

## CURRICULUM VITAE

W. Robert Midden  
November 2021

### I. PERSONAL DATA

#### *Work Address*

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#### *Home Address*

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### II. EDUCATION AND TRAINING

Degree	Year	Institution	Field
B.S.	1974	St. Johns University	Chemistry
Ph.D.	1978	The Ohio State University	Biochemistry

#### **Postdoctoral Training**

1978 - 1979 Postdoctoral Fellow, The Ohio State University, Department of Chemistry  
1980 - 1981 Postdoctoral Fellow, The Johns Hopkins University, Department of Environmental Health Sciences

### III. PROFESSIONAL EXPERIENCE

1981 - 1983 Research Associate, The Johns Hopkins University, Department of Environmental Health Sciences, Baltimore, Maryland  
1983 - 1987 Assistant Professor, The Johns Hopkins University, Department of Environmental Health Sciences  
1989 May-Aug Visiting Scientist, Laboratoire Acide Nucleique, Département de Recherche Fondamentale sur La Matière Condensée, Service D'Études des Systèmes et Architectures Moléculaires, Centre D'Études Nucléaires, Grenoble, France  
1987 - 1995 Assistant Professor, Department of Chemistry, Center for Photochemical Sciences, Bowling Green State University, Bowling Green, OH  
1998 - 2001 Associate Director, Chapman Learning Community, BGSU  
1999 - 2006 Director, "Partners in Context & Community" \$4.2 million grant from the Teacher Quality Enhancement Program of the U.S. Department of Education  
2001 - 2006 Director, PCC Residential Learning Community, BGSU  
2004 - 2008 Director, Chapman Community at Kohl, BGSU  
1996 - 2019 Associate Professor, Department of Chemistry, Center for Photochemical Sciences, BGSU  
2008 - 2019 Director, Northwest Ohio Center of Excellence in Math & Science Education (AIMS), BGSU  
2014 - 2019 Director, Academic Investment in Mathematics and Science, BGSU  
2014 - 2019 Assoc. Vice Provost for Experiential and Innovative Learning, BGSU  
2019 – present Adjunct Research Professor

### IV. HONORS AND AWARDS

1989-93 Nominated each year for BGSU Master Teacher Award  
1993 BGSU Master Teacher Award

- 1993 Nominated with Drs. D.C. Neckers, L.J. Freidman, P.F. Haas, G.S. Silverman, T.B. Cobb & N. Tarasova for the American Association for the Advancement of Science Award for International Scientific Cooperation
- 1994 BGSU Student Services Faculty Excellence Award
- 1994 Elected member of Omicron Delta Kappa, National Leadership Honor Society
- 1997 Elected Honorary Member of the Golden Key Honor Society
- 1999 Selected as the BGSU Chapter's Honorary Inductee to the Mortarboard Honor Society
- 2008 Public Health Impact Award by the Wood County Health Department for work improving the health of Wood County
- 2008 Nominated for Miguel Ornelas Award by the BGSU Human Relations Commission for enhancing positive human relations at BGSU

V. **PROFESSIONAL ACTIVITIES**

a. **Societies**

- 1981 - 2002 American Society of Photobiology
- 1975 - present American Chemical Society
- 1981 - present American Association for the Advancement of Science
- 1989 - present Sigma Xi Honorary Scientific Research Society (BGSU Chapter Vice President 1991-92, President 1992-93)
- 1994 - present Omicron Delta Kappa Honorary Leadership Society
- 1997 - present Golden Key Honory Society
- 1999 - present Mortarboard Honor Society

b. **Committees**

- 1981 - 1983 JHU Library Committee - Center for Occupational and Environmental Health
- 1980 - 1983 JHU Health & Safety Committee - Center for Occupational and Environmental Health
- 1983 - 1985 JHU Library Committee - School of Hygiene and Public Health
- 1985 JHU Ad Hoc Faculty Search Committee - Division of Environmental Health Engineering
- 1986 JHU Computer Resources Committee - Department of Environmental Health Sciences
- 1986 JHU Ad Hoc Committee for the Development of the Kellogg Interdisciplinary Doctoral Program in Environmental Health
- 1986 - 1987 JHU Curriculum Committee - School of Hygiene and Public Health
- 1988 - 1990 BGSU Arts & Sciences Teacher Education Advisory Committee
- 1989 - 90,97-98 BGSU Admissions Advisory Committee
- 1989 - 1990 BGSU Chemistry Dept. Freshman Curriculum Review Committee
- 1989 - 1991 BGSU Math & Science Education Advisory Committee
- 1991,92,95 BGSU Selection Committee for the Graduate Student Senate Charles E. Shanklin Award for Research Excellence
- 1992 BGSU Governor's Institute Summer Workshop Advisory Committee
- 1993 BGSU Chemistry Department Educational Technology Assessment Committee
- 1991 - 1994 BGSU Alumni Undergraduate Research Award Selection Committee
- 1993,94 BGSU Ohio Board of Regents Graduate/Professional Fellowship Selection Committee
- 1994 BGSU Graduate Teaching Awards Selection Committee
- 1995 BGSU Task Force on Olscamp Hall Teleconferencing and Related Classroom Activities
- 1995 BGSU Sigma Xi Graduate Student Research Award Selection Committee
- 1992 - 1995 BGSU General Education Committee, Chairman 1993-95
- 1994 - 1996 BGSU General Education Natural Sciences Development Group
- 1996 - 1997 Presidential Steering Committee for BGSU Task Force on Teaching and Learning
- 1996 - 1997 BGSU Task Force on Teaching and Learning
- 1987 - 1997 BGSU Center for Photochemical Sciences
- 1993 - 1998 Wood County Local Emergency Planning Committee
- 1994 - 1998 BGSU Faculty Senate
- 1997 - 1998 BGSU Special Advisory Board for the Chapman Learning Community

V. **PROFESSIONAL ACTIVITIES - Committees (Cont.)**

1996 - 1999	BGSU Center for Environmental Programs Advisory Committee
1997 - 2000	BGSU College of Arts & Sciences Dean's Advisory Council (Math & Natural Sciences Representative)
1992 - 2004	BGSU Chemistry Department Undergraduate Committee (chair 1996-97)
1995 - 2001	Undergraduate Council (College of Arts & Sciences Representative for Math & Natural Sciences)
2001	Search Committee for the Director of the BGSU Admissions Office
2002 - 2003	Outstanding Contributor to Graduate Education Awards Committee
1999 - 2004	Teacher Quality Success Initiative
1998 - 2008	Chapman Learning Community Advisory Group
1993 - 2008	BGSU Representative on the Board of Oceans and Atmosphere, National Association of State Universities and Land Grant Colleges, Washington, DC
2004 - 2008	Interdisciplinary Directors Curriculum Committee
2004 - 2008	Math & Science Education Doctoral Committee Task Force
2004 - 2005	Math & Science Education Research Enhancement Initiative Task Force
2005 - 2006	Chair of the Presidentially Appointed BGSU Ad Hoc Service Learning Committee
2006 - 2007	Presidentially Appointed Ad Hoc Retention Improvement Task Force
2007 - 2008	Provost Search Committee
2008 - 2009	Provost Advisory Committee
2008 - 2009	College of Arts & Sciences Dean Search Committee
2009	Distinguished Thesis Award Committee
2008 - 2010	Centennial Celebration Planning Committee
2008 - 2010	Centennial Celebration Academic Subcommittee
2010 - 2011	Faculty Senate
2010 - 2011	Faculty Senate Executive Committee
2012	Learning Communities Strategic Planning Committee
2012	Chair of the Ohio Board of Regents Faculty Committee to Recommend Remediation-Free, College-Ready Expectations for High School Science
2008 - present	Ohio Junior Science and Humanities Awards Committee
2001 - present	Academic Investment in Math and Science Advisory Board
2012 - present	Portage River Basin Council - a regional body of the Toledo Metropolitan Area Council of Governments

many others since 2012

VII. **INVITED SEMINARS & LECTURES**

1980	The Johns Hopkins University, Department of Pharmacology, Baltimore, Maryland. "Glyoxalase Model Systems."
1981	The Johns Hopkins University, Department of Pharmacology, Baltimore, Maryland. "Singlet Oxygen Generation for Solution Kinetics."
1983	The Johns Hopkins University, Department of Environmental Health Sciences, Baltimore, Maryland. "Photosensitization, Active Oxygen and DNA Damage."
1984	The Johns Hopkins University, Department of Environmental Health Sciences, Baltimore, Maryland. "Furocoumarin-Photosensitized Reactions of Unsaturated Fatty Acids."
1986	The Johns Hopkins University, Department of Environmental Health Sciences, Baltimore, Maryland. "A New Strategy for the Design of Non-Carcinogenic Phototherapy and Photoprotection: Chemical Modification of Lipids by Psoralens."
1986	The Johns Hopkins University, Department of Environmental Health Sciences Science Day, Laurel, Maryland. "Conclusive Determination of Chemical and Biological Characteristics of Reactive Oxygen."
1986	Argonne National Laboratories, Division of Biological and Medical Research, Argonne, Illinois, "Recent Advances in Measuring the Chemical and Biological Characteristics of Singlet Oxygen."

VII. **INVITED LECTURES** (Cont.)

- 1986 10th Anniversary Johns Hopkins In-House Cell Biology Symposium, Baltimore, Maryland, "Bioeffects of Pure, Exogenous Singlet Oxygen: Cytotoxicity and Mutagenicity to Salmonella Bacteria."
- 1987 International Symposium on Solar Carcinogenesis, Johns Hopkins University, Laurel, Maryland, "Chemistry of Solar Radiation-Damaged DNA Bases: Current Knowledge and Analytical Techniques."
- 1988 Cleveland State University Chemistry Department, Cleveland, OH, "The Photochemistry of Tanning Agents (Furocoumarins)."
- 1988 Ashland College, Chemistry Department, Ashland, OH, "The Medical and Biological Chemistry of Photosensitization."
- 1988 University of Toledo, Chemistry Department, Toledo, OH "The Cytotoxicity and Mutagenicity of Singlet Oxygen."
- 1988 Ohio State University Biochemistry Department, Columbus, OH, "The Biological and Chemical Characteristics of Singlet Oxygen or Dr. Jekyll to Mr. Hyde With a Single Electron Flip."
- 1989 Bowling Green State University Biology Department, "The Role of Singlet Oxygen in Human Disease."
- 1989 Institut für Organische Chemie der Universität Würzburg, Würzburg, West Germany, "Determining the Chemical and Biological Characteristics of Singlet Oxygen."
- 1989 Centre D'Etudes Nucléaires, Grenoble, France, "The Cytotoxicity and Mutagenicity of Singlet Oxygen."
- 1990 Calvin College Chemistry Department, Grand Rapids, Michigan, Feb., "Photochemical Determination of DNA Conformation"
- 1990 Hope College Chemistry Department, Holland, Michigan, Feb., "Photochemical Determination of DNA Conformation"
- 1990 Muhlenberg College Chemistry Department, Allentown, Pennsylvania, March, "Biochemistry of Singlet Oxygen"
- 1990 Johns Hopkins University Environmental Health Sciences Department, Baltimore, Maryland, March, "Photochemical Determination of DNA Conformation"
- 1991 Mendeleev Institute of Chemical Technology, Moscow, CIS, "Reduction of the Threat of Global Warming by New Approaches to Energy Conservation"
- 1991 Illinois Institute of Technology Chemistry Department, Chicago, Illinois, Sept., "Photochemical Determination of Nucleic Acid Conformation."
- 1991 Ball State University Chemistry Department, Muncie, Indiana, Oct., "Photochemical Determination of Nucleic Acid Conformation."
- 1991 University of Puerto Rico Chemistry Department, Río Piedras, Puerto Rico, Dec. 2, "Reactions of Psoralens with Fatty Acids: A New Biological Target of PUVA Therapy."
- 1992 Biophysics Department, Moscow State University, Moscow, CIA, Feb. 12, "Research Opportunities in Photochemical Sciences"
- 1992 Mendeleev Institute of Chemical Technology, Moscow, CIS, Feb. 13, "Photochemical Determination of Nucleic Acid Conformation & Analysis of the Molecular Mechanisms of the Biological Effects of Singlet Oxygen."
- 1992 Central Regional Meeting of the American Chemical Society, Columbus, OH, May 27-29, "Photochemical Determination of Nucleic Acid Conformation: Pyrimidine Photohydration and Photocycloaddition."
- 1993 Beloit College, Wisconsin, April 23, "Oxygen! Can't Live With It, Can't Live Without It: Mechanisms of Singlet Oxygen Pathology."
- 1994 National Meeting of the American Society for Photobiology, Symposium on Photochemistry and Photobiology of the Genetic Material, Scottsdale, AZ, June 24-28, "Photochemical Determination of Nucleic Acid Conformation."
- 1994 NSF Workshop on Physical Organic Chemistry, Logan, OH, July 27-31, "Photochemical Determination of Nucleic Acid Conformation."
- 1995 Chemistry Department, Northern Michigan University, Marquette, MI, Mar. 24, "Photochemical Determination of Nucleic Acid Conformation."
- 1995 Chemistry Department, Muskingum College, New Concord, OH, Mar. 27, "The Biochemistry of Singlet Oxygen."

## VII. INVITED LECTURES (Cont.)

- 1995 Chemistry Department, University of Cincinnati, Cincinnati, OH, Apr. 6, "Photochemical Determination of Nucleic Acid Conformation."
- 1996 Chemistry Department, Bowling Green State University, Sep. 11, "CompuWebChem: Computers, the Internet and Chemistry at Bowling Green State University."
- 1996 Chemistry Department, John Carroll University, Oct. 9, "Is Oxygen Carcinogenic? Bacterial Mutagenicity and Cytotoxicity of Electronically Excited Singlet Molecular Oxygen."
- 1997 213th American Chemical Society National Meeting, San Francisco, CA, Apr., "Determining Learning Objectives for Undergraduate Chemistry Programs."
- 1998 Chemistry Department, St. Vincent College, Latrobe, PA, Mar. 6, "The Biological Chemistry of Singlet Oxygen."
- 1998 Chemistry Department, Oakland University, Rochester, MI, Oct. 21, "Does Oxygen Cause Cancer?"
- 2001 Keynote Address for Worthington Service Learning Symposium, Worthington, OH, Aug. 7, "A Century Towards Justice: Service Learning for All Disciplines."
- 2002 Campus Compact Teacher Education Summit, Bowling Green State University, Bowling Green, OH, May 16, "Building Sustainable Partnerships."
- 2006 Keynote Address for Arts & Sciences Colloquium of the Associated Colleges of Illinois, Des Plaines, IL, Sep. 29, "Realizing the Synergism of Collaboration."
- 2007 Pre-Conference Workshop for the 12<sup>th</sup> Annual National Learning Communities Conference Nov. 7-9, Indianapolis, IN with Hansen, Michele J. and Huerta, Juan Carlos "Implementing Comprehensive Assessment Strategies for Learning Communities."
- 2008 Learning Communities Symposium sponsored by the Metropolitan Community Colleges of Kansas City, MO, March 27-28 with Brett Holden "Building an Interdisciplinary Set of Service Learning Courses from the Ground Up."
- 2008 Keynote Address for Ronald E. McNair Post-Baccalaureate Achievement Program Summer Closing, Bowling Green State University, August 6, "Striving & Thriving: Secrets to Success in the Sciences."
- 2010 Northwest Ohio Environmental Health Association Fall Conference, Sandusky, OH, October 21-22, 2010, "The Impact of CAFO Manure Application on Surface Water Quality in the Portage River Watershed."

## VIII. EDITORIAL ACTIVITIES

Reviews for the following journals:

- 1981 Cancer Research  
1984 Biochemistry  
1982,83 Photobiochemistry and Photobiophysics  
1982,84 Analytical Biochemistry  
1988,89 Journal of Biological Chemistry  
1988,91 Radiation Research  
1990 International Journal of Radiation Biology  
1992 Environmental & Molecular Mutagenesis  
1993 Biochimica et Biophysica Acta  
1992,95 Nucleic Acids Research  
1995-97 Journal of the American Chemical Society  
1989-92,96 Journal of Photochemistry and Photobiology, B: Biology  
1981-01, 2011 Photochemistry and Photobiology  
1997-present Journal of Chemical Education

Reviews for the following grant agencies

- 1989,91 Research Corporation  
1984 NIH, National Institute of Environmental Health Science, ad hoc panel  
1981 Environmental Protection Agency

## VIII. EDITORIAL ACTIVITIES (Cont.)

1991 NIH, Metallobiochemistry Study Section external review  
1999 The Science & Technology Center of the Ukraine  
1984,89,95,00 Petroleum Research Foundation of the American Chemical Society  
1988,95,01,10,14 National Science Foundation

### Book Reviews & Evaluations:

"Bioorganic Photochemistry," H. Morrison, Ed., John Wiley & Sons, 1990  
Book proposed by Jacques Kagan on Organic Photochemistry for CRC Press, Boca Raton, FL, 1991  
"Chemistry for Allied Health," Williams, West Publishing Company, 1992  
"Chemistry for Today: General, Organic & Biochemistry," Seager & Slabaugh, West Publishing Co., 1993  
"Chemistry & Life," Hill, Feigl, & Baum, Macmillan Publishing Co., 1993  
"The Extraordinary Chemistry of Ordinary Things," Carl H. Snyder, Wiley & Sons, 1995 for *The Ohio Journal of Science*  
New text in development for General, Organic & Biochemistry, Worth Publishers, Inc., 1995  
New text in development text for General, Organic & Biochemistry, Prentice Hall Publishing Co., 1995  
"Biochemistry for the Medical Sciences: An Integrated Case Approach," S. J. Higgins, A. J. Turner, E. J. Wood, Longman Scientific & Technical, 1996 for *The Ohio Journal of Science*  
"Essentials of Biochemistry," Persell, et al., Worth Publishers, Inc. 1997  
"Biochemistry for the Medical Sciences: An Integrated Case Approach," S. J. Higgins, A. J. Turner, E. J. Wood, John Wiley & Sons, Inc. 1997  
"Understanding Chemical Principles for Allied Health Chemistry & Preparatory Chemistry," Peter J. Krieger, Prentice Hall 1997  
"General, Organic & Biochemistry," McMurry & Castellion, Prentice Hall 1997  
"Principles and Applications of Inorganic, Organic and Biological Chemistry," Caret, Denniston & Topping, WCB/McGraw Hill 1998  
"Learning Communities in Context: A Practical Guide to Sustaining Change, Expanding Support, and Improving Programs," Jodi Levine Laufgraben and Nancy S. Shapiro, Jossey-Bass, San Francisco, CA 2003

## IX. TEACHING

### a. Courses & Workshops

EHS 18C02 Molecular Mechanisms of the Bioeffects of Environmental Agents I: 1981-87 (JHU)  
EHS 18D02 Molecular Mechanisms of the Bioeffects of Environmental Agents II: 1981-87 (JHU)  
  
CHEM 109/115 Elementary Chemistry: 1988-1998 (BGSU)  
CHEM 116/117 Elementary Organic & Biochemistry: 1988-1998 (BGSU)  
CHEM 199 Introduction to Elementary Organic Chemistry: 1988-1993 (BGSU)  
CHEM 306 Organic Chemistry: 1997, 1999 (BGSU)  
CHEM 308 Basic Biochemistry: 1993-2003 (BGSU)  
CHEM 309 Elementary Biochemistry Laboratory 1993-2003 (BGSU)  
CHEM 313 Special Topics in Chemistry: 1997-present (BGSU)  
CHEM 413 Independent Study and Research in Chemistry: 1988-1999 (BGSU)  
CHEM 596 Advanced Laboratory: 1990-1999 (BGSU)  
CHEM 599 Thesis Research: 1990-2000 (BGSU)  
PCS 652 Photochemical Sciences Graduate Research Discussions: 1990-1999 (BGSU)  
PCS 702 Photochemistry & Photophysics 2: 1990-1999 (BGSU-team taught)  
PCS 705 Lab Methods in Photochemical Sciences (coordinator-team taught): 1992 (BGSU)  
Honors A300 Global Warming: A Call for International Cooperation: 1991 (BGSU co-organizer-team taught)  
RESC 210 Journeys of the Imagination: 1997-1999 (BGSU)

RESC 220 Journeys Into Science: 1998-2008 (BGSU)  
RESC 470 Independent Study: 1998-present (BGSU)  
Governor's Institute Summer Science Workshop for Talented & Gifted High School Students (organized and taught): 1991-92  
Upward Bound Science Workshop for Minority High School Students: 1992-95  
BGSU Summer Freshman Program Chemistry Lectures: 1992-97  
Youth Enrichment Seminars Summer Science Workshop for Highly Capable Junior High Students: 1996-97  
BGSU Precollege Enrichment Program Summer Science Workshop: 1996-present  
NSF Tapestry K-6 Science Teacher Education Program: 1998-99  
EDCI 490 Independent Study in Science Education Research: 2001  
"The Research Revolution: Science and the Shaping of Modern Life" A series of six presentations and public for a on various topics involving science and technology to stimulate public interest and awareness of these crucial issues ranging from global warming to genetic modification of foods and privacy of genetic information: Jerome Library, BGSU: Spring term, 2003.  
Member of Panel for Administrator Professional Development on Creating Cross-College and External Partnerships at the Third Annual Chairs & Directors Summer Conference, Bowling Green State University, Huron, OH: July 31: 2006  
EDTL 6800/6580 (cross-listed): Inquiry in Science & Mathematics Education-Development ,2008-2009 (BGSU)  
EDTL 6581 Inquiry in Science & Mathematics Education-Implementation, 2010 (BGSU)

**b. Thesis/Dissertation Proposal & Defense Committees (PhD & Masters)**

Charles Noss	1984	PhD
Roland Owens	1985	PhD
Bruce Hrnee	1985	PhD
Shwu Bin Lin	1986	PhD
Stacey Yuhasz	1987	PhD
Julie K. Buffenbarger	1987	PhD
Kushlani Gunawardena	1987	MSc
Jingshi Zhou	1987	MSc
Tando Ntozakhe	1988	MSc
Kathleen Specht	1988	PhD
Eric Hildebrand	1989	PhD
Stanley Wilson	1989	MSc
Shanthini Nagarajah	1990	MSc
Feng Luo	1990	MSc
V. Thiviyathan	1990	MSc
Daihong Guo	1991	MSc
Jianhong Ma	1991	MSc
Zhihong Liu	1991	MSc
S. Thevananther	1991	MSc
Julie Bufenbarger	1993	MSc
Petr Pavlik	1993	MSc
Bo Li	1993	MSc
Li Fan	1993	MSc
Raed Dwaidaree	1993	MSc
Xiaoqin Wu (Sociology)	1994	PhD
Theresa Kruger-Heckert (Psychology)	1994	PhD
Marcia Rozevink (Ed Admin)	1995	PhD
Zhengdong Fei	1995	MSc
Kestutis Bendinskas	1996	PhD
Alexey G. Nikitin (Biology)	1997	PhD

**IX. TEACHING - Thesis Defense Committees (Cont.)**

Jarrett Aguilar	1997	PhD
Ekem Efuet (Biology)	1998	PhD
Bolun Hu	1998	MSc
Nicole Perdue	1998	MSc
Shiranthi Keppetipola	1999	MSc
Robin Lasey	1999	MSc
Michael Howick	1999	MSc
Michael Hommema	1999	MSc
Chad Romans (English Literature)	1999	PhD
F. Lynne Merk (Clinical Psychology)	1999	PhD
Marcus Chibucos (Biology)	2005	PhD
Gang Zhang (Biology)	2007	PhD
Zeynep Kroçer (Biology)	2010	PhD
Yeji Kim (Music)	2012	DMA
Farida Sidiq (Biology)	2014	PhD
Yuri Shtarkman (Biology)	2015	PhD
Astha Malik (Biology)	2015	PhD
Ramadha Piyadi Gamage (Statistics)	2017	PhD
Amy Kramer (Biology)	in progress	PhD
Armando Hernandez (Photochem Sciences)	in progress	PhD

**c. Postdoctoral Research Assistants**

Thomas A. Dahl                      1987-88    “Further Studies of Bacterial Inactivation by Singlet Oxygen”

**d. PhD Dissertations Completed or In Progress\***

Thomas A. Dahl	1987	“Bacterial Cytotoxicity and Mutagenicity of Singlet Oxygen” (codirected with P. Hartman, JHU)
Kathleen Specht	1988	“Photochemical Formation of Psoralen-Lipid Adducts”
Kestutis Bendinskas	1996	“Combinatorial Selection of Photochemically Active Synthetic DNA Oligonucleotide Antiviral Agents”
Jarrett Aguilar	1997	“Salt Dependence of Quantum Yields of Deoxydinucleotide Photoproducts and of Circular Dichroism Spectra of dTpdT and dTpdC”

**e. Masters Theses Completed or In Progress\***

Zhihong Liu	1991	“Photochemical Determination of DNA Conformation: Pyrimidine Photohydration”
Jianhong Ma	1991	“Photochemical Determination of DNA Conformation: Pyrimidine Photocycloaddition”
Raed Dwaidaree	1993	“Protection of Bacteria from Inactivation by Singlet Oxygen”
Zhengdong Fei	1995	“Determination of the Dependence of Photoproduct Formation on Ionic Strength in the DNA Dinucleotide, TpT”

**f. Undergraduate Research**

William McGowan	1988	BGSU CHEM 413 “Confirmation of the Intermediacy of Singlet Oxygen in the Separated-Surface-Sensitizer System”
Kathleen LaRoche	1989	BGSU CHEM 413 “Singlet Oxygen Quenching in Bacteria by a Lazaroid Antioxidant Drug”



Thomas M. Bennett	1990	NSF Research Experience for Undergraduates "Photooxidation of Deoxyguanosine Sensitized by Tryptophan"
Andrew Neckers	1991	NSF Research Experience for Undergraduates "Photochemical Analysis of the Conformation of RNA 3-Way Junctions"
Karen Dougall	1991	NSF Research Experience for Undergraduates "Theoretical Analysis of DNA UV Photochemistry"
Laura Applebaum	1991	NSF Research Experience for Undergraduates "Chemiluminescent Detection of Singlet Oxygen"
Amy Zitzelberger	1992	BGSU CHEM 413 "Development and Testing of 'Top-Down' Methods for Teaching High School Chemistry"
Julie Moldenhauer	1992	NSF Research Experience for Undergraduates "Photochemical Detection of Z-DNA"
Nicole Kline	1992	NSF Research Experience for Undergraduates "Inhibition of bacterial inactivation by singlet oxygen"
Timothy Koogan	1993	BGSU CHEM 413 "Optimizing Singlet Oxygen Generation"
Christopher J. Thomson	1993	BGSU CHEM 413 "Chemical Protection of Bacterial from Inactivation by Singlet Oxygen"
Kimberly Sprouse	1993	NSF Research Experience for Undergraduates "Mechanism of Protection of <i>Sarcina lutea</i> Bacteria from Singlet Oxygen by a Superoxide Dismutase Mimic"
Dan Diblasi	1993	BGSU CHEM 313 "Molecular Dynamics Analysis of DNA Oligonucleotide Conformation"
Christine Phillbrook	1994	NSF Research Experience for Undergraduates "Ionic Strength Dependence of Photoproduct Formation in the DNA Dinucleotide, dTpdC"
Jill Slane	1995	NSF Research Experience for Undergraduates "Base Sequence of DNA Oligonucleotides Selected For Specific Binding to a Critical Region of the Lambda Virus Genome"
Xi Fu	1996	NSF Research Experience for Undergraduates "Testing Novel Antiviral Agents Prepared With Combinatorially Selected DNA Oligonucleotides"
Keith Hayes	1996	NSF Research Experience for Undergraduates "Solvent Dependence of DNA Photochemical Quantum Yields"
Mary Bolin	1996	"Effects of Polychlorinated Biphenyls (PCB) on Insulin and Serum Glucose Levels in Rats" Research & thesis to satisfy requirements for graduation with Honors
Brian Axe	1997	BGSU CHEM 413 "Chemical Protection of Bacterial from Inactivation by Singlet Oxygen"
Philana Williams	1997	BGSU CHEM 313 "Lab Demonstrations and Exercises for Secondary School Students on the Properties and Characteristics of Gases"
Carrie Rathsack	1998	BGSU CHEM 313 "Multimedia Computer Tutorial for Secondary School Students on Concentrations Calculations and Applications"
Chad Bechstein	1998	BGSU CHEM 313 "Web-Based Virtual Reality 3D Visualization of Biomolecules for Use in Secondary School Chemistry Instruction"
Mike Brewster	2001	BGSU CHEM 313 "Discovery of Chemistry Principles Through Hands-On Chemistry Lab Explorations"

More than 50 students since 2001, 15 during the 2016-17 academic year

## X. CONSULTING & OUTREACH

1988	Synergistic Laboratory, Libby, Montana – development of process for disposal of waste materials
1989	Fresh Products, Inc., Toledo, Ohio – development of soap alternatives

X. **CONSULTING** (Cont.)

- 1989, 2006-10 Calderon Automation, Inc., Bowling Green, Ohio – review and analysis of patent for process to convert waste to energy
- 1988-91 Ricerca, Inc., Painesville, Ohio – development of UV irradiation system for studying environmental degradation
- 1998 Judge for State Science Fair
- 1998-1999 Rossford Public School District – directed the revision of the science curriculum for grades K-12
- 2004 University of Missouri at Kansas City, Site Visit – Optimizing plans for new residential learning communities

XI. **PUBLICATIONS**

a. **Journal and Monograph Articles**

1. Midden, W.R.; Chang, C-H.; Deetz, J.S.; and Behrman, E.J.: "Monomer-Dimer Phenomena in Oxo-osmium(VI) Complexes." **Inorg. Chem.** **18**: 1364-70 (1979).
2. Midden, W.R.; and Behrman, E.J.: " Yeast Tyrosine Transfer-RNA Labeled with Osmium at the Isopentenyl Adenosine Residue." **FEBS Letters**, **103**: 300-2 (1979).
3. Midden, W.R.; Chang, C-H.; Clark, R.L. and Behrman, E.J.: " Transesterification of oxo-Osmium(VI) Ligand Complexes of Thymine Derivatives." **J. Inorg. Biochem.**, **12**: 93-105 (1980).
4. Galas, A.M.R.; Hursthouse, M.B.; Behrman, E.J.; Midden, W.R.; Green, G. and Griffith, W.P.: "The X-Ray Crystal Structures of the Oxo-Osmium Complexes,  $\text{OsO}_2(\text{OH})_2\text{phen}$  and  $\text{Os}_2\text{O}_6\text{py}_4$ ." **Trans. Metal Chem.**, **6**: 194-5 (1981).
5. Hine, J.; King, R.S-M.; Midden, W.R. and Singa, A.: "Hydrolysis of Formamide at 80oC and pH 1-9." **J. Org. Chem.**, **46**: 3186-9 (1981).
6. Midden, W.R. and Wang, S.Y.: "Singlet Oxygen for Solution Kinetics: Clean and Simple." **J. Amer. Chem. Soc.**, **105**: 4129-4135 (1983).
7. Wang, S.Y. and Midden, W.R: "Photodynamic Action on Nucleic Acids and Their Constituents." **Studia Biophysica**, **94**: 7-12 (1983).
8. Wang, S.Y.; Midden, W.R.; Decarroz, C. and Cadet, J.: "Mechanisms and Products of Photosensitized Degradation of Nucleic Acids and Related Model Compounds." **Israel J. Chem.**, **23** 420-429 (1983).
9. Joshi, P.C.; Wang, S.Y.; Midden, W.R.; Voituriez, L.; Cadet, J.: "Heterodimers of 8-Methoxypsoralen and Thymine." **Photobiochem. Photobiophys.**, **8**: 51-60 (1984).
10. Kittler, L.; Midden, W.R.; Wang, S.Y.: "Interactions of Furocoumarins with Subunits of Cell Constituents. Photoreaction of Fatty Acids and Aromatic Amino Acids with Trimethylpsoralen and 8-Methoxypsoralen." **Studia Biophysica** **114(1-3)**: 139-148 (1986).
11. Dahl, Thomas A.; Midden, W. Robert; Hartman, Philip E.: "Pure Singlet Oxygen Cytotoxicity for Bacteria." **Photochem. Photobiol.** **46**: 345-52 (1987).
12. Midden, W.R.; Dahl, T.A.; Hartman, P.E.: "Cytotoxicity But No Mutagenicity in Bacteria With Externally Generated Singlet Oxygen," **Proceedings of SPIE-The International Society for Optical Engineering, New Directions in Photodynamic Therapy** , **847**: 122-126 (1987).

## XII. PUBLICATIONS & PRESENTATIONS

13. Midden, W.R.: "Chemical Mechanisms of the Bioeffects of Furocoumarins: The Role of Reactions with Proteins, Lipids, and Other Cellular Constituents," Ch. 4 in **Psoralen-DNA Photobiology, Vol. II**, F. Gasparro, Ed., CRC Press: Boca Raton, FL, pp. 1-49 (1988).
14. Specht, K.; Kittler, L. and Midden, W.R.: "A New Biological Target of Furocoumarins: Photochemical Formation of Covalent Adducts with Unsaturated Fatty Acids." **Photochem. Photobiol.****47**: 537-541 (1988).
15. Dahl, T.A.; Hartman, P.E.; Midden, W.R.: "Mitigation of Singlet Oxygen ( $^1\Delta_g$  O<sub>2</sub>) Damage in Biological Systems," **Anticarcinogenesis and Radiation Protection**, National Bureau of Standards, Gaithersburg, MD, pp. 109-113 (1988).
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### b. Dissertation

Midden, W. Robert: "Specific Single-Site Osmium(VI) Heavy-Atom Labeling Of Yeast Tyrosyl Transfer-RNA, The Relative Rate Retardation Effects Of Some Organic Bases On The Glycol Exchange Reaction Of The Osmium(VI)Oxy Thymidine Glycol Bipyridyl Complex, And Isolation Of Monomeric Osmium(VI)Oxy Phenanthroline Complexes" Edward Behrman, Advisor, The Ohio State University, 1978, Columbus, Ohio, USA.

### c. Presentations

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25. Midden, W. Robert; Dahl, Thomas A.; Hartman, Philip E.: "Cytotoxicity But No Mutagenicity in Bacteria With Externally Generated Singlet Oxygen," Symposium of the SPIE on New Directions in Photodynamic Therapy, Cambridge, MA, October (1987).
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29. Midden, W.R.; Klaunig, J.E.: "Testing the Antipsoriasis Potential of Psoralen-Lipid Photoproducts," 10th International Congress on Photobiology, Jerusalem, Israel, Oct-Nov. (1988).

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31. Midden, W.R.; Liu, Z.; Willems, G.-J.: "Cytosine Photohydration is a Sensitive Conformational Probe of Base Stacking in DNA," 20th Annual National Meeting of the American Society for Photobiology, Marco Island, FL, June 20-24, **Photochem. Photobiol.** **55S**: 50S (1992).
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39. Klein, T.D.; Midden, W.R.: "The Chapman Learning Community as an Example of Best Learning Practices," American Association for Higher Education National Assessment Conference, Cincinnati, OH June 13-17 (1998).
40. Midden, W.R.; Klein, T.D.; Holden, B.; Duffy, K.; Gordon, D.; Mendoza, R.: "Chapman Learning Community: The First Year in Collaboration," Sixth International Conference on Residential Colleges and Living/Learning Programs, University of Vermont, Burlington, VT, Oct. 15-17 (1998).
41. Midden, W.R.: "Making Science Useful to Non-science Students: An Interdisciplinary General Education Science Course Focusing on Medicine," Sixth International Conference on Residential Colleges and Living/Learning Programs, University of Vermont, Burlington, VT, Oct. 15-17 (1998).
42. Midden, W.R.; Klein, T.D.; Richardson, S.M.; Craft, W.; Hinds, C.; Bushman, D.: "The Costs of Learning Communities: What Are They & Are They Worth It?" 85th Annual Meeting of the Association of American Colleges and Universities, San Francisco, CA, Jan. 28-30, 1999.

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43. Midden, W.R.: "Journeys Into Science: Making Science Useful for Non-Science Majors," Kaleidoscope National Meeting on Science Education, Washington DC, Oct, 1999.
44. Midden, W.R.: "Experiential Learning in Pre-service Teacher Training," poster at AAC&U National Meeting on "Rethinking Science Literacy" Charleston, SC, Apr 13-15, 2000.
45. Huether, C.A.; Shachter, A.; Midden, W.R.; Hopkins, N.; Moran, S.: "Teaching Science Through Complex Public Issues: New Curricular Models" AAC&U National Meeting on "Rethinking Scientific Literacy in the Age of Diversity and Specialization" Charleston, SC, Apr 13-15, 2000.
46. Midden, W.R.; Klein, T.D.: "Helping Students Understand the Value of Liberal Learning in a Residential Learning Community" 40<sup>th</sup> Annual Conference of the Association for General & Liberal Studies on "Liberal Education in the 21<sup>st</sup> Century" in Chicago, IL, Nov 2-4, 2000.
47. Klein, T.; Midden, W.R.: "Growing Pains & Persistent Gains: Chapman Learning Community's Early Years" 5<sup>th</sup> Annual Learning Communities Conference sponsored by Delta and Rainey Harper Colleges in Frankenmuth, MI, Nov. 15-17, 2000.
48. Midden, W.R.: "Helping Non-Science Students Recognize the Value of Science in Their Lives" AAC&U National Conference on "Learning Communities: Strategies for Strengthening Connections, Competence, and Commitments" in Providence, RI Mar 1-3, 2001.
49. Midden, W.R.; Klein, T.: "The Chapman Learning Community" a presentation in the session on "Seeing the Whole: Learning & Community in the Residential Setting" facilitated by David L. Schoem & Jodi Levine, AAC&U National Meeting on "Learning Communities: Strategies for Strengthening Connections, Competence, and Commitments" in Providence, RI Mar 1-3, 2001.
50. Midden, W.R.: "Learning Science by Doing Science" poster presented at the 6<sup>th</sup> Annual Learning Communities Conference sponsored by Delta and Rainey Harper Colleges in Chicago, IL Nov 7-9, 2001.
51. Midden, W.R.; Schoem, D.L.: "Benefits of Residential Learning Communities—The *Student* Perspective" facilitation of panel of students at the 6<sup>th</sup> Annual Learning Communities Conference sponsored by Delta and Rainey Harper Colleges in Chicago, IL Nov 7-9, 2001.
52. Schoem, D.L.; Midden, W.R.; Minor, F.; Levine, J.: "Critical Issues in Living/Learning Communities" joint presentation by Univ. of Michigan, BGSU & Univ. of Missouri at the 6<sup>th</sup> Annual Learning Communities Conference sponsored by Delta and Rainey Harper Colleges in Chicago, IL Nov 7-9, 2001.
53. Klein, T.; Midden, W.R.: "From Classroom to Learning Community: Critical Issues & Collaborative Practice" joint presentation by members of CLC at the 6<sup>th</sup> Annual Learning Communities Conference "Beyond 2001: The Odyssey of Inclusion" sponsored by Delta and Rainey Harper Colleges in Chicago, IL Nov 7-9, 2001.
54. Midden, W.R.; Gordone, D.: "Service Learning for Urban Education Reform" The Seventh Annual Conference on Living-Learning Programs and Residential Learning Communities in Columbus, Ohio Nov. 17-19, 2002.
55. Midden, W.R.: "Engaging Service Learning in the Natural Sciences" The Seventh Annual Conference on Living-Learning Programs and Residential Learning Communities in Columbus, Ohio Nov. 17-19, 2002.
56. Midden, W.R.: "Combining Research and Teaching in a General Education Natural Science Curriculum" Association of American Colleges and Universities Conference, Powerful Learning Communities: Research Informing Practice April 10-12, 2003, Phoenix, AZ.



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57. Berns, R.; Drew, M.; Gordon, D.; Midden, W.R.: "Partners in Context & Community: Improving Teacher Quality Through Partnerships that Integrate intense Field Experiences with Innovative Classwork" Teacher Quality Enhancement Project Directors Annual National Conference, Dec. 3-6, 2003, Los Angeles, CA.
58. Midden, W.R.: "Guiding Principles for Scientific Research in Education" Teacher Quality Enhancement Project Directors Annual National Conference, Dec. 3-6, 2003, Los Angeles, CA.
59. Midden, W.R.; Klein, T.; Courtney, J.: "Learning Structures and Strategies that Best Support Student Academic Success" 8<sup>th</sup> Annual Conference on Learning Communities and Collaboration: *Student Learning & Engagement* Nov 7, 2003, Indianapolis, IN.
60. Berns, R.; Erickson, P.; Midden, W.R.: "An Innovative Online Model of Excellence for the Professional Development of University Faculty" Association of Teacher Educators National Conference: Promoting Quality and Professionalism, Feb 16, 2004, Dallas, TX.
61. Midden, W.R.: "Scientifically-Based Education Research: Implications for Evaluation of Teacher Quality Enhancement Projects", Association of American Colleges and Universities "Network for Academic Renewal: Pedagogies of Engagement," leading Roundtable Discussion, Apr. 2, 2004, Washington, DC.
62. Midden, W.R.: "Combining Real Research with Innovative Teaching and Community Service," Association of American Colleges and Universities "Network for Academic Renewal: Pedagogies of Engagement," leading Roundtable Discussion Apr 17, 2004, Chicago, IL.
63. Midden, W.R.: "Assessment of Student Academic Achievement Optimized for Learning Communities," 9<sup>th</sup> Annual Conference on Learning Communities and Collaboration, Nov. 11-13, 2004, Kansas City, MO.
64. Midden, W.R.: "Assessment of Higher Order Cognitive Skills: Knowing How, Knowing When and Knowing Why is as Important as Knowing What," 8<sup>th</sup> Biennial Conference on Living-Learning Programs and Residential Colleges, Nov. 15-17, 2004, Bloomington, IN.
65. Midden, W.R.; Berns, R.G.: "Improving teacher quality through partnerships that integrate intense field experiences with innovative classwork," U.S. Department of Education, Teacher Quality Enhancement Conference, Nov. 15-18, 2004, Phoenix, AZ.
66. Midden, W.R.: "Service Learning and Community Involvement Increase Student Motivation, Engagement, and Achievement in a General Education Natural Science Course," BGSU Research Symposium, Nov. 3-4, 2005, Bowling Green, OH.
67. Midden, W.R.: "First Year Undergraduate Non-Science Majors Can Do Real Science Research" COSMOS Northwest Ohio Science and Mathematics Education Symposium, Nov. 5, 2005, Toledo, OH.
68. Midden, W. R.: "Realizing the Synergism of Collaboration," Keynote Address for Arts & Sciences Colloquium of the Associated Colleges of Illinois, Sep. 29, 2006, Des Plaines, IL.
69. Midden, W.R.: "Learning Chemistry through Hands-On Inquiry in a Gen Ed Course for Non-Majors," Symposium Honoring Prof. Thomas H. Kinstle, Bowling Green State University, Sept. 30, 2006, Bowling Green, OH.
70. Midden, W.R.; Holden, B.: "BGSU's Chapman Residential Learning Community: An RLC Exemplar," 6<sup>th</sup> Annual Ohio First Year Summit, Oct. 13, 2006, Cincinnati, OH.
71. Midden, W.R.; Mahaffey, C.: "Service Learning at BGSU: Two Examples," 6<sup>th</sup> Annual Ohio First Year Summit, Oct. 13, 2006, Cincinnati, OH.

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72. Velotta, T.; Midden, W. R.: "Bridging the Cultural Gap: Collaboration of Residence Life and Academic Faculty," National Conference of Living-Learning Programs and Residential Colleges, Oct. 15-17, 2006, Syracuse, NY.

73. Midden, W.R.: "Assessment of Higher Order Cognitive Skills," 11<sup>th</sup> Annual National Learning Communities Conference, Nov. 2-4, 2006, Bay City, MI.

74. Juelich, B.; Midden, W.R.: "Collaboration and Co-Curricular Programming in a Living Learning Community" OCPA/OASPA Conference, Feb. 1-2, 2007, Worthington, OH.

75. Midden, W.R.: "Real Research in a General Education Science Course for First Year Undergraduate Non-Science Majors" Enriching the Academic Experience of College Science Students Conference, May 22-24, 2007, University of Michigan, Ann Arbor.

76. Midden, W.R.: "Assessment of Higher Order Cognitive Skills in Residential Learning Communities" 2007 National Conference of Living Learning Programs, Oct. 15-17, 2007, St. Louis, MO.

77. Midden, W.R.; Orlando, M.: "Collaboration of Residence Life Staff and Academic Faculty: The Synergism of RA & Faculty Connections" 2007 National Conference of Living Learning Programs, Oct. 15-17,, St. Louis, MO.

78. Midden, W.R.; Elola, V.: "The Influence and Impact of Returning Students to a First Year Learning Community" 2007 National Conference of Living Learning Programs, Oct. 15-17, St. Louis, MO.

79. Midden, W.R.; Holden, B.: "Building an Interdisciplinary Set of Service Learning Courses from the Ground Up" 12<sup>th</sup> Annual Learning Communities Conference" Nov. 7-9, 2007, Indianapolis, IN.

80. Midden, W.R.: "Assessment of Higher Order Cognitive Skills in a General Education Natural Science Course" 12<sup>th</sup> Annual Learning Communities Conference" Nov. 7-9, 2007, Indianapolis, IN.

81. Hansen, M. J.; Huerta, J. C.; Midden, W.R.: "Implementing Comprehensive Assessment Strategies for Learning Communities" Pre-Conference Workshop: 12<sup>th</sup> Annual Learning Communities Conference" Nov. 7-9, 2007, Indianapolis, IN.

82. Midden, W.R.; Holden, B.: "Building an Interdisciplinary Set of Service Learning Courses from the Ground Up" Metropolitan Community Colleges of Kansas City Learning Communities Open House, March 27, 2008, Kansas City, MO.

83. Midden, W.R.: "Rubric-Based Assessment of Student Academic Achievement in Service-Learning Courses in Learning Communities" 13<sup>th</sup> Annual Learning Communities Conference Nov. 13-15, 2008, Kansas City, MO.

84. Hansen, M. J.; Huerta, J. C.; Chism, L.; Williams, G.; Midden, W.R.: "Comprehensive Assessment Strategies for Understanding the Impacts of Learning Communities: New Issues & Directions" 13<sup>th</sup> Annual Learning Communities Conference Nov. 13-15, 2008, Kansas City, MO.

85. Midden, W.R.: "Undergraduate Research Coupled with Service Learning in General Education Science Courses" Northwest Ohio Symposium on Mathematics and Science Teaching, Nov. 15, 2008, Toledo, OH.

86. Midden, W.R.; Spishak, D.: " Undergraduates Evaluate the Impact of CAFOs on Water Quality in the Portage River Watershed" Meeting the Challenges of Great Lakes Stewardship: SENCER Approaches, March 27-28, 2009, Cleveland, OH.

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87. Midden, W.R.: "How to Do Real Science Research with Students in Grades 3-16" Northwest Ohio Symposium on Science, Technology, and Mathematics Teaching, Nov. 7, 2009, Perrysburg, OH.

88. Worch, E.A.; Partin, M.L.; Haney, J.J.; Underwood, E.; Nurnberger-Haag, J.; Scheuermann, A.M.; & Midden, W.R. "Yes I Can: The Contributions of Motivation on Course Performance among Biology Non-majors" Association for Science Teacher Education, Jan. 16, 2010, Sacramento, CA.

89. Midden, W.R. "The Impact of CAFO Manure Application on Surface Water Quality in the Portage River Watershed" Northwest Ohio Environmental Health Association, Oct. 22, 2010, Sandusky, OH.

90. Midden, W.R. "How to Use Video Conferencing Technology for Virtual Field Trips to Enrich Student Learning in Times of Fiscal Constraints" Tech Tools for Education Fall Conference, Northwest Ohio Educational Technology, October 10, 2011, Bowling Green, OH.

91. Midden, W.R. "Impact of Service Learning on Student Engagement and Achievement in at the College and Grade School Levels," Session on 'Service Learning in Chemistry' at the International Conference on Chemistry Education, July 13-18, 2014, Toronto, CA.

92. Midden, W.R. "Increased Student Engagement, Motivation and Achievement in a General Education Science Course for First-Year Undergraduate Non-Science Majors," Session on 'Authentic Research Experiences in the First and Second Year Curriculum' at the Biennial Conference on Chemistry Education, August 3-6, 2014, Grand Rapids, MI.

93. Midden, W.R.; Gunner, J. "Citizen Science Research as the Context for Learning Elementary School Science" National Science Teachers Association Orlando Area Conference, November 6-8, 2014, Orlando, FL.

94. Sirum, K; Partin, M.; Midden, W.R.; Zhou, Y. "A Simple, Objective Peer Observation of Teaching Protocol is a Significant Component of an Assessment Approach for Measuring the Impact of an Undergraduate Learning Assistant Program on Student Success in Gateway Courses," John N. Gardner Institute Gateway Course Experience Conference, April 3-5, 2016, Atlanta, GA.

95. Brooks, K.; Midden, W.R. "Intentional Academic and Social Engagement Opportunities for First-Year Students" John N. Gardner Institute Gateway Course Experience Conference, April 3-5, 2016, Atlanta, GA.

96. Midden, W.R.; Worch, E. "Improving Student Motivation, Engagement & Learning by Integrating Student Participation in Science Research Across the Curriculum," APLU Science and Mathematics Teaching Imperative/STEM Education Centers 2016 National Conference, June 8-9, 2016, San Antonio, TX.

97. Midden, W.R. "Achieving Civic Engagement by Integrating Real Research into a General Education Chemistry Course," 253rd National Meeting of the American Chemical Society, April 2-6, 2017, San Francisco, CA.

98. Midden, W.R.; Solohin, E. "Extremely High Dissolved Phosphorus from No-Till Fields without Fertilizer Incorporation" 60th Annual Conference on Great Lakes Research: From Cities to Farms: Shaping Great Lakes Ecosystems, International Association for Great Lakes Research, May 15-19, 2017, Detroit, MI.

99. Midden, W.R. "80% Four-Year Graduation Rate for Under-Represented Minority Students in STEM Degree Programs" Ohio Project Kaleidoscope Regional Conference: Evidence-Based STEM Education: Teaching and Student Success, May 20, 2017, Findlay, OH.

## **XII. PUBLICATIONS & PRESENTATIONS**

100. Midden, W.R. "80% Four-Year Graduation Rate for Under-Represented Minority Students in STEM Degree Programs" 2017 National STEM Education Centers Conference, Association of Public and Land Grant Universities, June 23-24, 2017, New Orleans, LA.

101. Midden, W.R. "Underrepresented Minority Students Can Succeed at Very High Levels in Undergraduate STEM Degree Programs When Financial Need is Fully Met," 2017 Louis Stokes Midwest Center of Excellence Conference, October 6-8, 2017 Indianapolis, IN.

102. Midden, W.R.; Karabenick, S.A.; Smith, P.S.; Steiner, J. "The effect of student participation in citizen science research as a central part of classroom instruction on motivation, engagement, and learning," The National STEM Education Research and Practice Summit, October 16-17, 2017 Purdue University, West Lafayette, IN.

103. Midden, W.R. "Student Motivation and Learning in a General Education Science Course Greatly Improved by Participation in Real Science Research Addressing a Community Need" National STEM Education Centers Conference 2018, Association of Public and Land Grant Universities, June 6-18, 2018, Columbus, OH.

104. Guannel, M.; Kulesza, A.; Midden, W.R.; "Impacts of Service Learning on Student Engagement with Science: Examples from Introductory Courses at Three Higher Education Institutions" National STEM Education Centers Conference 2018, Association of Public and Land Grant Universities, June 6-18, 2018, Columbus, OH.

105. Sherman, H.; Midden, W.R.; O'Hara, K.; Maynard, K. "The Ohio STEM Learning Network" National STEM Education Centers Conference 2018, Association of Public and Land Grant Universities, June 6-18, 2018, Columbus, OH.

106. Midden, W.R. "Integration of real science research as the core context of a general education science course" Glass City Chemistry Conference of the Toledo Section of the American Chemical, June 14-16, 2018, Toledo, OH.

107. Midden, W.R. "iEvolve with STEM: Going Beyond Project-Based Learning: Student Participation in Real Science Research Integrated into Classroom Instruction" Ohio ACTE Connections to Education Conference, July 23-25, 2018, Columbus, OH.

108. Midden, W.R. "Roundtable Discussion: Student and Community Engagement Led by a Regional STEM Hub", Ohio ACTE Annual Connections to Education Conference, July 23-25, 2018, Columbus, OH.

109. M. H. Jayan S. Karunarathna, W. Robert Midden, and Alexis D. Ostrowski. "Photocontrolled release fertilizer system using iron(III) carboxylate photochemistry for sustainable agriculture", Materials Research Society Fall Meeting (SB03-Smart Materials, Devices and Systems for Interface with Plants and Microorganisms), Boston, December 1 – 6, 2019.

110. M. H. Jayan S. Karunarathna with Kerri M. Bailey, Zachery R. Hatten, W. Robert Midden and Alexis D. Ostrowski. "Iron (III)-Carboxylate Photochemistry in Polysaccharide Hydrogels for a Green Chemistry Approach to Nutrient Recycling", ACS Spring 2020 National Meeting and Expo (SciMeeting) and Excellence in Graduate Polymer Research Symposium, online.

## **XII. GRANT PROPOSALS**

"Application of Basic Studies to Understanding Human Risk," NIH via subcontract with Johns Hopkins University, 9/1/87-8/30/90, \$90,000.

XII. **GRANTS** (Cont.)

"A New Approach to the Development of Antiproliferative and Anticancer Drugs," BRSG, 10/1/87-4/30/88, \$2,100. Awarded.

"Specific and Sensitive Singlet Oxygen Detection," BGSU Faculty Research Committee Major Grant July 1, 1988, \$10,000.

"Graduate Research Assistant Support for Faculty Research Projects," Dec. 18, 1987, \$8,000 awarded.

"Chemical Mechanism of Human Disease," OBOR Research Challenge Program, Dec., 1987, \$10,319 awarded.

"Chemistry of Furocoumarin Reactions with Lipids," NIH, Feb. 1, 1988, \$349,952. Approved, but not funded.

"Antiviral Photosensitization Therapy," National Institutes of Health, Feb., 1988, \$1,782,013, approved but not funded.

"Sensitive and Specific Singlet Oxygen Detection," Research Corporation, April, 1988, \$15,000 awarded.

Coauthor of National Science Foundation Undergraduate Instrumentation Proposal, 1989, \$113,425 awarded.

"Photochemical Determination of DNA Conformation," Ohio Board of Regents Research Challenge Grant, 1990, \$10,000 awarded.

"Selection of Antiviral and Anticancer Agents by Differential Binding," BGSU Faculty Research Committee, \$3,000 awarded, 1992-1993.

Graduate Research Assistant Award, BGSU Graduate College, \$12,000 awarded, 1992-1993.

"Partners in Context & Community" W.R. Midden, PI; Julia McArthur & William Armaline, CoPIs, \$4.2 million, U.S. Department of Education, Title II Teacher Quality Enhancement Program, funded 10/1/00-9/30/06.

"Graduate Math and Science Teaching Education Reform" W.R. Midden, PI; S. Van Hook & Lena Ballone, Co-PIs, \$1.35 million, National Science Foundation, GK-12 Program, funded 1/1/2003-12/31/2005.

"A WCHD-BGSU Partnership to Address Community Concerns About Factory Farms" W.R. Midden & Brad Espen, Co-PIs; \$5,000, PCA/CITE, BGSU, 12/4/06, funded 2007-2008.

"Science and Mathematics Education in Action" W.R. Midden, PI; \$3 million, University System of Ohio, submitted 5/7/08, funded 2009-2014.

"The Northwest Ohio STEM Consortium: Creating New Learning Platforms to Advance STEM Learning for All Students" W.R. Midden, PI, \$999,494, Ohio Board of Regents, submitted 11/20/10, funded 1/1/11-6/30/11.

"SET-GO: Science, Engineering, & Technology Gateway Ohio" Moira van Staaden, PI; W.R. Midden, Co-PI; Anne Bullerjahn, Co-PI, \$2,263,620, National Science Foundation, 6/15/2008-5/31/2013.

"Granting Access to Mathematics and Science" W.R. Midden, PI; Moira van Staaden, Co-PI; T. Carter Gilmer, Co-PI, \$599,864, National Science Foundation, submitted 8/12/08, funded 2009-2014.

## XII. GRANTS (Cont.)

“Granting Access to Mathematics and Science: Cohort II” W.R. Midden, PI; Moira van Staaden, Co-PI; T. Carter Gilmer, Co-PI, \$598,693, National Science Foundation, submitted 9/14/09, funded 2010-2015.

“Building Ohio’s Sustainable Energy Future” – BGSU Subaward, W.R. Midden, PI; P. Anzenbacher, Co-PI., \$987,344, University System of Ohio, 2010-2014.

“iEvolve: Inquiry and Engagement to Invigorate and Optimize Learning for Everyone” W.R. Midden, PI; Eric Worch, Co-PI; James Gunner, Co-PI; Mitchell Magdich, Co-PI; Tom Tucker, Co-PI, \$7,279,141 National Science Foundation Mathematics-Science Targeted Partnership program, initial award amount \$2,774,992 (total grant = \$7,279,141), 9/15/12-12/31/19.

"Manure Treatment Feasibility Study: Environmental & Economic Impact of Water, Waste, & Wastewater Treatment Processes" W.R. Midden, PI, \$92,310 for BGSU subaward from the Village of Ottawa, Local Government Innovation Fund, 12/17/12-12/17/14.

"Regional Water and Sanitary Sewer Feasibility Study" W.R. Midden, PI, \$98,563 for BGSU subaward from the Village of Ottawa, Local Government Innovation Fund, 12/17/12-12/17/14.

“Evaluation of wastewater treatments to reduce nutrient transport from land application of dairy manure: baseline study” W.R. Midden, PI; Donna Francy, Co-PI, \$230,154, Ohio Water Development Authority, 1/1/15-12/31/16.

“Survey of Local Sources of Nutrients in the Upper Portage River Watershed” W.R. Midden, PI of a BGSU sub-award as part of a collaborative project with other investigators at BGSU, Heidelberg University, Ohio State University, and the U.S. Department of Agriculture, \$37,889, funded by the Ohio Department of Higher Education through the Ohio Sea Grant, 5/1/15-4/30/17.

“Evaluation of wastewater treatments to reduce nutrient transport from dairy manure land use: Data collection” W.R. Midden, PI; Donna Francy, Co-PI, \$199,626, Ohio Water Development Authority, 1/1/16-12/31/17.

“Evaluation of Runoff from Manure Treated Agricultural Plots” W.R. Midden, PI, “\$15,000, Ohio Lake Erie Protection Fund, Ohio Lake Erie Commission, 9/01/16 – 08/31/17.

“Social Facilitation & the Evolutionary Advance of Institutional Change” Moira van Staaden, PI; W.R. Midden, Co-PI; C.L. Barratt, Co-PI, “\$2,935,097, National Science Foundation Improving Undergraduate STEM Education, 1/1/16-12/31/20.

“Determining sources of phosphorus to western Lake Erie from field to lake”, W.R. Midden, PI, of a BGSU sub-award as part of a collaborative project with other investigators at BGSU, Heidelberg University, Ohio State University, and the U.S. Department of Agriculture, \$59,971, funded by the Ohio Department of Higher Education through the Ohio Sea Grant, 3/1/16-2/28/18.

“Building Ohio’s Sustainable Energy Future” W.R. Midden, PI, \$149,125, Ohio Department of Higher Education, 7/1/17-6/30/19.

“Meeting Essential Doctor Needs in Rural and Urban Areas” W.R. Midden, PI, \$58,125, Ohio Department of Higher Education, 7/1/17-6/30/19.

“Northern Ohio Alliance for Graduate Education to the Professoriate: BGSU” W.R. Midden, PI, \$200,000, National Science Foundation AGEP, 10/1/15-3/31/19.

“Tracking and Attenuating Nutrient Loads from Manure Fertilization” W.R. Midden, PI, \$210,723, Ohio Sea Grant ODHE Harmful Algal Bloom Research Initiative, 3/1/18-12/31/20.