



CURRICULUM VITAE

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EDUCATION

<u>INSTITUTION</u>	<u>DEGREE</u>	<u>YEAR</u>	<u>FIELD</u>
University of Kent, U.K.	B.Sc. Hons.	1972	Chemistry
University of Kent, U.K.	M.Sc.	1973	Enzyme Chemistry
University of Sussex, U.K.	D.Phil.	1976	Biochemistry

PROFESSIONAL EXPERIENCE

Predocctoral Fellow, School of Molecular Sciences, University of Sussex, U.K. 1973-75.
Postdoctoral Fellow, School of Molecular Sciences, University of Sussex, U.K., 1975-77.
Lecturer, Department of Physical Sciences, Open University, U.K. 1976-77.
Research Associate, Department of Biochemistry, Duke University Medical School, 1977-81.
Senior Research Associate, Department of Biochemistry, Duke University Medical School, 1981-83.
Assistant Professor, Department of Biochemistry, University of South Florida, College of Medicine, 1983-87.
Associate Professor, Department of Biochemistry & Molecular Biology, University of South Florida, College of Medicine, 1987-91.
Professor, Department of Biochemistry & Molecular Biology, University of South Florida, College of Medicine, 1991-2006.
Founding Member, University of South Florida Institute for Biomolecular Science, 1986-2002.
Visiting Professor, New College, University of South Florida, 1996.
Associate Director, University of South Florida Institute for Biomolecular Science, 1994-96.
Director, Interdisciplinary Ph.D. Program in Cellular & Molecular Biology, University of South Florida Institute for Biomolecular Science, 1994-96.
Member, Physical Biochemistry Study Section, National Institutes of Health, 1994-99.
Associate Member, H. Lee Moffitt Cancer Center & Research Institute, University of South Florida, 1994-1998.
Vice President of the Faculty, University of South Florida, College of Medicine, 2002-03; 2004-05.
President of the Faculty, University of South Florida, College of Medicine, 2003-04; 2005-06.
Sergeant-At-Arms, USF Faculty Senate, 2003-06.
President, University of South Florida Faculty Senate, 2006-08.
Member, University of South Florida Board of Trustees, 2006-2008.
Immediate Past President, University of South Florida Faculty Senate, 2008-12.
Professor, Department of Molecular Medicine, University of South Florida, College of Medicine, 2006-2007.
Distinguished University Health Professor, Department of Molecular Medicine, University of South Florida, Morsani College of Medicine, 2007-present.
Interim Associate Dean for Graduate & Postdoctoral Affairs, University of South Florida, College of Medicine, 2006-2007.
Associate Dean, Graduate & Postdoctoral Affairs, University of South Florida, Morsani College of Medicine, 2007- present.
Director, Master's Program in Bioinformatics & Computational Biology, University of South Florida, College of Medicine, 2002-2009.
Director, Master's Program in Biochemistry & Molecular Biology, University of South Florida, College of Medicine, 2003-2009.
Director, Master's Program in Health Sciences, University of South Florida, Morsani College of Medicine, 2008- present.
Director, Master's Program in Medical Sciences, Medical Sciences Pre-Professional Program (MSP³), University of South Florida, Morsani College of Medicine, 2012-present.
Director, Master's Program in Metabolic & Nutritional Medicine, University of South Florida, College of Medicine, 2008-2018.
Director, Master's Program in Health Informatics, University of South Florida, College of Medicine, 2011-2016.

- Director, Graduate Certificate in Bioinformatics, University of South Florida, College of Medicine, 2004-2009.
- Director, Graduate Certificate in Biochemistry & Molecular Biology, University of South Florida, College of Medicine, 2004-2010.
- Director, Graduate Certificate in Biotechnology, University of South Florida, College of Medicine, 2005-2009.
- Director, Graduate Certificate in Molecular Medicine, University of South Florida, College of Medicine, 2005-2010.
- Director, Graduate Certificate in Health Sciences, University of South Florida, Morsani College of Medicine, 2007- present.
- Director, Graduate Certificate in Medical Biochemistry, Microbiology & Immunology, University of South Florida, College of Medicine, 2007-2010.
- Co-Director, Graduate Certificate in Pharmacy Sciences, University of South Florida, College of Medicine, 2009-14.
- Director, Graduate Certificate in Health Informatics, University of South Florida, College of Medicine, 2010-16.
- Director, Graduate Certificate in Metabolic & Nutritional Medicine, University of South Florida, College of Medicine, 2009-2018.
- Director, Personalized Medicine Certification, University of South Florida, Morsani College of Medicine, 2024-present.
- Director, Personalized Medicine Certification, Therapeutic Plasma Exchange, University of South Florida, Morsani College of Medicine, 2025-present.

HONORS AND AWARDS

- 1972-73: U.K. Science Research Council Postgraduate Fellow.
- 1973-75: U.K. Science Research Council Predoctoral Fellow.
- 1983: American Society of Biological Chemists (elected).
- 1985: Who's Who in Frontiers of Science and Technology.
- 1986: American Men and Women in Science.
- 1986-88: AFRC Underwood Fund Travel Award.
- 1997: International Who's Who of Professionals.
- 1998: 2000 Outstanding Scientists of the 20th Century.
- 1998: USF Professorial Excellence Award.
- 1999: Who's Who in America Science and Engineering.
- 1999: Who's Who in the World.
- 2002: State of Florida, Service First Award.
- 2003: Commencement Marshal, Spring 2003, University of South Florida.
- 2004: Who's Who in Sciences Higher Education.
- 2004: Who's Who in Medical Sciences Education.
- 2004: Commencement Marshal, Spring 2004, University of South Florida, College of Medicine.
- 2005: Commencement Marshal, Summer 2005, University of South Florida.
- 2006: Who's Who Among Executives and Professionals.
- 2006: Commencement Marshal, Summer and Fall 2006, University of South Florida.
- 2006: Outstanding Achievement Award, Department of Molecular Medicine, University of South Florida, College of Medicine.
- 2007: Fellow, USF Health Leadership Institute, University of South Florida, College of Medicine (Charter Class Member).
- 2007: Commencement Marshal, Spring, Summer and Fall 2007, University of South Florida.
- 2007: Grasso Award, Association of Medical Science Graduate Students, University of South Florida, College of Medicine.
- 2007: Graduate Education Award, Department of Molecular Medicine, University of South Florida, College of Medicine.

- 2007: Distinguished University Health Professor, University of South Florida, College of Medicine.
- 2008: Commencement Marshal, Spring and Summer 2008, University of South Florida.
- 2009: Commencement Marshal, Summer 2009, University of South Florida.

BIBLIOGRAPHY

REFEREED PAPERS

1. Bray, R.C., Lowe, D.J. & Barber, M.J. (1974), "Distribution of Reducing Equivalents on Xanthine Oxidase Molecules and the Rates of Intramolecular Electron-Transfer Reactions", *Biochem. J.* 141, 209-311.
2. Bray, R.C., Barber, M.J., Dalton, H., Lowe, D.J. & Coughlan, M.P. (1975), "Iron-Sulfur Systems in Some Isolated Multi-Component Oxidative Enzymes", *Biochem. Soc. Trans.* 3, 479-482.
3. Barber, M.J., Bray, R.C., Lowe, D.J. & Coughlan, M.P. (1976), "Studies by Electron Paramagnetic Resonance Spectroscopy and Stopped-Flow Spectrophotometry on the Mechanism of Action of Turkey Liver Xanthine Dehydrogenase", *Biochem. J.* 153, 279-289.
4. Lowe, D.J., Barber, M.J., Pawlik, R.T. & Bray, R.C. (1976), "A New Non-Functional Form of Milk Xanthine Oxidase Containing Stable Quinivalent Molybdenum", *Biochem. J.* 155, 81-85.
5. Cammack, R., Barber, M.J. & Bray, R.C. (1976), "Oxidation-Reduction Potentials of Molybdenum, Flavin and Iron/Sulfur Centers in Milk Xanthine Oxidase", *Biochem. J.* 157, 469-478.
6. Barber, M.J., Bray, R.C., Cammack, R. & Coughlan, M.P. (1977), "Oxidation-Reduction Potentials of Turkey Liver Xanthine Dehydrogenase and the Origins of Oxidase and Dehydrogenase Behaviour in Molybdenum-Containing Hydroxylases", *Biochem. J.* 163, 279-289.
7. Williams-Smith, D.L., Bray, R.C., Barber, M.J., Tsopanakis, A.D. & Vincent, S.P. (1977), "Changes in Apparent pH on Freezing Aqueous Buffer Solutions and Their Relevance to Biochemical EPR Spectra", *Biochem. J.* 167, 593-600.
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10. Barber, M.J. & Siegel, L.M. (1982), "Oxidation-Reduction Potentials of Molybdenum, Flavin and Iron-Sulfur Centers in Milk Xanthine Oxidase: Variation with pH", *Biochemistry* 21, 1638-1647.
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17. Barber, M.J., Rosen, G.M., Siegel, L.M. & Rauckman, E.J. (1983), "Evidence for the Formation of Superoxide and Formate Radicals in *Methanobacterium formicicum*", *J. Bact.* 153, 1282-1286.
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22. Solomonson, L.P., Barber, M.J., Howard, W.D., Johnson, J.L. & Rajagopalan, K.V. (1984), "Electron Paramagnetic Resonance Studies on the Molybdenum Center of Assimilatory NADH:Nitrate Reductase from *Chlorella vulgaris*", *J. Biol. Chem.* 259, 849-853.
23. Barber, M.J., Zektzer, A.K., Rosen, G.M., Demos, H.A. & Rauckman, E.J. (1984), "Electron Paramagnetic Resonance Studies of Membrane Proteins in Hepatic Microsomes", *Biochim. Biophys. Acta.* 776, 159-168.
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28. Barber, M.J. & Eichler, D.C. (1985), "Word-Processing Software as a Useful Tool for Searching Nucleotide Sequences for Restriction Enzyme Sites", *BioTechniques* 3, 272-274.
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53. Kay, C.J., Barber, M.J., Notton, B.A. & Solomonson, L.P. (1989), "Oxidation-Reduction Midpoint Potentials of the Flavin, Heme and Mo-Pterin Centers in Spinach Nitrate Reductase", *Biochem. J.* 263, 285-287.
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57. Neame, P.J. & Barber, M.J. (1989), "Conserved Domains in Mo-Hydroxylase Enzymes: Primary Structure of Hepatic Sulfite Oxidase", *J. Biol. Chem.* 264, 20894-20901.
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191. Percy, M.J., Crowley, L.J., Davis, C.A., Boudreaux, J., Layton, D.M., McMullin, M.F., Lappin, T.R.J. & Barber, M.J. (2005) "A Novel Heterologous Expression System for Characterization of Individual NADH-Cytochrome *b₅* Reductase Variants in Recessive Congenital Methemoglobinemia", *Blood* 106, 1676.
192. Barber, M.J., Roma, G.W. & Crowley, L.J. (2006) "Canine Cytochrome *b₅* Reductase: From Bioinformatics to Protein Production", *PITTCON 2006*, 1230-1P.
193. Smith, E.T., Davis, C.A. & Barber, M.J. (2006) "Cytochrome *b₅*/Cytochrome *b₅* Reductase: Potentiometric and Direct Electrochemical Analysis of the Redox Potentials of the Heme and FAD Prosthetic Group", *PITTCON 2006*, 430-18P.
194. Roma, G.W., Crowley, L.J. & Barber, M.J. (2006) "Expression of a Functional Canine Cytochrome *b₅* Reductase", *FASEB J.* 3620.
195. Daggett, B.C., Crowley, L.J., Roma, G.W. & Barber, M.J. (2006) "Mutagenesis of a Conserved Flavin-Binding Motif in Cytochrome *b₅* Reductase", *FASEB J.* 6418.
196. Crowley, L.J., Roma, G.W. & Barber, M.J. (2006) "Structure-Function Studies of the Hereditary Methemoglobinemia Mutant M272", *FASEB J.* 6362.
197. Percy, M.J., Crowley, L.J., Davis, C.A., Boudreaux, J., Layton, D.M., McMullin, M.F., Lappin, T.R.J. & Barber, M.J. (2006) "Expression of NADH-Cytochrome *b₅* Reductase Variants Provides Important Functional Insights into Recessive Congenital Methemoglobinemia", *Ann. Meet. British Soc. Hematology.*
198. Percy, M.J., Crowley, L.J., Davis, C.A., Boudreaux, J., Layton, D.M., McMullin, M.F., Lappin, T.R.J. & Barber, M.J. (2006) "Characterization of Individual NADH-Cytochrome *b₅* Reductase Variants Using a Heterologous Expression System", *11th Congress European Haematology Assoc.*
199. Percy, M.J., Crowley, L.J., Davis, C.A., Boudreaux, J., Layton, D.M., McMullin, M.F., Lappin, T.R.J. & Barber, M.J. (2006) "Characterization of Individual NADH-Cytochrome *b₅* Reductase Variants Using a Heterologous Expression System", *Ann. Meet British Haematology Assoc.* 0030.
200. Percy, M.J., Crowley, L.J., Layton, D.M., Lappin, T.R.J. & Barber, M.J. (2006) "Characterization of a Double Mutation, the Novel Pro92His and Previously Described Glu255-, of NADH-Cytochrome

- b₅* Reductase Associated with Apparent Type I RCM”, 11th Congress European Haematology Assoc. 0571.
201. Percy, M.J., Crowley, L.J., Layton, D.M., Lappin, T.R.J. & Barber, M.J. (2006) “A Novel, Pro92His and Previously Described, Glu255-, Double Mutation of NADH-Cytochrome *b₅* Reductase Associated with Apparent Type I RCM”, *Ann. Meet. Haematology Assoc. of Ireland*.
 202. Crowley, L.J., Roma, G.W. & Barber, M.J. (2007) “Directed Mutagenesis of the ^G_RXX^S_T Flavin-Binding Motif in Cytochrome *b₅* Reductase”, *FASEB J.*
 203. Roma, G.W., Crowley, L.J. & Barber, M.J. (2007) “Structure/Function Studies of the GxGxxP NADH-Binding Motif in Cytochrome *b₅* Reductase”, *FASEB J.*
 204. Barber, M.J., Roma, G.W. & Crowley, L.J. (2007) “Expression and Characterization of a Functional Fruit Fly Variant of Cytochrome *b₅* reductase”, *FASEB J.*
 205. Percy, M.J., Crowley, L.J., Layton, D.M., Lappin, T.R.J. & Barber, M.J. (2007) “A Novel, Pro92His and Previously Described, Glu255-, Double Mutation of NADH-Cytochrome *b₅* Reductase Associated with Apparent Type I RCM”, *FASEB J.*
 206. Caplan, S., Chong, S., Crowley, L., Barber, M.J. & Smith, E.T. (2008) “UV-Visible Spectroscopic Determination of Acid Dissociation Constants (pKa) of Reduced Cytochrome *b₅* Reductase and Riboflavin”, *PITTCOON 2008*.
 207. Barber, M.J., Roma, G., & Seyfang, A. (2008) “Expression and Characterization of a Functional *Leishmania* Variant of Cytochrome *b₅* Reductase”, *FASEB J.* 22: 634.
 208. Holloway, M.J.; Roma, G.; Barber, M.J. & Seyfang, A. (2008) “Characterization of Cytochrome *b₅* Reductase and its Electron Acceptor, Cytochrome *b₅*, in the Fungal Pathogen *Candida albicans*, *USF SIPAIID 2nd Annual Conference, Tampa, FL*.
 209. Holloway, M.J., Roma, G., Barber, M.J., & Seyfang, A. (2009) “Characterization of Cytochrome *b₅* Reductase in the Opportunistic Fungus *Candida albicans*”, *USF SIPAIID 3rd Annual Conference, Tampa, FL*.
 210. Holloway, M.J., Roma, G., Barber, M.J., & Seyfang, A. (2009) “Biochemical Characterization of Cytochrome *b₅* Reductase in the Fungal Pathogen *Candida albicans*”, *Am. Soc. Microbiology, Philadelphia, PA*.
 211. Holloway, M.J., Roma, G., Barber, M.J., & Seyfang, A. (2009) “Biochemical Characterization of Cytochrome *b₅* Reductase in the Fungal Pathogen *Candida albicans*” *FCoE-BITT 2009 Symposium on Drug Design, Discovery, and Delivery, Tampa, FL*.

RESEARCH GRANTS

1983-1984

- "Detection and Characterization of Novel Paramagnetic Centers in Methanogenic Bacteria", University of South Florida Research and Creative Scholarship Award. \$3,335.
- "Oxygen Toxicity: Application of Spin Labels to Monitor Changes in Microsomal Membrane Structure by Oxygen Derived Free Radicals", NIH/USF Biomedical Research Support Grant. \$6,000.
- "Immunological Comparison of the Molybdenum Cofactor from Diverse Molybdenum-Containing Enzymes", University of South Florida Research and Creative Scholarship Award. \$3,500. (Co-P.I.)
- "Eighth International Symposium on Flavins and Flavoproteins", Brighton, U.K. University of South Florida Foreign Travel Award. \$750.
- "Microbiological and Biochemical Studies Towards Optimization of Substrate Utilization by Methanogenic Bacteria", Gas Research Institute. \$22,000.

1984-1985

- "Microbiological and Biochemical Studies Towards Optimization of Substrate Utilization by Methanogenic Bacteria", Gas Research Institute. \$22,000.
- "Topological and Mechanistic Analysis of Assimilatory Nitrate Reductase", U.S. Department of Agriculture. \$45,000.
- "Spectroscopic and Thermodynamic Properties of the Assimilatory Nitrate Reductase from *Chlorella vulgaris*", NIH. \$57,350. (Co-P.I.)

1985-1986

"Microbiological and Biochemical Studies Towards Optimization of Substrate Utilization by Methanogenic Bacteria", Gas Research Institute. \$22,000.

"Topological and Mechanistic Analysis of Assimilatory Nitrate Reductase", U.S. Department of Agriculture. \$45,000.

"Spectroscopic and Thermodynamic Properties of the Assimilatory Nitrate Reductase from *Chlorella vulgaris*", NIH. \$50,381. (Co-P.I.)

"Structure-Function Relations of Cardiac Glycoside Receptors", American Heart Association, Florida Affiliate. \$17,000. (Co-P.I.)

"Oxygen-Derived Free Radicals", Knights Templar Eye Foundation. \$20,000. (Co-P.I.)

"Thirteenth International Congress of Biochemistry", Amsterdam, The Netherlands. University of South Florida Foreign Travel Award. \$796.

"Thirteenth International Congress of Biochemistry", Amsterdam, The Netherlands. American Society of Biological Chemists Travel Award. \$750.

1986-1987

"Topological and Mechanistic Analysis of Assimilatory Nitrate Reductase", U.S. Department of Agriculture. \$45,000.

"Spectroscopic and Thermodynamic Properties of the Assimilatory Nitrate Reductase from *Chlorella vulgaris*", NIH. \$50,227. (Co-P.I.)

"Structure-Function Relations of Cardiac Glycoside Receptors", American Heart Association, Florida Affiliate. \$17,000. (Co-P.I.)

"Oxygen-Derived Free Radicals", Knights Templar Eye Foundation. \$20,000. (Co-P.I.)

"Immunological Comparison of Plant and Algal Assimilatory Nitrate Reductase", NATO Collaborative Research Grant. \$4,000.

"Spin-Labeled Insulin as a Probe for the Insulin Receptor", NIH/USF Biomedical Research Support Grant. \$4,500.

1987-1988

"Spectroscopic and Thermodynamic Properties of the Assimilatory Nitrate Reductase from *Chlorella vulgaris*", NIH. \$50,227. (Co-P.I.)

"Structure-Function Relations of Cardiac Glycoside Receptors", American Heart Association, Florida Affiliate. \$17,000. (Co-P.I.)

"Immunological Comparison of Plant and Algal Assimilatory Nitrate Reductase", NATO Collaborative Research Grant. \$4,500.

"EPR Properties of Carbon Monoxide Dehydrogenase", Virginia Tech/GRI. \$8150

"Mechanisms of Radiation Damage in Human Retinoblastoma", NIH/USF Biomedical Research Support Grant. \$5,000 (Co-Investigator)

"Studies on Nuclear Chromatin Using a New Double Spin-Label EPR Technique", NIH/USF Biomedical Research Support Grant. \$5,000. (Co-Investigator)

BRSF Small Instrumentation Grant Program (Fermentor Purchase), NIH. \$12,374. (Co-P.I.)

"Fourteenth International Congress of Biochemistry", Prague, Czechoslovakia, American Society for Biochemistry and Molecular Biology Travel Grant. \$1,250.

1988-1989

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$89,346.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$55,000.

"Immunological Comparison of Plant and Algal Assimilatory Nitrate Reductase", NATO Collaborative Research Grant. \$4,500.

"EPR Properties of Carbon Monoxide Dehydrogenase", Virginia Tech/GRI. \$7,436.

"Fourteenth International Congress of Biochemistry", Prague, Czechoslovakia, University of South Florida, Faculty Foreign Travel Award. \$425.

"Primary Structure of Hepatic Sulfite Oxidase", NIH/USF Biomedical Research Support Grant. \$5,000.

"Methylated Amine Metabolism and Electron Transfer in Methylotrophic Bacteria", University of South Florida Research and Creative Scholarship Award. \$7,000.

1989-1990

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$82,483.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$55,000.

"Immunological Comparison of Plant and Algal Assimilatory Nitrate Reductase", NATO Collaborative Research Grant. \$4,487.

"Small Instrumentation Grant Program (Peptide Synthesizer Purchase), NIH. \$30,088. (Co-P.I.)

"Spectroscopic Properties of Complex Molybdoproteins" (Spectrometer Purchase), USF College of Medicine, \$9,000.

1990-1991

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$83,500.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$55,000.

"Immunological Comparison of Plant and Algal Assimilatory Nitrate Reductase", NATO Collaborative Research Grant. \$4,487.

"Tenth International Symposium on Flavins and Flavoproteins", Como, Italy, University of South Florida Faculty Foreign Travel Award. \$700.

"Tenth International Symposium on Flavins and Flavoproteins", Como, Italy, (Organizing Committee Award). L500,000.

"Small Instrumentation Grant Program (Diode Array Detector Purchase), NIH. \$7,713. (Co-P.I.)

1991-1992

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$86,733.

"Small Instrumentation Grant Program (Capillary Electrophoresis Purchase), NIH. \$10,000. (Co-P.I.)

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$40,000.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$55,000.

"Electrochemistry of Metalloenzymes", NIH/USF Biomedical Research Support Grant. \$3,500.

1992-1993

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$107,426.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$40,000.

"Functional Properties of Endothelial Nitric Oxide Synthase", American Heart Association Florida Affiliate. \$40,000 (Co-Investigator).

"Acquisition of an Argon Laser for Phase Fluorometry", NSF. \$34,726. (Co-P.I.)

"Hyperchem Molecular Modeling", Autodesk Educational Grant Program. \$7,000.

"1992 Catalog Contest", Bioanalytical Systems, Inc., \$1,000.

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH SURE Award. \$2,712.

"1993 High School Science Teacher Research Fellowship", ASBMB. \$6,000.

1993-1994

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$106,510.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$40,000.

"Functional Properties of Endothelial Nitric Oxide Synthase", American Heart Association Florida Affiliate. \$40,000 (Co-Investigator).

1994-1995

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$61,500.

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$110,770.

1995-1996

"Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$115,201.

"Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$55,000.

"Molecular Determinants of Endothelial Nitric Oxide Synthase Activity and Regulation", American Heart Association Florida Affiliate. \$40,000 (Co-Investigator).

"Acquisition of a Matrix-Assisted Laser Desorption Time of Flight Mass Spectrometer", NSF. \$214,502 (Investigator).

1996-1997

- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$110,700.
- "Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$114,716.
- "Molecular Determinants of Endothelial Nitric Oxide Synthase Activity and Regulation", American Heart Association Florida Affiliate. \$40,000 (Co-Investigator).
- "Nitrogen Assimilation: Molecular and Genetic Aspects", USF Research Council Conference Support Award. \$10,000 (Co-PI).
- "Acquisition of a Diode Array Spectrophotometer", USF College of Medicine OCO Award. \$8,000.

1997-1998

- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$110,355.
- "Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$114,716.
- "Site-Directed Mutagenesis as a Probe for Hereditary Methemoglobinemia", Am. Heart Assoc. FL Aff. \$49,500.
- "Nitrogen Assimilation: Molecular and Genetic Aspects", USDA. \$5,000.
- "Nitrogen Assimilation: Molecular and Genetic Aspects", NSF. \$5,000 (Co-PI).
- "Site-Directed Mutagenesis as a Probe for Hereditary Methemoglobinemia", USF Research & Creative Scholarship. \$5,700.
- "Molecular Bases for Regulation of Endothelial Nitric Oxide Synthase", Am. Heart Assoc. \$55,000 (Collaborating Investigator).

1998-1999

- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$115,873.
- "Functional Properties of Spinach NADH:Nitrate Reductase", U.S. Department of Agriculture. \$114,716.
- "Functional Properties of Spinach Nitrate Reductase", U.S. Department of Agriculture. \$105,000.
- "Site-Directed Mutagenesis as a Probe for Hereditary Methemoglobinemia", Am. Heart Assoc. FL Aff. \$49,170.
- "Molecular Bases for Regulation of Endothelial Nitric Oxide Synthase", Am. Heart Assoc. \$55,000 (Collaborating Investigator).

1999-2000

- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$117,074.
- "Functional Properties of Spinach Nitrate Reductase", U.S. Department of Agriculture. \$105,000.
- "Site-Directed Mutagenesis as a Probe for Hereditary Methemoglobinemia", Am. Heart Assoc. FL Aff. \$10,000.
- "Molecular Recognition and Cytochrome *b₅* Reductase", Am. Heart Assoc. FL Aff. \$14,000 (Graduate Fellowship for C.C. Marohnic).
- "Flavoprotein Redox Reagents", NOVARTIS Agribusiness Biotechnology Research Inc. \$2,000.
- "Molecular Bases for Regulation of Endothelial Nitric Oxide Synthase", Am. Heart Assoc. \$55,000 (Collaborating Investigator).

2000-2001

- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$120,586.
- "Molecular Recognition and Cytochrome *b₅* Reductase", Am. Heart Assoc. FL Aff. \$15,000 (Graduate Fellowship for C.C. Marohnic).

2001-2002

- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$120,586.
- "Molecular Recognition in Cytochrome *b₅* Reductase". Am Heart Assoc. FL/Puerto Rico Affl. \$59,900.
- "Gordon Conference on Mo and W Enzymes". USF Faculty International Travel Grant. \$1,500.

2002-2003

- "A Master's Degree Program in Bioinformatics and Computational Biology at the University of South Florida", Alfred P. Sloan Foundation. \$76,550.
- "Molecular Recognition in Cytochrome *b₅* Reductase", Am Heart Assoc. FL/Puerto Rico Affl. \$59,900.
- "Thermodynamic Properties of NADH:Nitrate Reductase", NIH. \$175,000.

2003-2004

“A Master’s Degree Program in Bioinformatics and Computational Biology at the University of South Florida”, Alfred P. Sloan Foundation. \$76,550.

“Molecular Recognition in Cytochrome *b*₅ Reductase”, Am Heart Assoc. FL/Puerto Rico Affl. \$59,900.

“Thermodynamic Properties of NADH:Nitrate Reductase”, NIH. \$150,000.

2004-2005

“A Master’s Degree Program in Bioinformatics and Computational Biology at the University of South Florida”, Alfred P. Sloan Foundation. \$76,550.

“Thermodynamic Properties of NADH:Nitrate Reductase”, NIH. \$150,000.

2005-2006

“Thermodynamic Properties of NADH:Nitrate Reductase”, NIH. \$150,000.

“Molecular Interactions in Methionine Synthase Reductase”, Am Heart Assoc. FL/Puerto Rico Affl., \$119,900.

2006-2007

“Thermodynamic Properties of NADH:Nitrate Reductase”, NIH. \$150,000.

“Molecular Interactions in Methionine Synthase Reductase”, Am Heart Assoc. FL/Puerto Rico Affl., \$119,900.

“Regulation of Flavin Recognition in Cytochrome *b*₅ Reductase”, Am Heart Assoc. FL/Puerto Rico Affl. (Daggett Predoctoral Fellowship), \$43,540.

2007-2008

“Thermodynamic Properties of NADH:Nitrate Reductase”, NIH. \$150,000.

“Molecular Interactions in Methionine Synthase Reductase”, Am Heart Assoc. FL/Puerto Rico Affl., \$119,900.

2008-2009

“Enhancing Postdoctoral Professional Development (EP²D) and USF”, National Postdoctoral Association Seed Grant, \$3,500.

“5/3 Bank Cancer Research Graduate Fellowship”, 5/3 Bank Foundation, \$30,000.

“Characterization of *Candida* Cytochrome *b*₅ Reductase as Pharmacological Target”. FCE-BITT SEED Grant, \$ 75,000 (Co-PI).

2009-2010

“Biochemical Characterization of Cytochrome *b*₅ Reductase in *Candida albicans*”. F31Kirschstein-NRSA Individual Fellowship Application-MJ Holloway”, NIH. \$68,606. (Co-Sponsor).

TEACHING EXPERIENCE

1976-77: Lecturer, Open University 1st year undergraduate "Physical Science" core course.

1983-84: Participant, BMS6200 "Biochemistry for Medical Students", GMS 6416 "Macromolecular Metabolism" and GMS 6414 "Biological Membranes".

1984-85: Course Director, GMS 6745 "Physical Biochemistry"; Participant, BMS 6200 "Biochemistry for Medical Students", GMS 6200 "Biochemistry" and GMS 6505 "Advances in Enzymology".

1985-86: Participant, BMS 6200 "Biochemistry for Medical Students", GMS 6200 "Biochemistry", GMS 6416 "Macromolecular Metabolism", GMS 6414 "Biological Membranes" and GMS 6105-L "Laboratory Rotations in Biochemistry".

1986-87: Course Director, GMS 6745 "Physical Biochemistry"; Participant, BMS 6200 "Biochemistry for Medical Students", GMS 6200 "Biochemistry", GMS 6505 "Advances in Enzymology" and GMS 6105-L "Laboratory Rotations in Biochemistry".

1987-88: Course Director, GMS 6200 "Biochemistry" and GMS 6745 "Physical Biochemistry"; Participant, BMS 6200 "Biochemistry for Medical Students", GMS 6505 "Advances in Enzymology" and GMS 6105-L "Laboratory Rotations in Biochemistry".

1988-89: Course Director, GMS 6745 "Physical Biochemistry"; Participant, BMS 6200 "Biochemistry for Medical Students", GMS 6200 "Biochemistry", GMS 6505 "Advances in Enzymology" and GMS 6105-L "Laboratory Rotations in Biochemistry".

1989-90: Course Director, BMS 6200 "Biochemistry for Medical Students", GMS 6200 "Biochemistry" and GMS 6745 "Physical Biochemistry"; Participant, GMS 6105-L "Laboratory Rotations in Biochemistry".

- 1990-91: Course Director, GMS 6200 "Biochemistry"; Participant, BMS 6200 "Biochemistry for Medical Students", GMS 6105-L "Laboratory Rotations in Biochemistry" and BMS 6416 "Macromolecular Metabolism".
- 1991-92: Course Director, GMS 6745 "Physical Biochemistry"; Participant, GMS 6200 "Biochemistry", GMS 6505 "Advances in Enzymology", GMS 6105-L "Laboratory Rotations in Biochemistry" and BMS 6200 "Biochemistry for Medical Students".
- 1992-93: Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students" and GMS 6416 "Molecular Biology and Macromolecular Metabolism".
- 1993-94: Course Director, BMS 6745 "Physical Biochemistry"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry" and GMS 6505 "Advances in Enzymology".
- 1994-95: Course Director, GMS 7930 "Computer Applications in Biochemistry and Molecular Biology", GMS 6505 "Advances in Enzymology" and BMS 6745 "Physical Biochemistry"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry" and BMS 6200 "Biochemistry for Medical Students"; Instructor, USF Honors Program Seminar "Nature versus Nurture" (IDH 4000).
- 1995-96: Course Director, GMS 7930 "Computer Applications in Biochemistry and Molecular Biology"; Participant, GMS 6505 "Advances in Enzymology", BMS 6745 "Physical Biochemistry", GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students" and BCH 6411 "Molecular Biology".
- 1996-97: Course Director, GMS 7930 "Computer Applications in Biochemistry and Molecular Biology"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students". Course Instructor, "Principles of Biochemistry" (New College). Course Instructor, IDH 3350 "Honor's Natural Science". Course Instructor, USF College of Medicine Summer Pre-Matriculation Program.
- 1997-98: Course Director, GMS 7930 "Computer Applications in Biochemistry and Molecular Biology"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students", GMS 6745 "Physical Biochemistry". Course Instructor, IDH 3350 "Honor's Natural Science".
- 1998-99: Course Director, GMS 7930 "Computer Applications in Biochemistry and Molecular Biology"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students", GMS 6505 "Advances in Enzymology". Course Instructor, IDH 3350 "Honor's Natural Science". Course Instructor, IDH 4000 "Honor's Seminar: Major Works/Issues".
- 1999-00: Course Director, GMS 7930 "Computer Applications in Biochemistry and Molecular Biology"; Course Director, BCH 6746 "Physical Biochemistry"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students"; Course Instructor, IDH 3350 "Honor's Natural Science".
- 2000-01: Course Director, GMS 7930 "Bioinformatics"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students", GMS 6505 "Advances in Enzymology"; Course Instructor, IDH 3350 "Honor's Natural Science", Course Instructor, IDH 4000 "Honor's Major Works/Major Issues".
- 2001-02: Course Director, BCH 6888 "Bioinformatics"; Course Director, BCH 6746 "Physical Biochemistry"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students"; Course Instructor, IDH 3350 "Honor's Natural Science"; Course Instructor, IDH 4000 "Honor's Seminar: Major Works/Issues".
- 2002-03: Course Director, BCH 6888 "Bioinformatics"; Course Director, GMS 7930 "Bioinformatics and Proteomics"; Participant, GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", BMS 6200 "Biochemistry for Medical Students", BCH 6505 "Enzymology"; Course Instructor, IDH 3350 "Honor's Natural Science".
- 2003-04: Course Director, BCH 6888 "Bioinformatics"; Course Director, GMS 7930 "Bioinformatics II" Course Co-Director, GMS 7930 "Proteomics and Functional Genomics"; Participant, BMS 6206 "Biochemistry and Molecular Genetics", GMS 6001 "Cellular and Molecular Biology", GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", Course Instructor, IDH 3350 "Honor's Natural Science".
- 2004-05: Course Director, BCH 6888 "Bioinformatics"; Course Director, GMS 7930 "Bioinformatics II" Course Co-Director, GMS 7930 "Proteomics and Structural Biology"; Course Co-Director, GMS 7930 "Functional Genomics and Genomic Medicine"; Participant, BMS 6206 "Biochemistry and Molecular Genetics", GMS 6001 "Cellular and Molecular Biology", GMS 6200 "Biochemistry", GMS 6105-L "Laboratory Rotations in Biochemistry", Course Instructor, IDH 3350 "Honor's Natural Science".

- 2005-06: Course Director, BCH 6888 “Bioinformatics; Course Director, BCH 6889 “Bioinformatics II”; Course Director, GMS 7930 “Introduction to Biotechnology; Course Co-Director, GMS 7930 “Proteomics and Structural Biology”; Participant, BMS 6206 “Biochemistry and Molecular Genetics”, GMS 6001 “Cellular and Molecular Biology”, GMS 6200 "Biochemistry, Molecular and Cellular Biology", GMS 6105-L "Laboratory Rotations in Biochemistry", Course Instructor, IDH 3350 “Honor's Natural Science”.
- 2006-07: Course Director, BCH 6888 “Bioinformatics; Course Director, BCH 6889 “Bioinformatics II”; Course Director, BCH 6070 “Introduction to Biotechnology; Participant, BMS 6206 “Biochemistry and Molecular Genetics”, GMS 6200 “Biochemistry, Molecular and Cellular Biology”, GMS 6001 “Foundations in Biomedical Sciences”, GMS 6746 “Proteomics and Structural Biology”, GMS 6200 "Biochemistry, Molecular and Cellular Biology", GMS 6105-L "Laboratory Rotations in Biochemistry", Course Instructor, IDH 3350 “Honor's Natural Science”.
- 2007-08: Course Director, GMS 6001 “Foundation in Biomedical Sciences”, Course Director, BCH 6888 “Bioinformatics; Course Director, BCH 6889 “Bioinformatics II”; Course Director, GMS 6210 “Basic Medical Biochemistry”, Course Director, BCH 6420 “Clinical Correlations in Molecular Medicine”, Course Director, BCH 6070 “Introduction to Biotechnology; Participant, BMS 6206 “Biochemistry and Molecular Genetics”, GMS 6200 “Biochemistry, Molecular and Cellular Biology”, GMS 6746 “Proteomics and Structural Biology”, GMS 6200 "Biochemistry, Molecular and Cellular Biology", GMS 6105-L "Laboratory Rotations in Biochemistry", Course Instructor, IDH 3350 “Honor's Natural Science”.
- 2008-09: Course Director, GMS 6001 “Foundation in Biomedical Sciences”, Course Director, BCH 6888 “Bioinformatics; Course Director, BCH 6889 “Bioinformatics II”; Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, BCH 6420 “Clinical Correlations in Molecular Medicine”, Course Participant, GMS 6746 “Proteomics and Structural Biology”, GMS 6200 "Biochemistry, Molecular and Cellular Biology", Course Instructor, IDH 3350 “Honor's Natural Science”.
- 2009-10: Course Director, GMS 6001 “Foundation in Biomedical Sciences”, Course Director, BCH 6888 “Bioinformatics; Course Director, BCH 6889 “Bioinformatics II”; Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, BCH 6420 “Clinical Correlations in Molecular Medicine”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Participant, GMS 6746 “Proteomics and Structural Biology”, GMS 6200 "Biochemistry, Molecular and Cellular Biology", Course Instructor, IDH 3350 “Honor's Natural Science”.
- 2010-11: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6001 “Foundation in Biomedical Sciences”, Course Director, GMS 6505 “Basic Medical Pharmacology”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6454 “Medicine & Infectious Disease”, Course Director, BCH 6420 “Clinical Correlations in Molecular Medicine”, Course Director, GMS 6871 “Health Sciences Ethics”.
- 2011-12: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, “Medical Sciences Success Skills”, Course Director, GMS 6751 “Clinical Neurobiology”, Course Director, GMS 6441 “Clinical Endocrinology”, Course Director, GMS 6752 “Autoimmune Diseases”.
- 2012-13: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, “Medical Sciences Success Skills”, Course Director, GMS 6751 “Clinical Neurobiology”, Course Director, GMS 6441 “Clinical Endocrinology”, Course Director, GMS 6752 “Autoimmune Diseases”, Course Director, “Nutrition & Metabolism”, Course Director, “GMS 7930 “Advanced Endocrinology”, Course Director, “Medicine & Infectious Disease”.
- 2013-14: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, “Medical Sciences Success Skills”, Course Director, GMS 6751 “Clinical Neurobiology”, Course Director, GMS 6441 “Clinical Endocrinology”, Course Director, GMS 6752 “Autoimmune Diseases”, Course Director, “Nutrition & Metabolism”, Course Director, “GMS 7930 “Advanced Endocrinology”, Course Director, “Medicine & Infectious Disease”.
- 2014-15: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course

- Director, “Case Studies in Health Informatics”, Course Director, “Medical Sciences Success Skills”, Course Director, GMS 6751 “Clinical Neurobiology”, Course Director, GMS 6441 “Clinical Endocrinology”, Course Director, GMS 6752 “Autoimmune Diseases”, Course Director, “Nutrition & Metabolism”, Course Director, “GMS 7930 “Advanced Endocrinology”, Course Director, “Medicine & Infectious Disease”.
- 2015-16: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, “Case Studies in Health Informatics”, Course Director, “Medical Sciences Success Skills”, Course Director, GMS 6751 “Clinical Neurobiology”, Course Director, GMS 6441 “Clinical Endocrinology”, Course Director, GMS 6752 “Autoimmune Diseases”, Course Director, “Nutrition & Metabolism”, Course Director, “GMS 7930 “Advanced Endocrinology”, Course Director, “Medicine & Infectious Disease”.
- 2016-17: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, “Case Studies in Health Informatics”, Course Director, “Medical Sciences Success Skills”, Course Director, GMS 6751 “Clinical Neurobiology”, Course Director, GMS 6441 “Clinical Endocrinology”, Course Director, GMS 6752 “Autoimmune Diseases”, Course Director, “Nutrition & Metabolism”, Course Director, “GMS 7930 “Advanced Endocrinology”, Course Director, “Medicine & Infectious Disease”.
- 2017-18: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6456 “Integrated Bariatrics”, Course Director, “Medicine & Infectious Disease”.
- 2018-19: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, MCB 6433 “Clinical Correlations in Molecular Medicine”, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6456 “Integrated Bariatrics”.
- 2019-20: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”.
- 2020-21: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”.
- 2021-22: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”.
- 2022-23: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”.
- 2023-24: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”.
- 2024-25: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, “PMC Endocrinology”, Course Director, “PMC Autoimmune Diseases, Gastroenterology & Dermatology”, Course Director, “PMC Endocrinology Online”.
- 2025-26: Course Director, GMS 6201 “Basic Medical Biochemistry”, Course Director, GMS 6706 “Basic Medical Neurosciences”, Course Director, HIM 6018 “e-Healthcare Ethics”, Course Director, GMS 6604 “Human Structure and Function”, Course Director, GMS 6871 “Health Sciences Ethics”, Course Director, “PMC Endocrinology”, Course Director, “PMC Autoimmune Diseases, Gastroenterology & Dermatology”, Course Director, “PMC Endocrinology Online”, Course Director, “PMC Neurology, Cardiology, Memory Maintenance & Psychiatry”, Course Director, “PMC Immunology, Toxicology & Oncology”.
- Member, MCOM GME OBGYN Fellowship in Molecular Oncology.

GRADUATE PROGRAM DEVELOPMENT

M.D./Ph.D. Program in Medical Sciences (2007)

Master’s Program in Bioinformatics and Computational Biology (2003)

Master's Program in Medical Sciences

Biochemistry and Molecular Biology concentration (2004)

Molecular Medicine concentration (2007)

Health Sciences concentration (2008)

Metabolic and Nutritional Medicine concentration (2008)

Molecular Oncology concentration (2024)

Master's Program in Biotechnology (2007)

Master's Program in Health Informatics (2011)

Graduate Certificate in Bioinformatics (2005)

Graduate Certificate in Biotechnology (2005)

Graduate Certificate in Biochemistry and Molecular Biology (2005)

Graduate Certificate in Molecular Medicine (2006)

Graduate Certificate in Cardiovascular Engineering (2006)

Graduate Certificate in Health Sciences (2007)

Graduate Certificate in Medical Biochemistry, Microbiology and Immunology (2007)

Graduate Certificate in Biomedical Ethics (2008)

Graduate Certificate in Pharmacy Sciences (2009)

Personalized Medicine Certification (2024)

Personalized Medicine Certification in Therapeutic Plasma Exchange (2025)

Microcredential in Health Informatics (2025)

RESEARCH TRAINING

Christopher Kay, Ph.D., Postdoctoral Fellow, 1985-90.

David Ramsden, Ph.D., Postdoctoral Fellow, 1985-1986.

Gregory Quinn, Ph.D., Postdoctoral Fellow, 1992-1995.

Ian Prosser, Ph.D., Postdoctoral Fellow, 1994.

Veronica Pollock, Ph.D., Postdoctoral Fellow, 1994-1997, 2000-2002.

Mark E. Anderson, Ph.D., Postdoctoral Fellow, 1995-1999.

Veronica Pollock, Graduate Student, 1987-1994.

David Segal, Graduate Student, 1986.

Claribel Torres, Graduate Student, 1989.

Anthony Trimboli, Graduate Student, 1990-1997.

Yanmei Lu, Graduate Student 1992.

Dayami Lopez, Graduate Student, 1993.

Gregory Dady, Graduate Student, 1998.

Christopher Marohnic, Graduate Student, 1998-2003.

Kristie M. Main, Graduate Student, 1999-2000.

C. Ainsley Davis, Graduate Student, 1999-2004.

David A. Costa, Graduate Student, 2000.

Louis Crowley, Graduate Student, 2002-2007.

James Kempner, Undergraduate Student 1986-1988.

Schannelle Parker, Undergraduate Student, 1989-1990.

Mathew Clarke, Undergraduate Honors Student, 1991-1992.

Tiki Bakhshi, Undergraduate Honors Student, 1991-1992.

Ervin Nevsimal, High School Science Teacher, 1991-1993.

Joanne Gaw, Undergraduate Honors Student, 1992-1993.

Hilliary VanValkenberg, Undergraduate Honors Student, 1992-1995.

Jason Miller, Undergraduate Student, 1994-1995.

Ronnie Gundlach, Undergraduate Student, 1997-1999.

Benjamin Keselowsky, Undergraduate Honors Student, 1997-1998.

Hector Hernandez, Undergraduate Student, 1998-2000.

Jamie Lemon, Undergraduate Student, 1998-1999.

Shawn Desai, Undergraduate Honors Student, 1999-2002.

Michael Neuhaus, Undergraduate Student, 1999-2000, 2004.

Tanya Lapid, Undergraduate Student, 2000.
Dong Wei, High School Student, 2001.
Tara Catterson, Undergraduate Honors Student, 2002.
Marianne Chai, Undergraduate Honors Student, 2002.
Justin Hall, High School Student, 2002.
Tariq Alseguia, Undergraduate Student, 2002.
Jamie Lamb, Undergraduate Honors Student, 2003-present.
Glenn Roma, Graduate Student, 2003-present.
Anjali Tyagi, Graduate Student, 2004-2006.
Stavros Papandeou, Graduate Student, 2003-2006.
Jessica Olivera, High School Student, 2004.
Bernadette Marrero, Graduate Student, 2004.
Kirus Everett, Undergraduate Student, 2004-2005.
Brett Daggett, Graduate Student, 2005-present.
Joshua Smith, Undergraduate Student, 2005-present.
Kaitlin Lenhart, Undergraduate Honors Student, 2006.

SERVICE

UNIVERSITY SERVICE

Departmental Assignments:

1984-1986: Organizer of Department Seminar Program.
1990-1993: Fiscal Administrator, Molecular Spectroscopy, Protein Structure and Molecular Graphics Core Facilities.
1993-1994: Chair, Departmental Graduate Curriculum Committee.
1998-1999: Organizer, Chinsegut Hill Departmental Research Retreat.
1999-2004: Graduate Recruitment Committee.
2002- 2009: Director, Master's Program in Bioinformatics and Computational Biology.
2003- 2009: Director, Master's Program in Biochemistry and Molecular Biology.
2004-present: Director, Biochemistry and Molecular Biology Certificate Programs.

College of Medicine Committees:

1983-1985: Learning Resource Center Committee.
Computer Council.
1985-1988: Medical Student Admissions Committee.
Learning Resource Center Committee.
1988-1989: Committee on Institutional Grants Administration
1989-1990: Committee for Institutional Grant Administration.
LCME College of Medicine Evaluation Committee, Task Force H.
Learning Resource Center Committee.
1990-1991: Research Committee, (Sub-Committee for Institutional Grant Administration).
1991-1992: LCME College of Medicine Evaluation Committee, Task Force H.
1992-1993: Research Committee, (Sub-Committee for Research Planning).
1993-1994: Research Committee, (Sub-Committee for Grant Awards).
1994-1995: Chair, Research Committee.
1995-1997: Space Committee.
1997-1998: Curriculum Committee.
1998-1999: LCME College of Medicine Evaluation Committee VIe.
1997-2007: Faculty Council.
2002-2003: Vice President, Faculty Council.
2003-2004: President, Faculty Council.
2003-2005: Research Committee.
2003-2004: HSC Professional Integrity Advisory Council.
2003-2005: Voluntary Faculty Committee.
2004-2005: Academic Computing Committee.
2004-2005: Immediate Past President and Vice President, Faculty Council.

- 2004-2005: Faculty Development SWG.
2005: AIMS Council.
2005-2006: President, Faculty Council.
2005-2006: Chair, LCME College of Medicine Evaluation Committee I - Institutional Setting:
Governance and Administration
2008-2010: COM Educational Value Units Committee
2009-2012 COM Medical Student Admissions Committee

University Committees:

- 1984-1985: Peer Review Committee, Research and Creative Scholarship Grants.
Faculty Research and Development Park Advisory Committee.
1985-1986: Peer Review Committee, Research and Creative Scholarship Grants.
Faculty Research and Development Park Advisory Committee.
1988-1991: Faculty Senate.
1989-1990: Faculty Senate Committee on Committees.
1993-1994: IBS Interdisciplinary Ph.D. Program Committee.
1995-1996: IBS Advisory Board.
1996-2000: Graduate Council.
1997-1998: Chair, Graduate Council Fellowship Sub-Committee. 2003-2010: Faculty Senate.
2004: Committee on Structure and Function of the Senate.
2003-2006: Sergeant-at-Arms, Faculty Senate.
2005-2008: Honors and Awards Council.
2007: Budget Priorities Advisory Taskforce.
2008: Marshall Student Center Board.
2008: Senate Administrative Review Task Force.
2008: III Task Force: Committee on Program Development and Teaching.
2009: Faculty Senate Resolution Implementation Committee.
2007-2009: USF Postdoctoral Scholar Task Force, Co-Chair.
2008-2012: USF Faculty Senate Executive Committee.
2009-2010: USF Postdoctoral Scholar Advisory Committee.
2023-2024: USF Graduate Recruitment and Retention Committee.

Ph.D. Dissertation Committees:

- Kathryn Zeiler, Ph.D. Candidate in Biochemistry, 1983-1989.
Thomas Arnold, Ph.D. Candidate in Biochemistry, 1983-1989.
Veronica Pollock, Ph.D. Candidate in Biochemistry, 1989-1994 (Major Professor).
Tie-Yue Liu, Ph.D. Candidate in Chemistry, 1990 (Examining Committee Chair).
Roy Sandip, Ph.D. Candidate in Toxicology, 1990-1993.
Anthony Trimboli, Ph.D. Candidate in Biochemistry, 1990-1997. (Major Professor).
Laura Pendleton, M.S. Ph.D. Candidate in Biochemistry, 1990-1992.
Carl J. Biver, Ph.D. Candidate in Chemistry, 1992 (Examining Committee Chair).
Gary Hellerman, Ph.D. Candidate in Biochemistry, 1993-1998.
James Liberatore, M.Sc. Ph.D. Candidate in Biochemistry, 1994-1997.
Cathy Cone, Ph.D. Candidate in Chemistry, 1995 (Examining Committee Chair).
Hyun I. Park, Ph.D. Candidate in Chemistry, 1996-1999.
Jason D. Palcic, Ph.D. Candidate in Chemistry, 1996-2000.
Anton Cheltzov, Ph.D. Candidate in Biochemistry, 1998-2002.
Zen Shi, Ph.D. Candidate in Biochemistry, 1998-present.
Christopher C. Marohnic, Ph.D. Candidate in Biochemistry, 1998-2003 (Major Professor).
Kristie M. Main, Ph.D. Candidate in Biochemistry, 1999-2002 (Major Professor).
C. Ainsley Davis, Ph.D. Candidate in Biochemistry, 1999-2004 (Major Professor).
Derek Poore, Ph.D. Candidate in Chemistry, 2001-2002.
Louis Crowley, Ph.D. Candidate in Biochemistry, 2002-2007 (Major Professor).
Glenn Roma, Ph.D. Candidate in Biochemistry, 2003-2008 (Major Professor).
Brett Daggett, Ph.D. Candidate in Biochemistry, 2005-2007 (Major Professor).
Emma Farrell, Ph.D. Candidate in Chemistry, 2007-present

MaryJolene Holloway, Ph.D. Candidate in Molecular Medicine, 2008-present.

Master's Candidates:

Stavros Papandreou, M.S. Candidate in Biochemistry, 2003-2006 (Thesis Advisor).

Anjali Tyagi, M.S. in Bioinformatics and Computational Biology, 2004-2006 (Thesis Advisor).

Other Service:

1983-1984: Interviewer, College of Medicine Admissions.

1984-1985: Interviewer, College of Medicine Admissions.

1988-1994: Interviewer, College of Medicine Admissions.

Faculty and Administrative Search Committees:

1989-1990: Assistant Professor, Biochemistry and Molecular Biology, College of Medicine.

1990-1991: Assistant Professor, Institute for Biomolecular Science.

1998-1999: Assistant Professor, Chemistry, College of Arts and Science.

2002-2005: Assistant Professor, College of Public Health.

2004: Vice President for Health Sciences and Dean, College of Medicine.

2004-2005: Associate Vice President for Research, Health Sciences. 2006: Robert and Diane Roskamp Chair in Biological Psychiatry.

2006: Professor and Chair, Molecular Medicine, College of Medicine.

2006: Associate Dean for Research, College of Medicine.

2006: Assistant Professor, Molecular Medicine, College of Medicine.

2007: Vice President for Research and Innovation, University of South Florida (Chair).

2008: Chair of Molecular Medicine, College of Medicine.

2008: Provost & Executive Vice President, University of South Florida (Co-Chair).

PROFESSIONAL SERVICE

Member: American Heart Assoc. Florida/Puerto Rico Affl. Hillsborough Community Board (2005, 2006).

Member: Physical Biochemistry Study Section, NIH (*ad hoc* Oct. 2000, June 2004).

Member: Peer Review Committee 5C, Am. Heart Assoc., Florida/Puerto Rico Affiliate (Mar, 2004; Mar, 2005; Mar, 2006; Mar, 2007).

Member: Special Emphasis Panel (S10), NIH (Oct. 2000)

Member: Biochemistry Study Section, NIH (*ad hoc* 1999, 2000).

Chair: Physical Biochemistry Fellowship Study Section, NIH (1998).

Member: Physical Biochemistry Study Section, NIH (1995-1999).

Member: Technical Evaluation Group, SBIR Program, NIH (*ad hoc* 1995).

Member: Physical Biochemistry Study Section, NIH (*ad hoc* 1994, Feb & Oct panels).

Member: Physical Biochemistry Study Section, NIH (*ad hoc* 1993).

Member: USDA Competitive Grants Review Panel (Nitrogen Fixation) (1992).

Member: Physical Biochemistry Study Section, NIH (*ad hoc* 1992).

Member: Metallobiochemistry Study Section, NIH AREA Proposals (*ad hoc* 1989-90).

Member: Metallobiochemistry Study Section, NIH AREA Proposals (*ad hoc* 1990-91).

Reviewer: National Science Foundation Grant Proposals.

Reviewer: National Institutes of Health Grant Proposals.

Reviewer: US Department of Agriculture Grant Proposals.

Reviewer: Jeffress and Gwathmey Memorial Trust Grant Proposals.

Reviewer: Harris Fellowships, Grinnell College, Iowa.

Reviewer: Proc. Natl. Acad. Sci. USA.

Reviewer: Biochemistry.

Reviewer: J. Biological Chemistry.

Reviewer: Plant Physiol.

Reviewer: Arch. Biochem. Biophys.

Reviewer: Biochim. Biophys. Acta.

Reviewer: Biochim. Biophys. Acta. Reviews on Bioenergetics.

Reviewer: Bioscience.

Reviewer: J. Gerontology.

Reviewer: Physiol. Plantarum.
Reviewer: The Plant Cell.
Reviewer: Cellular and Molecular Life Sciences.
Reviewer: Haematologica.
Session Chairman: Florida Am. Chem. Soc. meeting, Tampa, 1988.
Senior Judge, Biochemistry, Florida State Science & Engineering Fair, 1988.
Senior Judge, Biochemistry, Florida State Science & Engineering Fair, 1990.
Senior Judge, Biochemistry, Florida State Science & Engineering Fair, 1994.
Judge, Biochemistry, International Science & Engineering Fair, Orlando, 1991.

MEMBERSHIPS

National Association of Advisors for the Health Professions (NAAHP)
American Society for Biochemistry and Molecular Biology (ASBMB) - Elected 1982

MEETINGS

Organizer, 10th Annual Meeting of Florida Biochemists and Molecular Biologists, Clearwater Beach, FL 1990.
Co-Organizer, "Nitrogen Assimilation: Molecular and Genetic Aspects", University of South Florida, Tampa, May 4-9, 1997.

INVITED PRESENTATIONS

"Magnetic Interactions in Xanthine Oxidase", Charles F. Kettering Research laboratories, Yellow Springs, Ohio, 1981.
"Redox Potentials of the Molybdenum and Heme in Sulfite Oxidase", National Institutes of Environmental Health Sciences, Research Triangle Park, North Carolina, 1981.
"Probing Methanogens with EPR Spectroscopy", Virginia Polytechnic Institute, Blacksburg, Virginia, 1981.
"Magnetic Interactions in Xanthine Oxidase", 13th Southeastern Region Magnetic Resonance Conference, Durham, North Carolina, 1981.
"EPR and Potentiometric Studies of the Molybdenum Center in Xanthine Oxidase and Other Mo-Containing Enzymes", Fourth Intl. Conf. on the Chemistry and Uses of Molybdenum, Golden, Colorado, 1982.
"Application of Maleimide Spin Labels to Monitor Changes in Erythrocyte Membrane Fluidity", 14th Southeastern Region Magnetic Resonance Conference, Atlanta, Georgia, 1982.
"Spectroscopic Properties of Formate Dehydrogenase from *Methanobacterium formicum*", Department of Biochemistry, University of South Florida, 1982.
"Applications of Spin Labels in Biology", Department of Pharmacology, University of South Florida, 1984.
"Structure/Function Relationships of Molybdenum-Containing Proteins", University of Miami, 1988.
"Electron Transfer in Nitrate Reductase", Advanced Course on Inorganic Nitrogen Metabolism, Seiano di Vico Equense, Italy, 1989.
"Sequencing Sulfite Oxidase", Department of Biochemistry and Molecular Biology, University of South Florida.
"Structure-Function Relationships in Complex Molybdenum-Containing Enzymes", Department of Chemical Engineering, University of South Florida, 1990.
"A Conserved Cysteine in Molybdenum Oxotransferases", Department of Biochemistry and Molecular Biology, University of South Florida, 1990.
"Mitochondrial Myopathies", Neurology Conference, University of South Florida, College of Medicine, 1991.
"Electrochemical and Structural Analysis of Nitrate Reductase", 1992 Miami Winter Symposium, Miami Beach, 1992.
"Nitrate Reductase: Gene Expression and Protein Engineering", Gene Expression Club, University of South Florida, College of Medicine, 1993.
"Construction and Expression of a Chimeric Flavocytochrome *b₅*", 14th Annual Florida Biochemists Meeting, Clearwater Beach, FL, 1994.
"Structure/Function Studies of Assimilatory Nitrate Reductase", National Science Foundation, Washington, DC, 1994.

- “Construction, Expression and Mutagenesis of Flavocytochrome b_5 ”, Suncoast Biomolecular Science Conference, University of South Florida, 1994.
- “Nitrate Reductase: Functional Domains in a Complex Bimetalloflavoprotein”, Metalloenzyme Colloquium, Center for Metalloenzyme Studies, University of Georgia, 1994.
- “Functional Domains in Nitrate Reductase”, Department of Chemistry, University of South Florida, 1995.
- “Functional Domains in Nitrate Reductase”, Department of Chemistry, Florida Institute of Technology, 1995.
- “Constructing a Model System for Enzymopenic Hereditary Methemoglobinemia”, Department of Biochemistry and Molecular Biology, University of South Florida, 1995.
- “Functional Domains in Nitrate Reductase”, Gordon Conference on Nitrogen Metabolism, Colby-Sayer College, 1998.
- “Molecular Dissection of Nitrate Reductase: A Complex Metalloflavoprotein”, Department of Biochemistry and Molecular Biology, University of South Florida, 1999.
- “Functional Domains in Nitrate Reductase”, Gordon Conference on Molybdenum and Tungsten Enzymes, Plymouth State College, 1999.
- “Functional Domains in Nitrate Reductase”, Department of Chemistry and Biochemistry, Utah State University, 2000.
- “Altered Pyridine Nucleotide Specificity of Nitrate Reductase”, FAME 2000, Florida ACS, 2000.
- “Functional Domains in Assimilatory Nitrate Reductase”, Brookhaven National Laboratory, 2000.
- “Cytochrome b_5 Reductase: Using Protein Engineering to Relate Structure to Function”, Department of Chemistry, University of South Florida, 2001.
- “Assimilatory Nitrate Reductase: A Reductionist's Approach to Probing Structure-Function Relationships”, NAMGA2002, Cordoba, Spain, 2002.
- “Assimilatory Nitrate Reductase: A Reductionist's Approach to Probing Structure-Function Relationships in a Complex Metalloflavoprotein”, Department of Biochemistry, Virginia Polytechnic Institute, 2003.
- “Functional Expression and Analysis of the Molybdenum Domain of Spinach Nitrate Reductase”, Gordon Conference on Molybdenum and Tungsten Enzymes, Kimball Union Academy, 2003.

WORKSHOPS AND COURSES

- “Metals in Biology”, Gordon Conference, Ventura, CA, 1989
- “Microcomputers in Medical Education”, University of South Florida, College of Medicine, Tampa, FL. March 27-29, 1985 (Faculty).
- “Faculty Leadership Development”, University of South Florida, College of Medicine, Tampa, FL. 2002-2004.

FACULTY AND PROFESSIONAL DEVELOPMENT

- Certified Online Instructure
- Certified Online Proctor
- Certified AI Whisperer
- Certified Course Enhancement with Generative AI
- Computer and Information Security certification
- Student Engagement training
- Academic Integrity Plan development
- Application of Poll Everywhere
- HIPAA training
- Canvas Quiz development
- Canvas Grading and Assessment Workflow development
- Physician Business Ethics