%) [1994-1999],
Prof. Roy Clarke, Principal Investigator, Applied Physics Program, U. of Michigan. Part of:
 - MHATT-CAT Collaboration (UM, Lucent, Howard U.), Advanced Photon Source (APS),

Argonne National Laboratory (ANL).

- Research Assistant, High-Energy Spin Physics Experimental group (50%), [1991-1992]
Prof. A. Krisch, Principal Investigator, Department of Physics, The University of Michigan
–Michigan-Protvino US-Russian Collaboration. Develop helium liquification and
facility for spin-polarized He-gas JET and solid NH₃ accelerator targets.

4 Presentations & Lectures. Conference or Panel Chair

4.1 2005-2006

- Scheduled: *Program Co-Chair, and Transportation Plenary Chair*
26th North American Conference, U.S. Association for Energy Economics (USAEE)
“Energy in a World of Changing Costs and Technologies”
Ann Arbor, MI. 24-27 September 2006.
- Scheduled: “MENA States in the New Globalized Oil System: Re-privatizing nationalized oil
fields, and the new OPEC+OECD International Energy Forum Secretariat (IEFS) in Riyadh”
Panel at Middle East Studies Association (MESA)
2006 National Conference; Boston, MA. 18-21 November 2006.
- Scheduled: “From Monopoly-Capitalist to Global-Capitalist Power in the Oil Order: The IEFS;
Iran, Iraq and Other Features”
Panel: Rethinking Marxism Conference
UMass, Amherst; Amherst, MA, 26-28 October 2006.
- “The Political Economy of Oil: The U.S. and the Middle East”
Summer Workshop: Middle East - U.S. Intersections
Middle East Studies
University of California at Los Angeles (UCLA), Los Angeles, Ca. 1 August 2006.
- “The U.S.-Iran Crisis: Oil Hegemony, Not Nukes at Issue”
PIER Summer Institute: Geopolitics of Oil in the Middle East
Middle East Studies
Yale University; New Haven, Ct. 12 July 2006.
- “The Iran Crisis: Fact vs. Fiction”
Public Forum: with E. Abrahamian, V. Baron & B. Nakhai.
Sponsored by: Campaign Against Military Sanctions and Intervention in Iran (CASMI)
Judson Church, Washington Square; New York City. 21 June 2006.
- “Oil, Nukes, Mullahs, Democracy: Political Economy of Iran Crisis”
The Brecht Forum with F. Farbod, R. Ghorashi & F. Moghadam.
451 West Street, Greenwich Villiage; New York City. 16 May 2006.
- “Global Oil and U.S. Policy since WW II”
Speaker, Political-Economy Seminar (Econ801, Prof. A. Shaikh).
The New School for Social Reserach; New York City. 29 March 2006.

- “European Union Energy & Transport: The Revolution Postponed?”
Colloquium Institute for the Study of Europe, and
Center for Energy and Maritime Transportation.
Columbia University; New York City. 28 March 2006.
- “The new globalized oil system: Iran, Iraq & reproducing U.S. hegemony”
Public Lecture sponsored by: Center for Middle East and North African Studies,
International Institute; University of Michigan, Ann Arbor. 15 March 2006.
- “Political Economy of the U.S.-Iran Crisis”
2006 Left Forum with F. Moghadam & E. Abrahamian.
Cooper Union University; New York City. 11 March 2006.
- “The New Globalized Oil Order: Iraq, Iran, and US Strategy for the Middle East”
Public Lecture Sponsored by:
Department of Anthropology,
Department of Near Eastern and Asian Studies,
Committee for Peace and Justice in the Middle East,
Center for Peace and Conflict Studies, and
American-Arab Anti Discrimination Committee.
Wayne State University; Detroit, MI. 1 February 2006.
- “Algeria 1945 to Present - A Brief View”
New World Agricultural and Environmental Group.
The University of Michigan; Ann Arbor, Mi. 8 December 2005.
- “The Global Oil System and the Iraq War”
Our Common Futures Lecture Series (PitE273)
School of Natural Resources and Environemnt
The University of Michigan; Ann Arbor, MI. 14 November 2005.
- “The Globalized Energy Order”
Engineers Without Borders Lecture Series
BlueLab: Better Living Using Engineering. School of Engineering
The University of Michigan; Ann Arbor, MI. 31 October 2005.
- “A Convergence of Domestic European-Union and U.S. Energy- and Transportation-Infrastructure Trajectories? – A Case Study in the New Energy Globalization.”
Faculty/PhD Seminar
School of Natural Resources and Environment (SNRE)
The University of Michigan; Ann Arbor, MI. September 30, 2005.
- “The global oil system: Resources, technology and the new US policy”
Plenary session
CNS Anniversary Conference, Celebrating the work of James O’Connor
York University; Toronto, Canada. 22-24 July 2005.
- “Lectures on Globalization and U.S. Policy: The Global Oil Order; The Information Revolution,”
Faculté de Sciences Economiques et de Gastion (Graduate)
Université d’Alger; Alger, Algèria. April-May 2005.

- “Global Oil System Since 1973: OPEC, the IEA, IEF and its Permanent Secretariat”
2005 Left Forum panel with M. Klare and M. Tanzer.
Union of Radical Political Economy (URPE)
City College of New York Graduate Center; New York City. 15-16 April 2005.
- “Oil-market control institutions - The US and IEA-OPEC collaboration in the new Permanent Secretariat of the International Energy Forum (IEF) in Riyadh”
Graduate Seminar on Empire
Department of Political Science.
York University; Toronto, Canada. 4 March 2005.
- “The Geography and Politics of a Resource: Oil in the Middle East,”
Introduction to Arab Culture and Language. AAPTIS 331 course
The University of Michigan; Ann Arbor, MI. 3 February 2005.
- “The global oil system: Resources, technology and the new US strategy”
Social Dynamics of Science, Technology, and Medicine. RCSocSci275
The University of Michigan; Ann Arbor, MI. 2 February 2005.

4.2 pre-2005

- “The global oil system: Resources, technology and the new US strategy,” *School of Natural Resources and Environment (SNRE), Faculty/PhD Seminar*.
The University of Michigan; Ann Arbor, MI. December 10, 2004.
- “El Sistema global del Petróleo Recursos, tecnología y la nueva fase de la hegemonía estadounidense.” *Conferencia de la Facultad Biologica y Ciencia [Spanish. By tele-conference, from University of Michigan, Duderstadt Media Union.]*
Universidad del Valle; Cali, Columbia. 27 September 2004
- “The global oil system: Resources, technology and the new US offensive,” *Our Common Future, Environ 270 course, Program in the Environment (PitE)*
The University of Michigan; Ann Arbor, Mi. 29 November 2004.
- “The IEA cartel, oil-price swing states, and U.S. oil hegemony: How ”cheap oil!” remakes the world in America’s image,” *Global Studies Association Third Annual Conference, Globalization, Empire and Resistance*
Brandeis University; Boston, MA. 23-25 April 2004.
- “Are the US and EU on different trajectories in their energy and transportation sectors?” *New World Agricultural and Environmental Group*.
The University of Michigan; Ann Arbor, Mi. 13 January 2004.
- “Globalism and the Information Revolution: Emergence of new class forces in the US as seen in the pro- and anti-Iraq-war camps,” *Rethinking Marxism Conference*
University of Massachusetts; Amherst, MA. November, 2003.
- “The US-EU infrastructure divide: A cross-Atlantic clash of transportation, energy and environmental cultures,” *Society for Social Studies of Science (4S) 2003 Meeting*, Atlanta, GA. October, 2003.

- “The conquest of Iraq: A War for US Oil Hegemony,” *New World Agricultural and Environmental Group, International Meeting*, University of Michigan; Ann Arbor, MI. 4-6 April, 2003.
- Respondent to: “Greater Risks, Fewer Rights: California Farm Workers and Pesticides,” (by Margaret Reeves, Ph.D., Pesticide Action Network, USA) *Latino/as and Environmental Justice Conference*, University of Michigan, Ann Arbor. 22-24 November 2002
- “The invasion of Iraq: Middle-East oil, Saudi instability, and the energy subordination of the EU, Russia, Japan and China,” *University of Michigan Student Teach-In*. 14 April 2003.
- “Invasion of Iraq: Oil Hegemony and its Global Reach,” *The Guild House*, Ann Arbor, MI. 8 April 2003.
- “The US invasion of Iraq: Geopolitics of oil in the Middle East,” *Public Forum on the War in Iraq*, Washtenaw County Community College, Ann Arbor, MI. 23-24 April 2003.
- “A brief history of socialism and the internationals, 1843-2003.” Three lectures. *New World Agricultural and Environmental Group (NWAEG)*, The University of Michigan, Ann Arbor. 17, 24 April, and 5 May 2003.
- “Geo-economic study of oil and the reasons for the Iraqi War,” *Ecumenical Council and International Residence*, University of Michigan, Ann Arbor. 27 January 2003.
- “Quantum computers and reality: Deutsch’s anti-positivist campaign for explanation, apart from his Many Worlds Interpretation,” *Forum on the History of Physics, 2002 American Physical Society Conference, Joint Meeting of Nuclear and Astrophysics Sections*, Albuquerque, NM. April 2002.
- “Symmetry and pairing energies of atomic nuclei, and quartet-structures in $N \approx Z$ nuclei,” *American Physical Society Conference, Joint Meeting of Nuclear and Astrophysics Sections*, Albuquerque, NM. April 2002.
- “Phase transition in computing cost of over-constrained NP-complete 3-SAT problems,” *American Physical Society, March Meeting*, Indianapolis, IN, March 2002. [Based on work with my NSF-REU summer students at U. Michigan Physics: Adam Woodson (delivered), Truman State University, Kirksville, Missouri, and Peter Maniloff, Duke University, Raleigh, NC]
- “Phase transitions in NP-Complete 3-Sat problems—Physical insights into computationally hard problems,” *Applied Physics Seminar*. The University of Michigan. December 2001
- “Marx, Computers and the End of Industrial Unionism,” *The American Sociological Association (ASA) National Convention*. Washington, D.C. August, 2000.
- Six academic presentations: On *Thesis* research which produced new, neutron-rich nuclei, and exotic radioactive nuclear beams (RNBs).
At nuclear chemistry & physics conferences. 1997-2001.
- “Twentieth-Century American Wars,” *Invited Speaker, University of Michigan Department of History*. Three classes Fall 1999.
- Series of talks:

- “The Bosnian War and US–Western European Relations Since the Persian Gulf War.”
- “The Development of Capitalism in the 20th Century”
- “Great Power Rivalries and Regional Economic Integration”
- “The Close of the Neo-Colonial Era and the Advent of Democratization Movements.”

Saturday Forum (Graduate-student interdisciplinary forum), Ann Arbor, MI. Academic Year, 1996-1997.

- “History of US involvement in Viet Nam, and the US soldiers’ anti-war movement,” *Invited Speaker, University of Michigan, Department of History*. Three classes, Fall 1996
- “Radioactive Nuclear Beam (RNB) Research with U. Michigan Solenoid Magnets—at National Superconducting Cyclotron Laboratory, NSCL and UM-University of Notre Dame RNB Facility,” *Nuclear Seminar, Lawrence Berkeley National Laboratory*. October 1994.

5 Op-Ed and Selected Commentary

- “Time to ask: What were real reasons for war,” **The Ann Arbor News**, Editorial page. 14 July 2003.
- “War is about controlling oil prices,” with Prof. John Vandermeer. Cheap oil as constraint on development of alternative energy, and implications for global warming. **The Ann Arbor News** p.B7. Sunday, 4 May 2003.
- “Why Bush Jr. wants war on Iraq—A crisis really about Saudi Arabia,” <http://www.umich.edu/~twod/politics/iraq/> in **Agenda Magazine**, Ann Arbor. December 2002.
- “On Affirmative Action and Scholarship at U of M: A Proposed Talk for Spring Commencement 2000.” <http://www.umich.edu/~twod> April 2000.
- “Some Observations on the Terrorist Attacks in New York and Washington: For the development of a consistent, progressive political theory against terrorism and its origins,” <http://www.umich.edu/~twod/terrorism> 19 September 2001.
- “On the ‘Left’ Confusion Over US/NATO Intervention in Kosovo,” Tom O’Donnell, www.umich.edu/~twod/politics/kosovo/ **Agenda Magazine**, Ann Arbor, MI. May/June, 1999.
- “The Republican Revolution and Impeachment—On the Class Character of the Republican Revolution,” (On the split between two strata of the business class within the Republican Party. <http://www.umich.edu/~twod> December 1998.
- “National and Religious Chauvinism Gone Nuclear—The Extreme Dangers of Indian-Pakistani Nuclear Testing,” <http://www.umich.edu/~twod> May 1998.
- “The Truth About Bombing Iraq,” <http://www.umich.edu/~twod> September 1996.

6 Teaching

6.1 Interdisciplinary

- “The Global Oil System and the Middle East” The University of Michigan.
Near East Studies 491, Geological Sciences 496 & Residential College SocSci461
Fall 2005 <http://www.umich.edu/~twod/courses>
- “Energy and the Environment” The University of Michigan
RC Natural Science 264, Program in the Environment PitE264, & Urban Planning 264
Fall 2004 & **Fall 2005** <http://www.umich.edu/~twod/courses>
- “Social Dimensions of Science, Technology and Medicine” The University of Michigan.
RC Social Science 260. Co-taught.
Winter 2001, & **Winter 2005** <http://www.umich.edu/~twod/rc-fys>
- “The Global Oil System” The New School University for Social and Political Research; New York, NY
Graduate Economics, GC5130
Summer 2005 <http://www.umich.edu/~twod/oil-ns>
- “Steam Engines and Computers: From Industrial Proletarians to Information Workers.”
Residential College (RC), The University of Michigan.
Senior Seminar, RC Social Science 460, History 498, Sociology 495
Winter 2001, 2002 (as Jr. Seminar), 2004 & Winter 2005
<http://www.umich.edu/~twod/courses>
- “The Intellectual History of Information, 1680–2001: A Story of Mathematics, Logic,
Philosophy, Physics and Computer Science”
Residential College (RC), The University of Michigan.
RC First-Year Seminar
Fall 2001
<http://www.umich.edu/~twod/courses>
- “RC Mini Research Course: ”Global Political-Economy of Oil and the Iraq War”
Residential College (RC), The University of Michigan.
Special Topics RC Inter-Divisional 350, & Undergraduate Research Opportunities Program (UROP) 260.
Winter 2004
Proposed, and taught as a class-development project; with Center for Research on Learning
and Teaching course-development grant.
<http://www.umich.edu/~twod/courses>
- “Numerous Independent Study Students and Student Teams”
Residential College (RC), The University of Michigan.
Special Topics RC Inter-Divisional, & Undergraduate Research Opportunities Program (UROP), *etc.*

6.2 Physics

• Introductory Courses

- Mechanics Phys140K, Keller method. GSTA (Profs. B. Lewis, R. Clarke) [2x: 1988 & 1989]
- Electricity and Magnetism, Phys240K. Keller-method. GSTA (Prof. R. Sands) [2x: 1989 & 1990]
- Introductory laboratories, Phys127. GSTA [2x: 1999]

• Advanced Courses

- Thermodynamics & Statistical Mechanics, Phys406. Problem sessions (Prof. R. Merlin) [1990]

- Nuclear Physics, Phys457. Grader (Prof. J. Jänecke) [2x: 1991-1992]
- Optics Laboratory Phys402. Sub. for faculty & grade [1995]
- Advanced Physics Laboratories Phys441 & 442
GSTA, (Profs. R. Clarke and T. Chupp) [4x: 1997-1998, 2000, 2001]

6.3 Teaching Teachers

- Staff Member: Center for Research on Learning & Teaching (CRLT), University of Michigan
Taught International Teaching-Assistants' Training Courses. [1988 (2x) & 1989 (2x)]
- Staff, Speaker: College of Literature Science and Art (LS&A), University of Michigan
Taught Graduate Teaching Assistants' Training Course [1990 (2x)]

6.4 Undergrad & Other

- UM Physics Department: Chief-Tutor, Keller-Method Electricity and Magnetism [1987].
- State University of New York at Buffalo, Independent Colleges,
"History of Twentieth-Century China" [1974].
Taught in new "'Experimental' Colleges" while undergraduate for undergrads/grads.
- Participated in the movement to establish the 'Experimantetal' Colleges (Black Studies, Woman's Studies, etc.) at the State University of New York at Buffalo [1970's].

7 Publications

7.1 2005-2006

- 39 "The New Globalized Oil System and the Middle East"
An analysis of the political economy of new, cooperative *global* market practices and institutions, developing between OPEC states and the First-World since the OPEC Revolution; of their geo-strategic and political implications for the U.S., E.U., and the Middle-East and North-African (MENA) states, especially in the Iraq War and Iran crisis.
- *Academic book in preparation.*
- 38 "The Political Economy of the U.S.-Iran Crisis: Oil, Not Nukes, is the Issue"
Z Magazine, Woods Hole, MA. **Volume 19, No. 6**, June 2006.
- 37 "The Political Economy of a Globalized Oil System: How "Objective Conditions" Drive the OECD and OPEC From Confrontation to Collusion" (2006)
- *Article submitted and under review. About 50 pps..*
- 36 "Symmetry energies, pairing energies, and mass equations", J. Jänecke and T.W. O'Donnell,
Nucl. Phys. A (2006), *In preparation.*
- 35 "Isospin inversion and p-n pairing in self-conjugate nuclei $A = 58$ to 98", J. Jänecke and T.W. O'Donnell, *Phys. Letters B* **Volume 605, Issues 1-2**, 6 January 2005, Pages 87-94.
- 34 "Symmetry energies and the curvature of the nuclear mass surface" J. Jänecke and T.W. O'Donnell,
European Physics Journal In press.

7.2 pre-2005

- 33 “ $^{209}\text{Bi}(^6\text{He},\alpha)$ reaction mechanisms studied near the Coulomb barrier using n-coincidence measurements” J.P. Bychowski, P.A. DeYoung, B.B. Hilldore, J.D. Hinnefeld, A. Vida, F.D. Becchetti, J. Lupton, T.W. O’Donnell, J.J. Kolata, G. Rogachev and M. Hencheck *Physics Letters B*, **Volume 596**, Issues 1-2, 19 August 2004, Pages 26-31.
- 32 “Symmetry and pairing energies of atomic nuclei.” J. Jänecke, T.W. O’Donnell and V.I. Goldanskii. *Nuclear Physics A 728* (2003) 23-51.
- 31 “Isospin inversion in $N = Z$ nuclei and deuteron-like and α -particle-like structures.” J.Jänecke, T.W. O’Donnell, and V.I. Goldanskii, *Phys. Rev.* **C66**, **024327** (2002)
- 30 “Energy Dependence of the Total Reaction Cross Section of Isomeric $^{18}\text{F}^m$ on Silicon Below 400 MeV.” D.A. Roberts, F.D. Becchetti, J.J. Jänecke, M.Y. Lee, T.W. O’Donnell, K. Pham, J.A. Brown, R.E. Warner, R.M. Ronningen, H.W. Wilschut. *Phys. Rev. C* **65**, **044605** (2002)
- 29 “Measurement of L/K Ratio in ^7Be Electron Capture.” P.A. Voytas, C. Ternovan, M. Galeazzi, D. McCammon, J.J. Kolata, P. Santi, D. Peterson, V. Guimaraes, F.D. Becchetti, M.Y. Lee, T.W. O’Donnell, D.A. Roberts, S. Shaheen. *Phys. Rev. Letters* **88**, **012501** (2001).
- 28 “Proton Elastic Scattering from ^7Be at Low Energies.” G. V. Rogachev, J. J. Kolata, F. D. Becchetti, P. A. DeYoung, M. Hencheck, K. Helland, J. D. Hinnefeld, B. Hughey, P. L. Jolivet, L. M. Kiessel, M. Y. Lee, T. W. O’Donnell, G. F. Peasley, D. Peterson, D. A. Roberts, P. Santi, and S. A. Shaheen *Phys. Rev. C* **64**, **061601(R)** (2001).
- 27 “Elastic Scattering and Transfer in the $^6\text{He}+^{209}\text{Bi}$ System Below the Coulomb barrier.” E. F. Aguilera, J. J. Kolata, F. D. Becchetti, P. A. DeYoung, J. D. Hinnefeld, A. Horváth, L. O. Lamm, H. Y Lee, D. Lizcano, E. Martinez-Quiroz, P. Mohr, T. W. O’Donnell, D. A. Roberts, and G. Rogachev. *Phys. Rev. C* **63**, **061603(R)** (2001).
- 26 “Breakup of ^8B at Sub-Coulomb Energies.” J. J. Kolata, V. Guimarães, D. Peterson, P. Santi, R. H. White-Stevens, and S. M. Vincent, F. D. Becchetti, M. Y. Lee, T. W. O’Donnell, D. A. Roberts, and J. A. Zimmerman. *Phys. Rev. C* **63**, **024616** (2001).
- 25 “Gamma-Ray Spectroscopy with a Low Energy Radioactive Nuclear Beam” S. Vincent et al. To appear in *Nuclear Instr. & Meth.*
- 24 “The Energy Dependence of the Total Reaction Cross Section of Isomeric F^{18} on Silicon Below 400 MeV.” D.A. Roberts, F.D. Becchetti, J. Jänecke, K. Pham, M.Y. Lee, J.B. Brown, T.W. O’Donnell, R.E. Warner, R.M. Ronningen and H.W. Wilschut. To appear in *Physical Review C*.
- 23 “Experimental Apparatus for the Study of the Effects of Strong Longitudinal Magnetic Fields on the Dose Distribution of Clinical Photon and Electron Radiotherapy Beams.” D.W. Litzenberg, B.W. Fraass, D.A. McShan, J.M. Moran, T.W. O’Donnell, D.A. Roberts, R.D. Becchetti. *Phys Med Bio* **V46 no.5**, pp. **N105-N115**, 2001.
- 22 “A Superconducting-Solenoid Isotope Spectrometer for Neutron-Rich Nuclei ($^{136}\text{Xe}+^{nat}\text{C}$ at $E/A= 30$ MeV/u),” Physics Department, University of Michigan, Ann Arbor. 24 February 2000. 268 pages. URL: “www.umich.edu/~twod/thesis”

- 21 “Nuclear and Coulomb Interaction in the ${}^8\text{B} \rightarrow {}^7\text{Be} + \text{p}$ Breakup Reaction at Sub-Coulomb Energies,” V. Guimarães, J.J. Kolata, D. Peterson, P. Santi, R.H. White-Stevens, S.M. Vincent, F.D. Becchetti, M.Y. Lee, T.W. O’Donnell, D.A. Roberts, and J.A. Zimmerman. *Physical Review Letters*, February 28, 2000, **Volume 84, Issue 9**, 1862-1865.
- 20 “Transfer and/or Breakup Modes in the ${}^6\text{He} + {}^{209}\text{Bi}$ Reaction Near the Coulomb Barrier,” E.F. Aguilera, J.J. Kolata, F.M. Nunes, F.D. Becchetti, P.A. DeYoung, M. Goupell, V. Guimarães, B. Hughey, M.Y. Lee, D. Lizcano, E. Martinez-Quiroz, A. Nowlin, T.W. O’Donnell, G.F. Peaslee, D. Peterson, P. Santi, and R. White-Stevens. *Physical Review Letters*, 29 May, 2000, **Volume 84, Issue 22**, 5058-5061.
- 19 “Search for Isovector Giant Monopole Resonances via the ${}^{124}\text{Sn}({}^3\text{He}, \text{tn})$ Reaction,” R.G.T. Zegers, G.P.A. Berg, S. Brandenburg, C.C. Foster, M.N. Harakeh, J. Jänecke, T.W. O’Donnell, T. Rinckel, D.A. Roberts, S. Shaheen, E.J. Stephenson, S.Y. van der Werf. *Physical Review C* **v56** 054602, (2000); April issue.
- 18 “Structure of Isobaric Analog States in ${}^{91}\text{Nb}$ Populated by the ${}^{90}\text{Zr}(\alpha, t)$ Reaction,” H.K.T. van der Molen, H. Akimune, A.M. van den Berg, I. Daito, H. Fujimura, M. Fujiwara, Y. Fujita, M.N. Harakeh, F. Ihara, T. Inomata, K. Ishibashi, J. Jänecke, N. Kalantar-Nayestanaki, H. Laurent, I. Lhenry, T.W. O’Donnell, V.A. Fodin, A. Tamii, H. Toyakawa, M.H. Urin, H. Yoshida and M. Yohoi. To appear in *European Physics Letters B* **000** (2000) 000-000.
- 17 “Marx, Computers and the End of Industrial Unionism,” Thomas W. O’Donnell and Sanjiv Gupta. Presented at Refereed Roundtable Session, *The 95th The Annual Meeting of the American Sociology Association*, Washington, D.C., August 2000. [URL: www.umich.edu/~twod/sociology]
- 16 “Isotope Yields with a Solenoid-Based Fragment Mass Analysis System - Prospects for Exotic Isotope Studies in the $10 < Z < 30$ Range,” T.W. O’Donnell, F.D. Becchetti, J. Brown, J.W. Jänecke, M.Y. Lee, R.S. Raymond, D.A. Roberts, R.S. Tickle, H.C. Griffin, and R. Ronningen. *Nuclear Instruments and Methods in Physics Research A* **422** (1999) 513-517.
- 15 “CoulEx-NucleEx Interference in ${}^8\text{Li}$ RNB Inelastic Scattering Near the Coulomb Barrier,” F.D. Becchetti et al. Presented at Centennial Meeting of the American Physical Society, *BAPS Vol.44, No.1, Part I* (1999) 259.
- 14 “Quasi-Elastic Neutron Transfer near the Coulomb Barrier: (${}^8\text{Li}, {}^7\text{Li}$) in Ni and Pb,” M.Y. Lee, et al. Presented at Centennial Meeting of the American Physical Society, *BAPS Vol.44, No.1, Part I* (1999) 259.
- 13 “Recent Results and Future Capabilities at the National Superconducting Cyclotron Laboratory, Michigan State University,” with R.M. Ronningen et al. *Proceedings of the International Symposium on Perspectives in Nuclear Physics*, November 1998.
- 12 “Study of Nuclear Reactions with Intense, High-Purity, Low-Energy Radioactive Ion Beams Using a Versatile Multi-Configuration Dual Superconducting-Solenoid System,” M.Y. Lee, F.D. Becchetti, T.W. O’Donnell, D.A. Roberts, J.A. Zimmerman, V. Guimaraes, J.J. Kolata, D. Peterson, P. Santi, P.A. DeYoung, G.F. Peaslee, and J.D. Hinnefeld. *Nuclear Instruments and Methods in Physics Research A* **422** (1999) 536-540.

- 11 "Production of Exotic (or Polarized) Low-Energy Radioactive Beams via Two Successive Nuclear Reactions: Tertiary Beams," F.D. Becchetti, M.Y. Lee, T.W. O'Donnell, D.A. Roberts, J.J. Kolata, V. Guimarães, D. Peterson, and P. Santi. *Nuclear Instruments and Methods in Physics Research A* **422** (1999) 505-509.
- 10 "In situ thin-film texture determination," Dimitri Litvinov, Thomas O'Donnell, Roy Clarke. *Journal of Applied Physics*, **Vol. 85, No. 4**, 15 February 1999, 2151-2156.
- 9 "Reaction Cross Sections in Si of Light Proton-halo Candidates ^{12}N and ^7Ne ," R.E. Warner, H. Thirumurthy, J. Woodroffe, F.D. Becchetti, J.A. Brown, B.S. Davids, A. Galonsky, J.J. Kolata, J.J. Kruse, M.Y. Lee, A. Nadasen, T.W. O'Donnell, D.A. Roberts, R.M. Ronningen, C. Samanta, P. Schwandt, J. von Schwarzenberg, M. Steiner, K. Subotic, J. Wang, and J.A. Zimmerman. *Nuclear Physics A* **635/3** (1998) 292-304.
- 8 "Single-particle states at high excitation energy", A.M. van den Berg, H. Akimune, I. Daito, H. Fujimura, M. Fujiwara, Y. Fujita, M.N. Harakeh, F. Ihara, T. Inomata, K. Ishibashi, J. Jänecke, N. Kalantar-Nayestanaki, H. Laurent, I. Lhenry, H.K.T. van der Molen, T. O'Donnell, V.A. Rodin, A. Tamii, H. Toyokawa, M.H. Urin, H. Yoshida, and M. Yosoi, *Heavy Ion Physics* **5** (2000) 000-000.
- 7 "Single Particle States at High Excitation Energy", H.K.T. van der Molen, H. Akimune, A.M. van den Berg, I. Daito, H. Fujimura, M. Fujiwara, Y. Fujita, M.N. Harakey, F. Ihara, T. Inomata, K. Ishibashi, J. Jänecke, N. Kalantar-Nayestanaki, H. Laurent, I. Lhenry, T.W. O'Donnell, V.A. Fodin, A. Tamii, H. Toyakawa, M.H. Urin, H. Yoshida and M. Yohoi. *Heavy Ion Physics* **5** (1997).
- 6 "Enhanced Low-Energy Nuclear Reaction Cross Sections for a Secondary High-Spin Isomeric Nuclear Beam ($^{18}\text{F}^m$) in Silicon," D.A. Roberts, F.D. Becchetti, J.A. Brown, J. Jänecke, K. Pham, T.W. O'Donnell, R.E. Warner, R.M. Ronningen, and H.W. Wilschut. *Phys. Rev. C* (1997).
- 5 "TwinSol: A Dual Superconducting Solenoid System for Low-Energy Radioactive Nuclear Beam Research," M.Y. Lee, F.D. Becchetti, J.M. Holmes, T.W. O'Donnell, M.A. Ratajczak, D.A. Roberts, J.J. Kolata, L.O. Lamm, J. von Schwarzenberg, M. Wiescher, Proc. 14th Int'l. Conf. on the Application of Accelerators in Research and Industry, University of North Texas, Denton, Texas, November 6-9, 1996, J.L. Duggan and I.L. Morgan, editors, *AIP Conference Proceedings* **392** 397-400. AIP Press, Woodbury, New York, November 1997.
- 4 "Proton Scattering from an Excited Nucleus ($^{18}\text{F}^m$, $J = 5+$, $E_x = 1.1$ MeV) Using a γ -Ray Tagged Secondary Isomeric Nuclear Beam," J. Brown, F.D. Becchetti, J. Jänecke, D.A. Roberts, D.W. Litzenberg, T.W. O'Donnell, R.E. Warner, N.A. Orr, and R.M. Ronningen. *Phys. Rev. C* **51** (1995) 1312-1319.
- 3 "Unusual Energy Dependence of the Total Nuclear Reaction Cross Section for a Secondary Isomeric Nuclear Beam," D.A. Roberts, F.D. Becchetti, J.A. Brown, J. Jänecke, K. Pham, T.W. O'Donnell, R.E. Warner, R.M. Ronningen, and H.W. Wilschut. *Nucl. Phys.* **A588** (1995) 247c-252c.
- 2 "Mass Separator Using a Large Solenoid 'Lens' with Time of Flight, and Position-Sensitive Detectors," T.W. O'Donnell, E. Aldredge,

F.D. Becchetti, J.A. Brown, P. Conlan, J. Jänecke, R.S. Raymond, D.A. Roberts, R.S. Tickle, H.C. Griffin, J. Staynoff, and R. Ronningen, *Nuclear Instruments and Methods*. **A353** (1994) 215-216.

- 1 “Installation and In-Beam Tests of a Large-Bore 7T Superconducting Solenoid Reaction-Product Collector”, F.D. Becchetti et al., *Nuclear Instruments and Methods*. **B79**, (1994) 326-329.

7.3 Short contributions)

- 5 “Symmetry Energies, Pairing Energies, and binding Energies of Atomic Nuclei,” J. Jänecke, T.W. O’Donnell and V.I. Goldanskii
- 4 “Energy Dependence of the Total Nuclear Reaction Cross Section for Metastable $^{18}\text{F}^m$ ($J^\pi=5^+$, $E_x=1.2$ MeV)”, D.A. Roberts, F. D. Becchetti, J. Jänecke, T.W. O’Donnell, R. S. Tickle, J. A. Brown, R. Ronningen, H. Wilschut, and R. E. Warner, *International Symposium on Physics of Unstable Nuclei* (Niigata, Japan, November 1994). Invited Presentation D. A. Roberts.
- 3 “Study of Nuclear Reactions Using Gamma-Tagged Radioactive Isomeric Nuclear Beams”, J.A. Brown, F.D. Becchetti, J.W. Jänecke, D.A. Roberts, D.W. Litzenberg, T.W. O’Donnell, R.M. Ronningen, and R.E. Warner, *Third International Conference on Radioactive Beams* (East Lansing, MI, May 1993).
- 2 “Installation and Initial In-Beam Tests of a Large-Bore 7 Tesla Superconducting Solenoid Reaction-Product Collector”, F.D. Becchetti, J. Bajema, J.A. Brown, J.W. Jänecke, T.W. O’Donnell, R.A. Raymond, D.A. Roberts, R.M. Ronningen, H. Laumer, N. Orr, A. Zeller, and R.E. Warner, *Sixth International Conference on Nuclei Far from Stability*, (Bernkastel-Kues, Germany, July 1992). Inst. Phys. Conf. Ser. No. 132: Section 8 (1993) p. 943-945.
- 1 “Production and use of ^6He , ^7Be , ^8Li , ^{12}B and Metastable Nuclear Beam”, F.D. Becchetti *et al.*, in *11th International Conference on Applications of Accelerators*, Denton, TX (1990).

8 Grants, Awards & Fellowships

(Selected)

8.1 Post-doctoral

- Center for Middle-East and North-African Studies (CMENAS) U. Michigan. Faculty matching grant. Book research in N.Y.C. (\$1,000). Summer 2006.
- Center For Research on Learning and Teaching (CRLT) U. Michigan. Lecturer’s Development Grant. (\$2,000). Summer 2006.
- Technology Institute, Center For Research on Learning and Teaching (CRLT) U. Michigan. Develop blogs as online student research logs in new-course development. (\$2,500). Spring 2005.
- Extraordinary: College of LS&A, and Duderstadt Media Union. Costs of video-conferenced lecture at Universidad del Valle, Call, Colombia: “Global Oil System,” (\leq \$500). Fall 2004.
- Center for Research on Learning and Teaching (CRLT) of

Course-development grant, \$500 and Residential College salary support \$2000.

Develop "Research Mini-Course on Global Oil and the Iraq War."

U. Michigan. Winter 2004.

- Extraordinary post-doctoral research grant from:
Ford Motor Company Research Labs. Dearborn, MI. "Sustainable Mobility," research, (\$40,000)
Conducted at U.M. Center for the Study of Complex Systems. 2002
Note: During this period, initiated research on global oil system.
- Texas A&M Cyclotron Institute.
Conduct experiments on production of new super-heavy elements, February 2004.
- Fellows' Grant, from Rackham Summer Interdisciplinary Institute (RSII), U. Michigan.
"Case Studies of Emergence—In the natural and social sciences."
Summer salary/research support. 2002
- Fellow of Harvard Information Infrastructure Project (HIIP), (Declined award)
Belfer Center for Science and International Affairs (BCSIA),
Kennedy School of Government (KSG), for 2001-2002.
- Terwilliger Distinguished Dissertation Prize, from faculty of Physics Department,
"The most prestigious award given by the Physics Department to a graduate student,"
awarded for "best dissertation since January 1999." April, 2000

8.2 Graduate

- Joint Grant from Chairs of Physics and Sociology Departments, University of Michigan
Present paper at American Sociological Association National Convention, Washington, D.C.
 - Travel Grant, Rackham School of Graduate Studies and/or Department of Physics.
Several, to present papers at nuclear physics conferences. [1994-1998]
- Rackham School of Graduate Studies Discretionary Fund and
Department of Physics, Joint Grant [1994]
- Rackham School of Graduate Studies Discretionary Fund Grant [1992]
- Rackham School of Graduate Studies Non-Traditional Fellowship [1988-1989]

8.3 Undergraduate

- National Physics Honor Society, Sigma Pi Sigma [1988]
- UM College of Literature Science and Arts Academic Scholarship. Awarded yearly [1984-1988]
and supplemental (extraordinary) awards [twice]
- Ford Motor Company-UAW Joint Scholarship [1983]
- N.Y. State Regents Scholarship for SUNY System [1970-1973]

9 Professional & Consulting Projects

- 2003-05 U. Michigan Phoenix Memorial Laboratories/Ford Nuclear Reactor
 - Nuclear-reactor decommissioning project; health physics
 - NRC regulatory-compliance, human-health and training responsibility. 50% appointment.
- 1993-94, '95 Consulting Physicist ($\geq 50\%$).
 - Special projects, modeling of doses, airborne radioisotope dispersal, accident remediation.

U. Michigan Medical School and Hospital

- 1991-1992 Consulting Physicist, Positron Emission Tomography (PET) Cyclotron (50%).
With D. Norton, P.E., Chief Engineer, University of Michigan Medical School.
- Gaseous ($^{11}\text{CO}_2$) Radioactivity Containment Project. Model and design ≈ 1 Mega-\$
radioactivity containment systems. Oversight of contractors and commissioning with Chief Engineer.
- 1990-1991 Commissioning and Evaluation Group (Engineering/Physics), University of Michigan
Management and Design Department.
- Medical School, Dean’s 20-Year Forecast Project. Develop thermodynamic-efficiency and useful-
lifetime testing for ≈ 2 -million-ft² bio-medical research facilities. Project head: D. Norton, P.E.
- 1990-1991 Consulting Physicist, University of Michigan Medical School Facilities and Design Office,
–Medical School Laboratories air-quality study. Director: H. Beaumont.
- 1989-1990 Consulting Physicist. *ibid.*
- Evaluation of U. Michigan nuclear research reactor waste-water treatment proposals. For Director,
Engineering Services: J. Janvesa, P.E.
- 1988-1989 *ibid.*
- Analysis of automated fire suppression and emergency ventilation system failures. Material Science
Laboratories, University of Michigan.
- 1988-1989 *ibid.*
- Heat-load analysis, redesign of environmental systems for Ancient Papyrus Archives.
- Design and construction-oversight of winter ‘free cooling’ systems in University of Michigan Graduate
(Hatcher) Libraries.
- Redesign of trace-metal-free seawater/environmental laboratory, Department of Geology
- 1986-1987 Physics Department research Cryogenics Laboratory
- Liquification of ^4He . Prof. K. Terwilliger, Associate Chair for Research (50%).
- 1982-1991 Self-Employed (while student)
- Engineering and skilled-trades services: Energy-assessments, industrial-sized steam boilers, LiBr and
freon refrigeration systems, pneumatic and electric controls, computer control and monitoring systems,
ventilation (HVAC), water treatment.
- 1981-1982 Detroit Medical Center
- Computer-controlled HVAC and emergency power-generation systems.

10 University Committees & Projects

- 2002-03 Project to establish an interdisciplinary State of Michigan “Quantum Institute” for collab-
oration of Michigan universities and research corporations.
- 2001 Graduate Oral Qualifying Exam Committee. Applied Physics Program, University of Michigan
- 1989-1991 “ $\nabla\Phi$ ”, the physics graduate student association, University of Michigan
- Co-founder, Executive Committee.
- 1992-1993 Rackham Graduate School, Non-Traditional Fellowship Committee

11 Supervision of Research Students

/it Since 1991. Projects and/or students names available by request

12 Professional and Academic Organizations

- Middle East Studies Association (MESA)
- Association for U.S. Energy Economics (USAEE, section of International Association for Energy Economics IAEE)
- American Physical Society (APS)
- Union for Radical Political Economy (URPE)

13 Languages

13.1 Human

- Spanish, roughly fluent
- Chinese (Mandarin), 2+ years
- Some French

13.2 Machine

- Interactive Data language (IDL), visualization, data reduction and simulation language, expert level.
- C, C++, Fortran, HTML, LaTeX, etc., general competence.
- Specialized data acquisition and analysis languages used at national laboratories for nuclear physics experiments. From assembly-like languages (XSYS), to Fortran-like (SARA), to GUI-driven (Exceed).