

DANIEL A. KING, PH.D.

Professor of Chemistry
Department of Chemistry & Biochemistry, Taylor University

EMPLOYMENT

2013 – Present Professor: Taylor University, Upland, IN
2008 – 2017 Faculty Athletics Representative: Taylor University, Upland, IN
2008 – 2013 Associate Professor: Taylor University, Upland, IN
2005 – 2008 Assistant Professor: Taylor University, Upland, IN
2002 – 2005 Assistant Professor: Bethel University, St. Paul, MN

Courses Taught:

College Chemistry I & II	Introduction to Forensic Science
Analytical Chemistry I & II	Environmental/Forensic Toxicology
Introduction to General, Organic, & Biochemistry I	Environmental Chemistry
Chemistry for Living	Chemistry Thesis
Secondary Science Methods	Directed Research
	The Nature of Science

EDUCATION

1998 - 2002 **Doctor of Philosophy** – Analytical Chemistry
The University of Georgia, Athens, Georgia
1994 - 1998 **Bachelor of Science** – Chemistry Education and Mathematics
Huntington College, Huntington, Indiana

GRADUATE RESEARCH

1998 - 2002 **Department of Chemistry** - University of Georgia,
Complex Carbohydrate Research Center, Athens, Georgia.
Advisor: Dr. Ron Orlando
Dissertation: “Development of Novel Mass Spectrometric Procedures for
Characterizing Proteins; New Probe Surfaces and On-Probe Procedures
for MALDI Analysis and Amide Hydrogen-Deuterium Exchange Mass
Spectrometry to Study Protein-Carbohydrate Interactions.”

TECHNICAL SKILLS: Chromatography, Mass Spectrometry, Spectroscopies, Computational Chemistry

HPLC, GC, GC-MS, MALDI-MS, LC-MS, LC-MS/MS, UV-Vis Absorbance &
Fluorescence, AAS, NMR, FTIR, and Acronyms

PROFESSIONAL MEMBERSHIPS

American Chemical Society
American Scientific Affiliation

PUBLICATIONS: (Undergraduate Coauthors in bold)

ORCID ID: 0000-0002-5993-0814

Daniel King. “The Chemical Elements in the Bible: Metaphors for Sanctification and Judgement”, *God and Nature*, accepted, 2023.

Bradley J. Kendall, **Austin Layton, Emily Daniels, Annika Ward**, Daniel A. King, and Brandon Dykstra. “Effects of Cardiorespiratory Fitness on Changes in Secretory Immunoglobulin A Following a Maximal Exercise Test”, *Gazzetta Medica Italiana*, **128**, 2023.

Daniel A. King, Carie A. King, Daniel G. Hammond, Patricia L. Stan. “Using Scientific Literature to Affect Students’ Identification with the Scientific Discourse Community”, *Journal of Chemical Education*, **98**, 506-509, 2020.

D. Brandon Magers, Patricia L. Stan, and Daniel A. King. “Graphing Activity for the First General Chemistry Lab Session to Introduce Data Processing”, *Journal of Chemical Education*, **96**, 1676-1679, 2019.

Andrew Pemberton, D. Brandon Magers, and Daniel A. King. “Integrated TGA, FTIR, and Computational Laboratory Experiment”, *Journal of Chemical Education*, **96**, 132-136, 2019.

Marissa Kneer and Daniel King. “Open-Loop Geothermal Discharge Stream Design Affects the Precipitation of Calcium”, *Proceedings of the Indiana Academy of Science*, **126**, 42-47, 2017.

Kim Cleary, Scott Fenstermacher, Brayton Kiedrowski, Ben Hayes, Olivia Auell, Caroline Chow, Erik Hayes, Daniel King. “The Effects of Acute Exercise and Meat Fasting/Feasting on Urinary 3-methylhistidine by Liquid Chromatography – Mass Spectrometry”, *Journal of Undergraduate Chemistry Research*, **14**, 36-39 2015.

Emily Hart, Caroline Chow, Patricia Stan, and Daniel King, “Methods for Essential Tremor Assessment: Acoustic Tremor Monitoring (ATM) and Rhythmic Spirals (RS) Methods”, *American Journal of Undergraduate Research*, **12**, 93-100, 2015.

Timothy Griffiths, Emily Hart, Patricia Stan, and Daniel King, “Analysis of Iron and Calcium in a Geothermal System Outflow Stream”, *Proceedings of the Indiana Academy of Science*, **122**, 35-29, 2013.

Gerardo Gutierrez-Sanchez, Daniel King, Gabre Kemp, and Carl Bergmann, “SPR and differential proteolysis/MS provide further insight into the interaction between PGIP2 and EPGs”, *Fungal Biology*, April 12, 2012.

Daniel King, **Jorge Fernandez**, and Ruth Nalliah, “Writing Instrument Profiles for Mastery of Instrumental Analysis”, *Journal of Chemical Education*, **89**, 728-731, 2012.

Andy Davisson, Katie Speidel, Jason Stegink, and Daniel King, “A Computational Approach to Understanding Crop Disease Resistance and Susceptibility”, *Journal of Undergraduate Chemistry Research*, **11**, 1, pp20-23, 2012.

John Labavitch, Ann Powell, Alan Bennett, Daniel King, and Rachell Booth, “Optimizing Grape Rootstock Production and Export of Inhibitors of *Xylella fastidiosa* Polygalacturonase Activity”, Proceedings of the 2011 Pierce’s Disease Research Symposium, pp136, 2011.

Patricia Stan, Daniel King, and Daniel Hammond, "General Chemistry Laboratory II", Linus Publications, Inc. Deer Park, NY, 2010.

Brad King, Lynne Normant, Daniel Storey, and Daniel King, "Acetylation Labeling Mass Spectrometry: A Method for Studying Protein Conformations and Interactions", *Proceedings of the Indiana Academy of Science*, **118**, 107-113, 2009.

Patricia Stan, Daniel King, and Daniel Hammond, "General Chemistry Laboratory", Linus Publications, Inc. Deer Park, NY, 2009.

Jae-Min Lim, Kazuhiro Aoki, Peggi Angel, **Derek Garrison,** Daniel King, Michael Tiemeyer, Carl Bergmann, and Lance Wells, "Mapping Glycans onto Specific N-Linked Glycosylation Sites of *Pyrus Communis* PGIP Redefines the Interface for EPG:PGIP Interactions", *Journal of Proteome Research*, **8**, 673-680, 2009.

Kelly Pugh, Ryan Poe, and Daniel King, "Quicklime Purity Analysis by Calorimetry", *Journal of Undergraduate Chemistry Research*, **7**, 23-27, 2008.

Bryan D. Woosley, Young Hwan Kim, V.S. Kumar Kolli, Lance Wells, **Ryan Poe,** Dan King, Ron Orlando, and Carl Bergmann, "Glycan analysis of recombinant *Aspergillus niger* endopolygalacturonase A", *Carbohydrate Research*, **341**, 2370-2378, 2006.

Bryan Woosley, Min Xie, Lance Wells, Ron Orlando, **Derek Garrison,** Daniel King, Carl Bergmann, "Comprehensive Glycan Analysis of Recombinant *Aspergillus niger* Endopolygalacturonase C", *Analytical Biochemistry*, **354**, 43-53, 2006.

Christopher Jones, Jamie Schwendinger, and Daniel King, "Analysis of Semi-Volatile Organic Compounds from Parking Lot Runoff in nearby Wetlands using GC/MS", *Journal of Undergraduate Chemistry Research*, **2**, 41, 2006.

M. Xie, G. H. Krooshof, J. A. E. Benen, J. A. Atwood, III, D. King, C. Bergmann, and R. Orlando, "Post-translational modifications of recombinant *B. cinerea* EPG6", *Rapid Commun. Mass Spectrom.* **19**, 3389-3397, 2005.

C.W. Bergmann, L. Stanton, D. King, R.P. Clay, G. Kemp, R. Orlando, A. Darvill, and P. Albersheim; "Recent observations on the specificity and structural conformation of the polygalacturonase-polygalacturonase inhibiting protein system", In *Advances in Pectin and Pectinase Research* (F. Voragen, H. Schols, and R. Visser, Eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 277-291, 2003.

Daniel King, Carl Bergmann, Ron Orlando, Jacques A. E. Benen, Harry C. M. Kester, and Jaap Visser; "Use of Amide Exchange Mass Spectrometry To Study Conformational Changes within the Endopolygalacturonase II – Polygalacturonic Acid – Polygalacturonase Inhibiting Protein System", *Biochem.* **41**, 10225-10233, 2002.

Daniel King, Michelle Lumpkin, Carl Bergmann, and Ron Orlando; "Studying protein-carbohydrate interactions by amide hydrogen/deuterium exchange mass spectrometry", *Rapid Commun. Mass Spectrom.* Vol. 16, No. 16, 1569-1574, 2002.

Shanhua Lin, Pete Tornatore, Daniel King, Ron Orlando, Scot R. Weinberger; "Limited acid hydrolysis as a means of fragmenting proteins isolated upon ProteinChip® array surfaces", *European Journal of Mass Spectrometry.* **9**, 1172-1184, 2001.

PRESENTATIONS

Oliva Jeanette, Catie Robbins, Austin Layton, Brayden Layton, Daniel A. King, Daniel Kaluka, Brandon Dykstra, & Bradley Kendall. “The Effects of Rest, Moderate Intensity, and High Intensity Exercise on Secretory Immunoglobulin A Levels in Collegiate Cross Country Runners”, Midwest American College of Sports Medicine Regional Conference, Indianapolis, IN, Fall 2023.

Noah Schwartz, Jakeb Kinsley, and Daniel A. King. “Characterizing the Isoelectric Point of Crop Pathogen Proteins”, Undergraduate Research Conference, Butler University, Spring 2023.

Carie A. King and Daniel A. King. “Facilitating Interdisciplinary Collaboration: Focused Literacy Instruction in Discourse Community”, Conference on College Composition and Communication, Chicago, IL, February 2023.

Daniel A. King. “Document Analysis”, Engaging Lectures Series, BCTLE, Taylor University, February 2023.

Austin Layton, Emily Daniels, Annika Ward, Daniel King, Brandon Dykstra and Bradley Kendall. “The Relationship between Cardiorespiratory Fitness, Body Mass Index and Changes in Salivary Immunoglobulin A (SIgA) following Maximal Exercise”, Midwest American College of Sports Medicine Regional Conference, Indianapolis, IN, October 2022.

Daniel A. King. “Celebrating Unity and Diversity Through the Use of Forensics/Science Perspectives”, Empower, Taylor University, July 2022.

Annika Ward, Emily Daniels, Austin Layton, Ryan Reimschisel, Dan King, Brandon Dykstra, Bradley Kendall. “The Effects of Cardiorespiratory Fitness on Changes in Salivary Immunoglobulin A (SigA) Following Maximal Exercise”, American College of Sports Medicine, San Diego, June 2022.

Ashlyn Eisenhart, Drew Victor, and Daniel King. “The Effect of pH on Crop Pathogenesis”, Celebration of Scholarship, Taylor University, Spring 2022.

Daniel King. “Literature Influencing Science: The Role of Sherlock Holmes in the Development of Forensic Science”, *Taylor Talks*, Summer 2020.

Paige Wagner, and Daniel King. “GC-MS Updating Database”, Undergraduate Research Conference, Butler University, Spring 2020.

Bailee Allen and Daniel King. “Metal Ion Distribution Across a Lake Fed by Geothermal System Discharge”, Undergraduate Research Conference, Butler University, Spring 2020.

Hannah Ewing, Makenna Holz, and Daniel King. “The Effect of Activity Level and Caloric Intake on a Brain-Health Protein, BDNF”, Undergraduate Research Conference, Butler University, Spring 2020.

Daniel King and Julie Borkin, “Human Identity and Wisdom in Communications and Science”, Senior Seminar Lecture, Spring 2020.

Daniel King. “Celebrating Unity and Diversity Through the Use of Forensic Science Perspectives”, Martin Luther King, Jr. Day Campus Presentation, Taylor University, January 2020.

Hannah Ewing, Bailee Allen, Makenna Holz, and Daniel King. “The Effect of Activity Level and Caloric Intake on a Brain-Health Hormone, BDNF” and “The Mapping of Hardness Ion Mobility Across Taylor Lake”, Taylor University’s Science Seminar Series, Fall 2019.

Makenna Holz, Hannah Ewing, and Daniel King. “The Effect of Diet and Activity on the Blood Plasma Levels of a Brain-Health Hormone”, Midwest American College of Sports Medicine, 2019.

Daniel King. “The Smell of Old Books – A Chemist’s Response”, Meeting of the Lewis and Friends Society, Fall 2019.

Julia Noonan, Zach Ham, Daniel King, and Erik Hayes, “The Effect of Low and High – Activity Workdays on Blood Serum Levels of Leptin and Ghrelin”, Midwest American College of Sports Medicine, 2018.

Zach Ham, Julia Noonan, Daniel King, and Erik Hayes, “The Acute Effect of Daily Activity Level on Plasma BDNF and TNF- α ”, Midwest American College of Sports Medicine, 2018.

Daniel A. King, D. Brandon Magers, and Patricia L. Stan, “A Redesign of the First General Chemistry Lab Session – Introducing the Research Process”, National Meeting of the American Chemical Society, New Orleans, 2018.

Ally Burke, Gabe Saliba, D. Brandon Magers, and Daniel King, “Characterization of the Mass Spectra Energetics of Butane and Propanol Derivatives via ab initio Methods”, National Meeting of the American Chemical Society, New Orleans, 2018.

YeChan Moon and Daniel King, “Observing Kinetics through Mass Spectrometry”, Butler Undergraduate Research Conference, Indianapolis, 2017.

Angela Bittner and Daniel King, “Assessment of the Parameters and Techniques of the Hoosier Riverwatch Water Quality Monitoring System for Chemical Analysis”, Butler Undergraduate Research Conference, Indianapolis, 2017.

Jaylin Gadel and Daniel King, “How Consistent is Volunteer Water Monitoring Data? – From Elementary School Students to Professional Technicians”, Butler Undergraduate Research Conference, Indianapolis, 2017.

YeChan Moon and Daniel King, “Effects of a Geothermal Stream on a Nearby Lake”, Butler Undergraduate Research Conference, Indianapolis, 2016.

Marissa Kneer and Daniel King, “Geothermal Output Stream Design: Impacts on Local Water”, Butler Undergraduate Research Conference, Indianapolis, 2016.

Emily Hart, Caroline Chow, Patricia Stan, and Daniel King, “Methods for Essential Tremors Assessment: Acoustic Tremor Monitoring (ATM) and Rhythmic Spirals (RS) Methods”, Indiana Academy of Science, Indianapolis, 2015.

Jonathon Gray, Nathan Pavey, Daniel King, “A Novel Method for Observing the Rate Law of High Speed Reactions”, Indiana Academy of Science, Indianapolis, 2015.

Joe Kasper, Daniel Johnson, Erik Hayes, and Daniel King. “Muscle Fiber Typing by Identification of the Myosin Heavy Chain Using LCMS”, Experimental Biology, Boston, 2013.

Scott Fenstermacher, Kim Cleary, Brayton Kiedrowski, Daniel King, and Erik Hayes. “Development of LCMS Method for Monitoring the Effects of Meat Feasting, Fasting, and Exercise on Urinary 3MH Levels”, Experimental Biology, Boston, 2013.

Invited speaker to Taylor University’s New Faculty Integration of Faith and Learning course discussing the faith integration within the science curriculum, April 2013.

Olivia Auell, Benjamin Hayes, Caroline Chow, Daniel King, and D.G. Hammond, “Rapid Method for Monitoring Muscle Protein Metabolites by LC-MS”, Experimental Biology, San Diego, CA., 2012.

Invited speaker to Taylor University’s New Faculty Integration of Faith and Learning course discussing the faith integration within the science curriculum, April 2012.

John Labavitch, Zachary Chestnut, Victor Haroldsen, Ann Powell, Alan Bennett, Daniel King, and Rachell Booth, “Optimizing Grape Rootstock Production and Field Trial Evaluation of PGIPs”, 2011 Annual Pierce’s Disease Symposium, Sacramento, CA, Dec. 2011.

Invited speaker to Taylor University’s New Faculty Integration of Faith and Learning course discussing the faith integration within the science curriculum, April 2011.

Lead a Coaching Coffee session on the Integration of Faith and Learning, January 2011.

Guest Lecturer to TU’s exercise physiology class discussing proteomics and its future roll in medical diagnosis, fall 2010.

Invited speaker to Taylor University’s New Faculty Integration of Faith and Learning course discussing the faith integration within the science curriculum, April 2010.

John Labavitch, Ann Powell, Alan Bennett, Daniel King, Rachell Booth, “Optimizing Grape Rootstock Production and Export of Inhibitors of *Xylella fastidiosa* Polygalacturonase Activity”, Proceedings of the 2009 Pierce’s Disease Research Symposium, Sacramento, CA, 2009.

Invited speaker to Taylor University’s New Faculty Integration of Faith and Learning course discussing the faith integration within the science curriculum, April 30, 2009.

Distinguished Lecture Award presentation, “A Caterpillar or a Butterfly: Protein Biomarker Discovery and the Future of Medicine”, May 1, 2009.

Invited panelist to discuss Faith and Learning Integration with new TU faculty, Fall 2008.

Matthew Reichert, Daniel King, “Modeling of Crop Pathogenic Enzymes”, Indiana Academy of Science, Fall 2007.

Nick Moser, Daniel King, “A Plug-flow Kinetics Apparatus”, Indiana Academy of Science, Fall 2007.

Ryan Poe, Derek Garrison, Ron Orlando, Carl Bergmann, Dan King, National Meeting of the American Chemical Society, Spring 2006.

Dan King, Tasneem Bahrainwala, Ron Orlando, National Meeting of the American Chemical Society, Spring 2006.

Ryan Poe, Dan King, “Mass Spectrometric and Computational Techniques used in Parallel to Elucidate the Mechanism by which Polygalacturonases Hydrolyze Polysaccharides”, Midwest Scholars Conference, February 2006.

Invited speaker at the 41st Annual Science Seminar Series at Taylor University, November 14, 2005.
Lecture was entitled “Life or Death: Understanding Protein – Protein Interactions in the Study of Plant Pathogenesis”.

K. Rohly, D. King, N. Istephanous, **B. Murrin, C. Jones**, "Insulin Interactions with Metallic Surfaces Determined by MALDI Mass Spectrometry", Medtronic Science and Technology Conference, October 4, 2005.

Daniel A. King, **Anna Kenney**, Ron Orlando, and Carl Bergmann, “Locating Protein Interactions through Differential Proteolysis and Mass Spectrometry”, Minnesota Mass Spectrometry Discussion Group – Fall Meeting, Dec. 2003.

I. Trausch, N. Istephanous, K. Rohly, D. King, “Protein Interactions with metal Oxide Surfaces”, Medtronic Science & Technology Conference, Medtronic World Headquarters, Minneapolis, October 1, 2003.

Invited guest speaker at the CCRC (Complex Carbohydrate Research Center) at the University of Georgia in July of 2003. Lecture was entitled “Adventures in Modeling PGIPs for the Selection of Site Mutations”.

Daniel A. King, Ron Orlando, and Carl Bergmann, “Locating Protein Interactions through Differential Proteolysis”, ASMS Conference on Mass Spectrometry and Allied Topics, Montreal, June 2003.

Daniel A. King, “Remote Access Instruction: Bringing Instrumentation into the Classroom”, Classrooms of the Future IX, Associated Colleges of the Twin Cities, May 20, 2003.

Daniel King and Ron Orlando, “Protein Conformational Changes During Protein-Carbohydrate Binding Studied by Hydrogen/Deuterium Exchange Mass Spectrometry”, ASMS Conference on Mass Spectrometry and Allied Topics, Orlando, FL, June 2002.

Daniel A. King, Janette Cummings, Ron Orlando. “Recycling MALDI Samples”, SERMACS, Savannah, GA, September 2001.

Daniel A. King, Janette Cummings, Ron Orlando. “Recycling MALDI Samples”, ASMS Conference on Mass Spectrometry and Allied Topics, Chicago, IL, May 2001.

Daniel A. King, Ron Orlando. “Characterizing Protein Conformation by Hydrogen-Deuterium Exchange-MS”, Southwest/Southeast Regional Meeting of the American Chemical Society (SW/SERMACS) New Orleans, LA, December, 2000.

