J. Thomas Dickinson
WSU Eminent Professor

Regents Professor of Physics and Materials Science
Paul A. Anderson Professor of Physics
Washington State University
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Born: March 9, 1941, Detroit, Michigan

Married: Wife (Diane), M. S. Computer Sci., Systems Programmer, WSU Computing Center, one child (Jennifer).

EDUCATION:

Western Michigan University, 1963, B.A. Physics and Mathematics (magna cum laude, Honors in Physics, Graduate of WMU Honors College-first graduating class)

University of Freiburg, Germany, 1962 (course work in physics, mathematics, German)

University of Michigan, 1964 M.S. Physics

University of Michigan, 1968 Ph.D. Physics -- Molecular Beam Spectroscopy, Advisor: Jens Zorn.

Thesis Title: *Hyperfine Structure of TlBr by Molecular Beam Radiofrequency Spectroscopy*

EXPERIENCE:

Assistant Professor of Physics, Washington State University, 1968-74.

Associate Professor of Physics and Chemical Physics, Washington State University, 1974-79.

Visiting Scientist, Chemical Engineering, Stanford University, 1974.

Visiting Scientist, Applied Physics, Oregon Graduate Center, 1975.

Visiting Scientist, NASA-Ames Research Center, Summers, 1976-1985.

Professor of Physics and Chemical Physics, Washington State University, 1979-present.

Director, Center for Materials Research, Washington State University, 1988-1993;

Graduate Faculty, Mechanical and Materials Engineering, 1990-present.

Professor of Materials Science, 1990-present.

Director, Center for Materials Research, Washington State University, 1991-1994.

HONOR SOCIETIES:

Kappa Rho Sigma

Omicron Delta Kappa

Sigma Xi

PROFESSIONAL SOCIETIES:

American Physical Society (Fellow)

American Association of Physics Teachers

American Vacuum Society (Fellow)

American Association for the Advancement of Science (Fellow)

American Chemical Society

Materials Research Society (Fellow)

SPIE (Fellow)

OSA

COMMITTEE SERVICE AT WSU:

University

Member, Subcommittee of Catalog Committee on G.R.U., 1972.

Member, Cross-College Coordinating Committee, 1978.

Member, School of Engineering Advisory Council, 1983-84.

Member, Search Committee, Vice Provost for Research, 1986-87.

Member, University Task Force on Research & Grad. Education, 1987-88.

Co-Chairman, Committee for Materials Research Center, 1987-1995.

Co-Chairman, Committee for Materials Science Graduate Program, 1987-1999.

Member, Advisory Committee, Molecular Sciences Initiative, 1988.

Member, Search Committee, Dean, Division of Sciences, 1988-90.

Member, College of Engineering and Architecture Tenure and Promotion Advisory Committee, 1989.

Member, Catalog Sub-Committee, 1990-1992.

Co-Chairman, Review Committee for Ph.D. Degree in Engineering Science, 1993.

Member, University President's Teaching Recognition Committee 1996-99.

Member, Search Committee, Vice Provost for Research, 2002-2003.

Member, Selection Committee, Distinguished Faculty Address Award, 2003-present.

Elected to WSU Teaching Academy, 2004-present.

Chair, University Committee on Undergraduate Research, Original Scholarship, and Creative Activity, 2004-present

Member, Graduate Mentor Academy (WSU Graduate School), 2004-present.

Member, Graduate Education Council; Chair of Interdisciplinary/Multidisciplinary Program task force, 2005-2006

Member, Search Committee, Dean of College of Engineering, 2005-2006.

Advisory Committee, Materials Science Program, 2006-present.

Selection Committee, Eminent Professor Award, 2011-present.

Dean's Selection Committee, Regent's Professor, 2012-present.

Department or Division

Member, Committee on Instruction, 1969-70.

Chairman, Committee on Instruction, 1970-71, 1977-79.

Member, Search Committee for Chairman of Physics, 1976-77.

Division of Science Physics-Chemistry-Engineering Liaison Committee, 1971-72.

Director, Chemical Physics Undergraduate Research Program, Summers 1971, 1972.

Seminar Leader "Interact 1974," Department of Architecture, WSU.

Physical Sciences-Engineering Subcommittee, Graduate School Research Committee, 1977, 1980,-84, -86, -87.

Member, Physical/Mathematical Sciences Advisory Council, 1983-1986.

Member, College of Engineering Advisory Committee on Tenure and Promotion, 1984, 1989.

Member, Division Technical Services Committee, 1985-present.

Member, Physics Department Undergraduate Studies Committee, 1980-present.

Chairman, Search Committee, Physics Faculty Position, 1984-85.

Member, Search Committee, Chemical Physics Position, 1986-87.

Chairman, Search Committee, Physics Faculty Position, 1988-89.

Member, Search Committee, Physics Faculty Position, 1989-90.

Chairman, Search Committee, Physics WSU Tri-Cities Faculty Position, 1991-92.

Member, Search Committee, Physics Faculty Position, 1993-94

Chairman, Search Committee, Physics Faculty Position, 1997-98

Member, Search Committee, Laboratory Supervisor in Physics, 1998-99.

Advisor, Physics Majors, 2001-present.

Chair, Undergraduate Studies Committee, 2001-present.

Undergraduate Recruiting Coordinator, 2001-present

Chair, Search Committee, Physics Instructor Position, 2002-2003

Member, Search Committee, Physical Chemistry Faculty Position, 2002-2004.

Member, Search Committee, Band Professor of Theoretical Physics, 2002-2003

Member, College of Sciences Tenure and Promotion Committee, three

Member, College of Sciences Committee on Integrated Science, 2004-2010

Member, Honors College Advisory Committee, 2009-2013

COURSES TAUGHT:

Physics for Engineers and Scientists (2 semester course) HONORS

Developed Laboratory Course for above

Introductory Physics (non-calculus)

Physics and Society (see related publication)

Environmental Science (one week/semester--Energy)

Honors Physics (First and Second Semester) with Recitation

Modern Physics

Mechanics

Electricity and Magnetism (2 semester course)

Advanced Undergraduate Laboratory

Solid State Physics

Advanced Atomic Physics

Molecular Spectroscopy

Methods of Spectroscopy and Surface Analysis

Mathematical Physics (2 semester course)

Optoelectronics Laboratory (2 two week experiments)

Freshman Physics Seminar (coordinator and speaker)

Mathematica for the Physical Sciences

Physics and Astronomy Undergraduate Thesis

Seminar courses in Surface Science, Condensed Matter, Materials Physics, Atomistics of Fracture, Defects on Surfaces, Fractals-Chaos in Materials Science, STM and AFM, Electron and Laser Beam Surface Interactions, Teaching Undergraduate Lab, Laser Physics and Applications, Design and Techniques in Experimental Science, Materials Chemistry, Laser Ablation and Desorption, Optical Properties of Solids, Nanotechnology.

Recent Projects:

- Facilitating examination of issues concerning the role of e-Learning in WSU's mission to maintain excellence in undergraduate education; seeking funds for support for WSU faculty to develop experimental courses using e-Learning techniques. Giving talks on-campus examining e-Learning. (2012-present).

- Developing a Hybrid (Blended) Course (all lectures online) with in class tutoring, example problems, quizzes, exams. Course: Physics 342 (Electricity and Magnetism) Spring 2013

- Extending above to Physics 341 Fall 2013.

- Developed a Computerized Tutoring and Quizzing system based on *Mathematica* for serious and challenging mathematical based issues in physics. The student is given some background material and then asked to solve (sometimes only part of) a problem or small derivation that has steps where equations can be entered – the program can determine if the equation is correct; if not the program can offer hints, help, info and offer a re-try. Closely related questions can be offered also. Complete correct solutions can be part of the package if desired – a button takes you there if the instructor so wishes.

Undergraduate Research:

- Major proponent for appointment of a Undergraduate Research Director and University funding of undergraduate research at WSU (2000-present).

- Mentored ~ 1-2 students every year (often in summer). ~80% of the work is published.

PROFESSIONAL SERVICE AND RECOGNITION:

NSF Graduate Fellow, U. Michigan, 1963-65.

Invited Participant-Commission on College Physics Lab Workshop, 1970.

NASA-ASEE Faculty Fellow, 1976.

NSF International Travel Grant (1979).

Holland Travel Grant (1980).

Visiting Distinguished Professor, Japanese National Defense Academy, Yokosuka, Japan, Sept./Oct. 1988

Visiting Distinguished Professor, Instituts für Werkstoffwissenschaften und -technologie,Technischen Universität, Berlin, Oct/Nov. 1990.

Washington State University Distinguished Faculty Address Award, 1991.

3M Corporation Faculty Grant, 1991-94.

Invited Speaker at 16 Gordon Research Conferences, including *Elastomers, Glass, Composites, Adhesion, Particle-Solid Interactions, Laser Ablation, Fractals, Rock Deformation*, and *Tribology*.

Washington State University President's Faculty Excellence Award in Research and Creative Activity, 1993.

Elected Fellow, American Vacuum Society, 1993 (first year AVS Fellows were chosen).

Washington State University College of Sciences Distinguished Research Faculty Award, 1994.

Westinghouse Faculty Award in Materials Science, 1994.

Chair, Gordon Conference on Laser Interactions with Materials, June, 1996.

Visiting Distinguished Professor, Abteilung für Angewandte Physik der Johannes-Kepler-Universität Linz Oct/Nov. 1998.

Visiting Distinguished Professor, Institute for Lasers and Electronics, FORTH, Crete, Greece, Oct. 2000; January, 2001.

Thomas Lutz Teaching Excellence Award, College of Sciences, 2001.

Named Paul A. Anderson Professor of Physics, Washington State University, June, 2002.

Vice-Chair, Gordon Conference on Laser-Surface Interactions, July, 2002.

Elected Fellow, American Physical Society, 2002.

Marian E. Smith Faculty Achievement Award in Teaching, 2003.

The Distinguished Alumni Award, Western Michigan University, 2003.

Chair, Gordon Conference on Laser-Surface Interactions, July, 2004.

Vice-Chair, Gordon Conference on Tribology, June, 2004.

Named Regents Professor, WSU, 2004.

Chair, Gordon Conference on Tribology, 2006.

Elected Fellow, American Association for the Advancement of Science (AAAS), 2005

WSU Sahlin Faculty Excellence Award for Instruction, 2006.

WSU Freshmen Convocation Address, 2006.

William Williams Award, Department of Physics, University of Michigan, 2007.

WSU Eminent Professor Award, 2007.

WSU Freshmen Convocation Address, 2007.

Elected Fellow, Materials Research Society (First year MRS Fellows were chosen), 2008.

WSU Honors College Undergraduate Research Mentor Award, 2008.

Elected Fellow, The International Society for Optics and Photonics (SPIE), 2008.

College of Arts and Sciences Outstanding Career Achievement in Scholarship/Creative Activities Award

Professional Service

Produced Annotated Translation of "Concerning the Quantization of Direction in a Magnetic Field" by W. Gerlach and O. Stern, for Educational Services, Inc., 1966 (for an educational film on the Stern-Gerlach experiment)., 1967.

Director (Board Member) of Pacific Northwest Association for College Physics, 1970-73.

Evaluated several manuscripts for physics texts for publishers.

Presented numerous talks and served on panels throughout Pacific Northwest concerning energy and science and society issues.

Referee for: Surface Science, Applications of Surface Science, Physics Letters A, J. Vac. Sci. Technol., Surface Science Letters, Catalysis Lett., J. Mat. Research, J. of Adhesion, J. Am. Chem. Soc.., Geophysical Research Letters., J. Phys. and Chem. of Solids, Ferroelectrics Rev., Phys. and Chem. of Minerals, J. Phys. D: Appl. Phys., J. Am. Ceramics Soc., J. Trib. Lett., J. Phys. Chem. A and B, Chem. Reviews, Langmuir, Science.

Referee for Proposals: NSF, DOE, ACS-PRF, Research Corporation, NRC, DOD, ISF, NSREC.

Member, Washington Technology Center Advisory Committee, 1984-85.

Presented Program "Physics of Breaking Things" at Washington Young Scientists Conference, May, 1984.

Member, Program Committee, American Vacuum Society National Meeting, 1984-85.

Participant, Peer Review Committee, Physical Sciences Branch, NASA Ames Research Center, 1985.

Member, Pacific Northwest Materials Research Council, 1986-89.

Member, Program Committee, MRS Symposium: Atomic and Molecular Processing of Electronic and Ceramic Materials: Preparation, Characterization, and Properties, August, 1987.

Member, Advisory Board, International Symposium on Exoelectron Emission and Applications, from 1988 to present.

Co-Chair, Topical Sessions on Brittle Fracture, APS March Meeting, New Orleans, 1988.

Member, Program Committee, PNWMC Symposia on "Science of Materials," 1989.

Participant, NASA Workshop on Contamination Problems on Space Station, Nov. 1987.

Participant, ONR and NIST Workshop on Fundamental Concepts in Theory of Fracture, Gaithersburg, 1989.

Symposium Chair: "Fracture and Deformation of Ceramics" Pacific Coast Meeting of American Ceramics Society Meeting, Oct., 1990.

Session Chair at numerous APS March Meetings, American Ceramics Society, American Vacuum Society.

Trustee, Pacific Northwest Chapter of the American Vacuum Society, 1990-91.

Vice-President, Pacific Northwest Chapter of the American Vacuum Society, 1992.

Chairman, Pacific Northwest Chapter of the American Vacuum Society, 1993-94.

Member, Steering Committee for Materials Science--Molecular Sciences Center, Battelle PNL, 1990-91.

Editorial Board, *Journal of Adhesive Science and Technology*, 1992-2002.

Co-Chair, Topical Sessions on "Electronic Processes in Laser Desorption/Ablation," APS March Meeting, Seattle, 1993.

Washington State University President's Faculty Excellence Award in Research and Creative Activity, 1993.

Washington State University College of Sciences Distinguished Research Faculty Award, 1994.

Outside Reviewer, Materials Science, Battelle-PNNL, July, 1994.

Co-Chair, Symposium on Laser Processing of Materials, APS March Meeting, 1995.

Co-Chair, Symposium on Energetic Processes in Thin Film Growth, MRS Spring Meeting, 1995.

Chairman, Gordon Conference on Laser Interactions with Materials, June, 1996.

Member, Organizing Committee, Conference on Laser Ablation III, 1995 and COLA IV, 1997, COLA VI, 1999

Peer Reviewer, EMSL, Battelle-PNNL, June, 1997.

Peer Reviewer, LBNL-Chemical Sciences, March, 1998.

Visiting Professor, Abteilung für Angewandte Physik der Johannes-Kepler-Universität Linz Oct/Nov. 1998.

Co-Chair, Topical Sessions on "Physical Processes in Laser Desorption/Ablation," APS March Meeting, Atlanta, 1999.

Member, User Advisory Committee, EMSL-Pacific Northwest National Laboratory, 2000-2007.

Chairman, Pacific Northwest Division of the American Vacuum Society 2000; annual meeting chair, Sept. 2000.

Visiting Professor, Institute for Lasers and Electronics, FORTH, Crete, Greece, Oct. 2000; January, 2001.

Member, Organizing Committee, SPIE Symposium: Laser Applications in Microelectronic and Optoelectronic Manufacturing V, January, 2001.

Member, Organizing Committee, Advanced Laser Technologies Conference, Constanta, Romania, Sept. 2001.

Co-Chair, Conference on Laser Ablation (COLA VI), Tsukuba, Japan, Oct. 2001

Member, American Vacuum Society Education Committee; Chair of undergraduate research award sub-committee (2001-present).

Co-Chair, Symposium on Non-Linear and Ultra-fast Laser Interactions with Materials, American Physical Society, March, 2002.

Chair, Topical Session on Polymers, SPIE International Symposium on High-Power Laser Ablation, Taos, April, 2002.

Vice-Chair, Gordon Conference on Laser-Surface Interactions, July, 2002.

Chair, Gordon Conference on Laser-Surface Interactions, July, 2004.

Vice-Chair, Gordon Conference on Tribology, August, 2004.

Member, Organizing Committee, SPIE Symposium: Laser Applications in Microelectronic and Optoelectronic Manufacturing VIII, January, 2003, 2004.

Reviewer, NSF National Nanotechnology Infrastructure Network (NNIN) Program, 2003.

Member, Organizing Committee, International Conference on Photo-Excited Processes and Applications, Sept. 2004, Leece, Italy.

Member, Organizing Committee, Conference on Laser Ablation (COLA VIII), Banff, Canada, September, 2005.

Chair, Gordon Conference on Tribology, 2006.

Member, Advisory Committee, Center for Nanophase Materials Sciences, ORNL, 2006-presesnt.

Member, DOE Workshop on Materials under Extreme Conditions; Lead Section on Laser materials Interactions, June, 2007.

Member, Organizing Committee, Conference on Laser Ablation (COLA IX), Tenerife, September, 2007.

Co-Chair, Topical symposium on Non-Linear and Ultra-fast Laser Interactions with Materials at the American Physical Society March Meeting in New Orleans, March, 2008.

Co-Chair, Topical symposium entitled Non-Linear and Ultra-fast Laser Interactions with Materials at the American Physical Society March Meeting in Pittsburgh, March, 2009.

Chair of Tutorial Committee, Conference on Laser Ablation (COLA X), Singapore, September, 2009.

Co-Director: Isola di San Servolo Venezia – Italy, 2nd International School on *Laser-surface interactions for new materials production: tailoring structure and properties*, July, 2010.

Co-Organizer: Conference on Laser Ablation 2011, Playa del Carmen, Mexico, November, 2011

Co-Organizer: OSA Sessions: Light-Matter Interactions and Materials Processing 2012, 2013

Co-Organizer SPIE Conference: Laser Applications in Microelectronic and Optoelectronic Manufacturing, January, 2012, 2013, 2014

Co-Organizer SPIE Conference: Synthesis and Photonics of Nanoscale Material, January, 2012, 2013

Organizing Committee, Isola di San Servolo Venezia – Italy, 2nd International School on *Laser-surface interactions for new materials production: tailoring structure and properties*, July, 2012.

Organizing Committee, International Conference on Laser Ablation (COLA), 2013.

Organizing Committee, International Conference on Photo-Excited Processes and Applications, October, 2014.

RESEARCH ACTIVITY AND FUNDING:

Dr. Dickinson's research has been in the general areas of materials physics, materials chemistry, surface science, and physics education.

Recent research has focused on:

a) laser modification of surfaces, laser-ablation and laser induced desorption mechanisms in polymers and ceramics, single crystal inorganics;

b) understanding of tribochemistry in relation to nanoscale wear in solutions and using tribology to control and manipulate recrystallization from solutions; mechanisms of wear and nanometer surface modification.

c) use of photoemission to understand defect production at surfaces due to radiation, mechanical stimulation.

d) transient current measurements due to contact (tribo-currents) and fracto-emission (the emission of particles during fracture and tribological loading of materials) from crystalline materials, ceramics, polymers, and composites.

e) development of Computer based computer tutoring and testing of calculus level beginning physics students.

f) development of e-Learning tools and courseware for a WSU two semester upper division physics course (Electrodynamics) taught in a hybrid format.

Funding for this work has averaged $200K-$400K/year for ~32 years from sources including: NSF, DOE-BES, DOE-EMSP, ONR, AFOSR, NASA, NATO, NIH, Boeing, McDonnell Douglas, Goodyear, Dow, IBM, 3M, Tektronix, Westinghouse-Hanford Co., Granville-Phillips Co., Murdock Charitable Trust, Sandia National Laboratories, Battelle Pacific Northwest Laboratories, Washington Technology Center. Camille and Henry Dreyfus Foundation, Northwest Academic Computing Consortium.

INVITED TALKS:

Presented over 360 invited talks at national and international meetings, government and industrial laboratories, and universities in the U.S. Japan, and Europe.

RECENT INVITED TALKS:

"Photonic Defect Generation in Wide Bandgap Single Crystals: The Road to Ruin," Chemistry Department, WSU, January, 2005

"Nanotribology—Rubbing on a Small Scale," Chemistry and Chemical Engineering, Pennsylvania State University, February, 2005.

"There's the Rub: Tribochemistry at the nanometer size scale," 11th International Conference on Fracture," Turin, Italy, March, 2005.

"Tribochemical Studies at the Nanometer Scale: synergisms of mechanical and chemical forces," Plenary Speaker, International Nanotribology Workshop, Porquerolles, France, June, 2005.

"Tribochemical studies at the nanometer scale: synergisms of mechanical and chemical forces," Goldschmidt Conference, Moscow, ID, June, 2005

"Single Asperity atomic force microscope studies of the Chemical Mechanical Planarization of silicate glasses", World Tribology Conference, Washington DC, September, 2005.

Invited Lecturer- NATO ADVANCED SCHOOL (ASI) "**PHOTON-BASED NANOSCIENCE & TECHNOLOGY:** ***From Atomic Level Manipulation to Materials Synthesis & Nanobiodevice Manufacturing"***at Sherbroke Canada (19-29 September 2005)

"The WSU On line Quizzing and Tutoring System," WSU Colloquium, October, 2005.

"Fundamental studies in Tribochemistry using Atomic Force Microscopy," 2006 International CMP-MIC Conference, Fremont, CA, March, 2006

"Synergisms between mechanical and chemical stimulation of surfaces at the Nanometer Size Scale,", March Meeting of the American Physical Society, March, 2006

"Atomic Scale Tribochemistry," International Conference on Frontiers in Boundary Lubricating Films, Lyon, France, May 2006

"New Directions in UV Laser Interactions with Materials," DOE Workshop on Applications of Lasers to Energy Problems, May, 2006

"Fundamental issues of sub-threshold material removal by laser irradiation", SPIE International Conference on High-Power Laser Ablation, Taos New Mexico, May, 2006

"Synergisms between mechanical and chemical stimulation of surfaces at the Nanometer Size Scale," Los Alamos National Laboratory, May, 2006

"Material removal by laser irradiation from insulating materials," International Conference on Photo-Excited Processes and Applications, U. Virginia, Charlottsville, Virginia, September 2006

"Fast lasers and short wavelengths: implications for laser processing of materials," The International Conference on Advanced Laser Technologies, Brasov, Romania, Sept. 2006.

"The One-Two Punch: Synergisms arising from combined mechanical and chemical stimuli at the nanometer size scale," 5th European Science Foundation Invited Workshop on Nanotribology, Antalya, Turkey, Sept. 2006.

"Experiments with ultrashort pulses at ultrashort wavelengths," Paul Scherrer Institut, Villingen, Switzerland, Sept. 2006

"Synergisms between mechanical and chemical stimulation of surfaces at the Nanometer Size Scale," Dept. of Materials Science, University of Tennessee, October, 2006

"Advances in laser desorption from wide bandgap materials," Materials Science Division, Oak Ridge National Laboratory, October, 2006.

"The One-Two Punch: Synergisms arising from combined mechanical and chemical stimuli at the nanometer size scale," Keynote Address in New Breakthroughs in Nanotechnology Series, Oak Ridge National Laboratory, October, 2006.

"The One-Two Punch: Synergisms arising from combined mechanical and chemical stimuli at the nanometer size scale," Chemical Engineering Dept., Washington State University, October. 2006.

Synergisms arising from combined mechanical and chemical stimuli at the nanometer size scale," Chemical Engineering Dept., ASTM International Annual Meeting, Orlando, FL, December, 2006.

"Fast lasers and short wavelengths: implications for laser processing of materials," University of Michigan, Dept. of Materials Science, December, 2006.

"Synergisms arising from combined radiative and chemical stimuli at the nanometer size scale," The William L. Williams Distinguished Lecture in Physics, University of Michigan, December, 2006.

"The One-Two Punch: Consequences of Combining Stimuli to Materials – Mechanical and Chemical," Dept. of Physics, University of Michigan, December, 2006.

"The WSU Online Question and Tutoring System (WSU Q&T): A tool for teaching Science and Mathematics," School of LS&A, University of Michigan, December, 2006.

"The One-Two Punch: Consequences of Combining Mechanical and Chemical Stimuli to Materials" School of Mechanical and Materials Engineering, Washington State University, January, 2007.

"Laser Interactions with Wide Bandgap Materials," WSU Dept. of Physics and Astronomy, January, 2007.

"Consequences of Combining Stimuli to Materials – Mechanical and Chemical: How does one polish single crystal Si?," Chemical Sciences, ORNL, March, 2007

"Synergisms arising from combined mechanical and chemical stimuli at the nanometer size scale," Nanotechnology Center, Vanderbilt Unversity, March, 2007.

"Fast lasers and short wavelengths: implications for laser processing of materials," University of Michigan, Dept. of Physics, Vanderbilt University, March, 2007.

"Synergisms between mechanical and chemical stimulation of surfaces at the Nanometer Size Scale,", Spring Meeting of the Materials Research Society, San Francisco, CA, April, 2007.

New studies of Nano-Tribo-Chemical modification of surfaces," 6th European Science Foundation Invited Workshop on Nanotribology, Santa Margherita di Pula, Sardinia, Italy, May, 2007.

"Laser induced Particle Emission from Wide bandgap Materials", Dept. Physics, University of Idaho, October, 2007

"A New Look at Laser Interactions with Wide Bandgap Materials," SPIE-International Society for Optical Engineering Photonics West, San Jose, CA January, 2008

"Kissing surfaces with hard UV photons: the consequences of photo-dissociation of near-surface molecular bonds in solids," 3rd Pacific International Conference on Applications of Lasers and Optics, Beijing, China, April, 2008

"Laser desorption at the threshold for plasma formation" SPIE- International Society for Optical Engineering High-Power Laser Ablation Conference, VII, Taos, NM, April 2008.

"Laser modification of surfaces," Department of Energy Workshop on High Sensitivity Methods of Materials Analysis, Annapolis, Maryland, May, 2008.

"Vacuum UV laser interactions with wide bandgap materials," Pacific Northwest National Laboratory, July, 2008.

The One Two Punch: Lasers + chemical stimulation of surfaces," Workshop on Extreme Excitation Processing of in Materials U. Nebraska, August, 2008

"Curiosity – the key to discovery", Plenary Speaker to College of Pharmacy "Exploring Health Careers" (~40 minority student work shop). August, 2008

"The use of nanometer scale stresses to modify surfaces", WSU Physics Colloquium, September, 2008.

"Fundamental issues concerning material removal by laser irradiation from insulating materials", the opening keynote address at the 6th International Conference on Photo-Excited Processes and Applications (ICPEPA 2008), Sapporo, Japan, September 2008.

"Lasers as directed energy sources: capabilities and applications in agriculture", Biological Systems Engineering Colloquium, WSU, October, 2008.

"How Lasers can modify materials in useful ways," Workshop on Industrial Applications of Lasers, ESI Corporation, Portland Oregon, November, 2008.

"Incoming! Incoming! (Laser Beam): Fundamentals of Laser Materials Interactions," WSU Physics Colloquium, September, 2009

"Fundamental studies of UV laser interactions with single crystal ZnO, 10th International Conference on Laser Ablation, Singapore, November, 2009.
"Investigation of laser surface modification of solids: Mechanisms, Opening Tutorial Lecture at the 10th International Conference on Laser Ablation, Singapore, November, 2009.

"A new look a the production of excited states created by laser irradiation of surfaces,", Workshop on Extreme Excitation Processing of in Materials U. Nebraska, March, 2010

"Laser desorption below the threshold for plasma formation" International Society for Optical Engineering High-Power Laser Ablation Conference, VIII, Taos, NM, April 2010.

"Laser modification of surfaces," Department of Energy Workshop on High Sensitivity Methods of Materials Analysis, Baltimore, Maryland, May, 2010.

"Important issues in laser materials interactions and relevant applications," 3 Lectures at the Venice School on Laser Interactions with Materials, July 2010.

"The Enormous Little World of Nanotechnology", Plenary Speaker at Nanotechnology for Tomorrow, at U. Wisconsin-Whitewater, October, 2010.

"The Enormous Little World of Nanotechnology", Washington State University-Tri-Cities, November, 2010.

"Laser interactions with single crystal ZnO, Pacific Northwest National Laboratory, November, 2010.

"Fundamental Studies of Excimer laser interactions with single crystal ZnO, SPIE-LASE 2011, San Francisco, January 2011.

"Fundamental Studies of Excimer laser interactions with single crystal ZnO, U. Idaho Physics Department, February, 2011.

"The Enormous Little World of Nanotechnology", Washington State University-Vancouver, Jan., 2012.

"Fundamental Studies of Excimer laser interactions with single crystal ZnO", International Conference on Photo-Excited Processes and Applications (ICEPA-8), Rochester, NY, August, 2012.

"The one two punch: examples of synergisms at surface of solids", DARPA Workshop on Novel Methods of Processing Materials, Breckenridge, CO, January, 2013.

CONTRIBUTED PRESENTATIONS:

Over 420 contributed papers presented, including 2-5 talks a year each at APS March Meeting, American Vacuum Society, The International Society for Optical Engineering (SPIE), American Ceramics Society, MRS Fall or Spring Meetings, and ACS National Meetings.

PUBLICATIONS:

(All are peer reviewed except those marked with *)

1. J. C. Zorn, T. C. English, J. T. Dickinson, and D. A. Stephenson, "Molecular Beam Measurement of the Hyperfine Structure of RbF," J. Chem. Phys. 45, 3731 (1966).

2. J. C. Zorn, D. A. Stephenson, J. T. Dickinson, and T. C. English, "Triple Resonance Method for Molecular hfs Spectroscopy: Measurements in CsF," J. Chem. Phys. 47, 3904 (1967).

3. R. H. Hammerle, J. T. Dickinson, R. G. VanAusdal, D. A. Stephenson, and J. C. Zorn, "The Hyperfine Structure of Thallium Chloride," J. Chem. Phys. 50, 2086 (1969).

4. J. T. Dickinson, D. A. Stephenson, and J. C. Zorn, "Hyperfine Structure of Thallium Chloride," J. Chem. Phys. 50, 2086 (1969).

5. D. A. Stephenson, J. T. Dickinson, and J. C. Zorn, "The Hyperfine Structure of Thallium Iodide and an Upper Limit for the Electric Hexadecapole Moment of the Iodine Nucleus," J. Chem. Phys. 53, 1529 (1970).

6. J. T. Dickinson, James M. J. M. Lockhart, and J. C. Zorn, "Use of a Metastable Atom Probe for the Study of Electron Dynamics," Am. J. Phys. 39, 993 (1971).

7. J. T. Dickinson, "The Falling Meter Stick," Physics Teacher 9, 336 (1971).

8. J. T. Dickinson, "Rolling Spool Experiment," Physics Teacher 10, 210 (1972).

9. J. T. Dickinson, "'Millergrams' in the Lab," Physics Teacher 10, 39 (1972).

10. J. T. Dickinson, "Experiments in Physics 201-202," Washington State University (1971); Revised approximately every two years.

11. J. H. Craig, Jr. and J. T. Dickinson, "Versatile System for the Study of Molecular Beam Scattering," J. Vac. Sci. Technol. 10, 403 (1973).

12. J. H. Craig, Jr. and J. T. Dickinson, "Scattering of Metastable Molecules from a Gas-Covered (100) Surface of Germanium," J. Vac. Sci. Technol. 10, 319 (1973).

13. J. T. Dickinson, "Voltage Follower for RC Circuit Experiment," Am. J. Phys. 41, 745 (1973).

14. J. T. Dickinson, "Transportation and Energy Conservation in the Pacific Northwest," Pacific Northwest Science 48, 145 (1974).

*15. L. W. Swanson, J. T. Dickinson, and D. R. McNeely, "Fabrication and Surface Characterization of Composite Refractory Compounds Suitable for Thermionic Converters," NASA Report No. CR-2668 (1975).

*16. J. T. Dickinson, "Energy Conservation in Transportation," Proceedings of WSU Thermal Power Conference (1975).

17. L. W. Swanson and J. T. Dickinson, "Single Crystal Work Function and Evaporation Measurements of LaB_6," Appl. Phys. Lett. 28, 578 (1976).

*18. L. W. Swanson, N. Eror, and J. T. Dickinson, "Impregnated Cathode Studies," Tektronix Corp. Report (July 1975).

19. J. T. Dickinson, "Liquid Nitrogen in a Balloon," Physics Teacher 15, 361 (1977).

20. J. T. Dickinson and R. J. Madix, "The Mechanism of Methanol Formation and Other Reactions Following Formaldehyde Adsorption on Ni(110), Internat, J. Chem. Kinetics 10, 871 (1978).

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