

Ferris State University  
Department of Biological Sciences  
820 Campus Drive ASC 2005  
Big Rapids, Michigan 49307  
231-591-2563 (voice)  
231-591-2540 (fax)  
[hoerterj@ferris.edu](mailto:hoerterj@ferris.edu)  
[www.ferris.edu/hoerter](http://www.ferris.edu/hoerter)

# JAMES D. HOERTER

---

## EDUCATION

1974      **Ph.D. Degree:** Genetics, Pennsylvania State University, University Park, PA  
1972      **M.S. Degree:** Genetics, Pennsylvania State University, University Park, PA  
1970      **B.S. Degree:** Biology, Colorado State University, Fort Collins, CO

## EXPERIENCE

2006-present    **Professor, Biological Sciences, Ferris State University**, Big Rapids, MI

2008            **U.S. Fulbright Research Scholar**, Dublin Institute of Technology (DIT), Dublin, Ireland. Collaborated with the Radiation and Environmental Science Centre on mechanisms regulating the response to solar radiation in human cells. Developed proposals for collaborative research projects that will permit the exchange and research training of undergraduate and graduate students between DIT and Ferris State University.

1993-2006      **Dept. Head, Biological Sciences, Ferris State University**, Big Rapids, MI  
Responsible for department of 17 tenure, 8 adjunct, 2 lab technicians. Major responsibilities include budgeting, faculty recruitment, course scheduling, tenure and post-tenure review, course evaluation, program development and assessment, long-range planning and development, biotechnology program recruitment, grant writing for new curricula and research, conducting biology outreach programs (workshops, AP institutes and summer biotechnology academy) for high school students and teachers, and directing an undergraduate research program. Coordinated design and renovation of biology instructional classrooms, research labs and greenhouse as part of the College of Arts and Sciences renovation project (\$31 million).

1986-93        **Professor/Chairman, Division of Natural Sciences, Stephens College**, Columbia, MO Division included areas of biology, geology and chemistry. Initiated with NSF funding a student research and internship program. Designed new degree programs in biology, developed and implemented strategies to recruit and retain students in the natural sciences, assisted with development campaigns for science scholarships and research.

1986-93        **Visiting Research Professor, Molecular Genetics, University of Missouri**, Columbia, Mo. Summer research and sabbatical appointments under NSF ROA awards.

1975-86 **Assistant/Associate Professor, Stephens College**, Columbia, MO. Taught courses in genetics, developmental biology, anatomy and physiology, and general biology.

1974-75 **Education Officer, National Cancer Institute, Frederick Cancer Research Center**, Frederick, MD.

### **GRANTS AWARDED (1.3 million total)**

2009-10	Ferris	Faculty Research Grant--\$7,626
2009-10	Ferris	Exceptional Merit/Faculty Research Award--\$7,500
2007-08	Ferris	Exceptional Merit/Faculty Research Award--\$7,500
2006-07	Ferris	Faculty Research Grant--\$7,900
2004-07	NIH-AREA	Protein Oxidation in Skin Cells by UVA Irradiation--\$225,000
2003-04	U.S. ED	Advanced Placement for Biology Teachers-- \$56,000
2000-04	NIH-AREA	Fur-Dependent Regulation of RpoS--\$147,000
2002-03	Eisenhower	Development of a Research-Based Lab Curriculum--\$65,000
1997-00	NSF-CCD	Research Link 2000—\$200,000
1996-97	NSF-ARI	Academic Research--\$224,760
1995	Upjohn	Biotechnology Outreach--\$7,500
1996-97	NSF-CCD	Research-based Biology Course--\$130,000
1993-96	NIH-AREA	Inducible Repair After UVA/UVB--\$108,000
1993-96	NIH	Minority Research Supplement—\$14,118
1990-92	NSF-ILI	Development of an Investigative Biology Lab--\$24,000
1988-89	NSF-ILI	Molecular Genetics Research Lab--\$18,000
1986-92	NSF-ROA	NUV Radiation Damage and Repair--20,000 per year

### **HONORS/FELLOWSHIPS**

2008 **US Fulbright Research Fellowship**. Dublin Institute of Technology, Dublin, Ireland

1990 **Outstanding Scientist Achievement Award**, Presented by the Missouri Academy of Science in recognition of contributions to the advancement of undergraduate research. 1990.

1980-81 **Teaching Fellow, National Endowment for the Humanities**, Conceptual Studies Center, Columbia, MO.

### **SERVICE TO PROFESSIONAL SOCIETIES**

1998-2000 **Michigan Biotechnology Association, Board of Directors**. Initiated and coordinated program for placement of interns with emerging biotech companies

1994-1998 **Biology Counselor, Council on Undergraduate Research**. Provided leadership for division policy, grants review committee, and conducted reviews of biology programs. Project Director for NSF funded CCD Project—Research Link 2000

1994-2003 **NSF Grant Review Panelist**

1982-93 **Tri Beta Biological Society**. Vice President and District Director

**RESEARCH PUBLICATIONS**

**All Publications Refereed**

(\*Undergrad Co-authors)

The Effect of UVA Fluence Rate on Indicators of Oxidative Stress in Human Dermal Fibroblasts. Hoerter, James D., Christopher S. Ward\*, Kyle D. Bale\*, Admasu N. Gizachew\*, Rachelle Graham\*, Jaclyn Reynolds\*, Melanie E. Ward\*, Chesca Choi\*, Jean-Leonard Kagabo\*, Michael Sauer\*, Tara Kuipers\*, Timothy Hotchkiss\*, Nate Banner\*, Renee A. Chellson\*, Theresa Ohaeri\*, Langston Gant, Leah Vanderhill. ***International Journal of Biological Sciences*** 4:63-70. 2008.

Effects of Sublethal UVA Irradiation on Activity Levels of Oxidative Defense Enzymes and Protein Oxidation. James D. Hoerter\*, Alan A. Arnold, Dorota Kuczynska, Akemi Shibuya, Christopher S. Ward, Michael G. Sauer, Admasu Gizachew, Timothy M. Hotchkiss, Todd Fleming and Steve Johnson. ***Journal of Photochemistry and Photobiology B: Biology***. 81: 171-180. 2005

Altered Hydroperoxidase (HPI and HPII) Activities in the  $\Delta$ fur (Ferric Uptake Regulator) Mutant Contribute to Increased Sensitivity to UVA Irradiation. James D. Hoerter, Alan A. Arnold\*, Christopher Ward\*, Michael Sauer\*, Steve Johnson\*, Todd Fleming\* and Abraham Eisenstark. ***Journal of Photochemistry and Photobiology B: Biology***. 79: 151-157. 2005.

The *rpoS* Gene of *Erwinia carotovora*: Gene Organization and Functional Expression in *E. coli*. M. J. Calcutt, M.B. Becker-Hapak, M. Gaut\*, J. Hoerter, and A. Eisenstark. ***FEMS Microbiology Letters***. 159: 275-281. 1998

RpoS Dependent Overexpression of Carotenoids from *Erwinia herbicola* in *OXYR* Deficient *Escherichia coli*. M. Becker-Hapak, E. Troxtel\*, J. Hoerter, and A. Eisenstark. ***Biochemical and Biochemical Research Communications***. 239: 305-309. 1997.

Role of Enterobactin and Intracellular Iron in Cell Lethality During Near-UV Irradiation in *Escherichia coli*. J. Hoerter, A. Pierce\*, C. Troupe, J. Epperson\*, and A. Eisenstark. ***Photochemistry and Photobiology***. 64: 537-541, 1996.

Patterns of Protein Synthesis in a Growth Delay Mutant (*nuv*) of *Escherichia coli* After Treatment by Near-Ultraviolet Radiation of Hydrogen Peroxide. J. Hoerter and A. Eisenstark. ***Journal of Photobiology and Photochemistry, B: Biology***, 6:283-289. 1990.

Mutations by Near-Ultraviolet Radiation in *Escherichia coli* Strains Lacking Superoxide Dismutase. J. Hoerter and A. Eisenstark. ***Mutation Research***, 215: 161-165. 1989.

Synergistic Killing of Bacteria and Phage by Polystyrene and Ultraviolet Radiation. J. Hoerter and A. Eisenstark. ***Environmental and Molecular Mutagenesis***. 12:261-264. 1988.

Dosage Effects of the White (*d*) and Melanoid (*m*) Genes on Pigment Pattern in the Mexican Axolotl, *Ambystoma mexicanum*. James D. Hoerter. ***Journal of Developmental Biology***. 59:249-254, 1977.

Patterns of Purine Synthesis Related to Iridophore Development in the Wild Type, Melanoid and Axanthic Strains of the Mexican Axolotl, *Ambystoma mexicanum*. J. Hoerter and H. Clark Dalton. ***Journal of Developmental Biology***. 36:245-251, 1974.

## EDUCATIONAL PUBLICATIONS

Research Link 2000: Building and Sustaining Research-Based Undergraduate Curricula. James D. Hoerter and Sibdas Ghosh. Submitted to ***Council on Undergraduate Research Quarterly***. (to be refereed)

A Laboratory Intensive Bachelor's Program in Biotechnology. James D. Hoerter. ***Council on Undergraduate Research Quarterly***. March, 1996. (refereed)

Procedure for Preparing a Human Karyotype for the Undergraduate Laboratory. James D. Hoerter and Terri Bean\*. ***Midwest Bioscene***. 13:6-10, 1987. (Unrefereed)

Research Internships: A Case Study. James D. Hoerter. ***Quarterly Journal of the Tri Beta Biological Society***. 53:210-212, 1982. (unrefereed)

Research Internships: Students as Participants in Science. James D. Hoerter. ***American Biology Teacher***. 42:51-52, 1980. (refereed)

Stephens College Research Internship Program. James D. Hoerter. ***Bulletin of the Missouri Academy of Science***. 101: 3-5, 1977. (unrefereed)

## RESEARCH PAPERS PRESENTED

### All Presentations Refereed

(Last 10 years--total for all years: 55; undergraduate authors indicated by \*)

UVA and Melanoma. **Research Seminar, Grand Valley State University**, Allendale, MI. April 9, 2009

Effect of UVA Fluence Rate on Indicators of Oxidative Stress in Human Dermal Fibroblasts. Jacklyn Reynolds and James D. Hoerter. ***West Michigan Regional Undergraduate Science Research Conference*** on November 1, 2008. Van Andel Research Institute, Grand Rapids, MI. Nov 1, 2008

Oxidative Defense Mechanism in Response to UVA Irradiation in Human Dermal Fibroblasts. James D. Hoerter. Research Seminar, **Dublin Institute of Technology**, Radiation and Environmental Science Center, Dublin, Ireland, 2008.

Interaction of Solar and Tanning-Bed UVA/UVB Irradiation on Growth Rate in Human Fibroblasts. Langston Gant\*, **Michigan Math and Science Symposium**, Grand Valley State University, 2006.

Effects of Sublethal (7.4 W/m<sup>2</sup>) UVA Irradiation on Activity Levels of Oxidative Defense Enzymes (Catalases, Superoxide Dismutases, Glutathione Reductase) and on Protein Oxidation and Survival after Lethal UVA in *Escherichia coli*. James D. Hoerter, Alan A. Arnold\*, Dorota Kuczynska\*, Akemi Shibuya\*, Christopher S. Ward\*, Michael G. Sauer\*, Admasu Gizachew\*, Timothy M. Hotchkiss\*, Todd Fleming\* and Steve Johnson\*. Presented at the **11th Congress of the European Society of Photobiology**, Aix-les-Bains, France, September 3-8, 2005.

NUV Irradiation Increases Superoxide Dismutase and Catalase in *Escherichia coli*. Christopher Ward, Alan Arnold, Michael Sauer, Steve Johnson (James D. Hoerter, Research Sponsor). **Ferris State University Honors Symposium**, April 28, 2005.

NUV Irradiation (290-400 nm) Increases Protein Oxidation in *Escherichia coli*. Alan Arnold\*, Akemi Shibuya\*, Dorota Kuczynska\* and James D. Hoerter. **18<sup>th</sup> National Conference on Undergraduate Research**, Indiana University-Purdue University, Indianapolis, IN. April, 2004.

UVA Irradiation (320-400 nm) Increases Superoxide Dismutase and Catalase Activity in *E. coli*. Christopher Ward\*, Alan Arnold\*, Michael Sauer\*, Steve Johnson\* and James D. Hoerter. **18<sup>th</sup> National Conference on Undergraduate Research**, Indiana University-Purdue University, Indianapolis, IN. April, 2004.

Fur-dependent Transcriptional Regulation of Stationary-Phase Sigma Factor (RpoS) in *Escherichia coli*. James D. Hoerter, Alan Arnold\*, Christopher Ward\*, Michael Sauer\*, Steve Johnson\*, Todd Fleming\*, Anna Glinskii, and Abraham Eisenstark. **31<sup>st</sup> Annual Meeting of the American Society for Photobiology**, Baltimore, Md. July, 2003.

Regulation of Catalase by Ferris Uptake Regulon (fur). Alan A. Arnold\* and James D. Hoerter. **17<sup>th</sup> National Conference of Undergraduate Research**, University of Utah, Salt Lake City, 2003.

Induction of *rpoS* and its Regulated Genes by Near-Ultraviolet Radiation in *Escherichia coli*. M. Doty\* and J. Hoerter. **Council on Undergraduate Research Capitol Hill Poster Session**, 1998.

Induction of *rpoS* and its Regulated Genes by Near-Ultraviolet Radiation in *Escherichia coli*. M. Doty\* and J. Hoerter. **12<sup>th</sup> National Conference on Undergraduate Research**, Salisbury State University, 1998.

The Role of Intracellular Iron on the Sensitivity of *E. coli* to Near-Ultraviolet Radiation. S. Bailey\*, G. Hooper\*, C. Troupe, and J. Hoerter. **47<sup>th</sup> International Science and Engineering Research Symposium**, Tucson, Arizona. 1996.

The Effect of Near-Ultraviolet-B Radiation on Mutagenesis and DNA Repair Mechanisms. A. Lovgren\* and B. Orange\*. **6<sup>th</sup> Annual Sakhorov's Readings**, St. Petersburg, Russia, and the **National Student Research Symposium**, St. Louis, Missouri. 1996.

Induction of Heat Shock Response Confers Resistance to Near-Ultraviolet Radiation (290-400 nm) in *Escherichia coli*. A. MacTaggart\* and J. Hoerter. **10<sup>th</sup> National Conference on Undergraduate Research**, University of North Carolina. 1996.

Construction of a Model for Assessing the Biological Effects of Increased Near-Ultraviolet Radiation-B (320-400 nm) Resulting from Ozone Depletion. J. Hoerter, C. Troupe, B. Orange\* and A. Lovgren\*. **Undergraduate Research Symposium**, Washington University, 1995.

Enterobactin is a Chromophore for Near-Ultraviolet Radiation in *Escherichia coli*. J. Hoerter, A. Eisenstark, and A. Pierce\*. **Michigan Academy of Science**. 1995.

The Effect of NUV-B (290-320nm) Radiation on Survival of Bacteria and Viruses – A model for Predicting the Potential Hazard of Increased Ozone Depletion. A. Lovgren\*, B. Orange\*, C. Troupe, and J. Hoerter. **Michigan Academy of Science**, 1995.

Regulation of *Erwinia herbicola* Carotenoid Synthesis by *Katf* (Sigma 38) in *Escherichia coli*. M. Becker-Hapak, M. Gaut\*, E. Troxtel\*, J. Hoerter and A. Eisenstark. **National Conference on Undergraduate Research**, Union College, 1995.