

Craig McClure

Washington University
Department of Physics
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EDUCATION:

University of Michigan: Doctor of Philosophy, Chemistry, August 2004

Dissertation: "Investigation of Biological Metal Sites by X-ray Fluorescence and X-ray Absorption Spectroscopy"

University of Michigan: Master of Science, Chemistry, April 1999

University of Northern Iowa: Bachelor of Arts, Biotechnology; Bachelor of Science, Chemistry, May 1997

ACADEMIC APPOINTMENTS:

Academic Learning Program Coordinator, Department of Physics, Washington University in St. Louis, August 2023 - present

Teaching Professor, Department of Chemistry, Drexel University, September 2021 – August 2023

Associate Teaching Professor, Department of Chemistry, Drexel University, September 2015 – August 2021

Associate Professor, Department of Chemistry, University of Alabama at Birmingham,
Oct. 2010 – August 2015

Adjunct Associate Professor, Department of Mechanical Engineering, University of Alabama at Birmingham,
Feb. 2012 – August 2015

Assistant Professor, Department of Chemistry, University of Alabama at Birmingham,
Aug. 2005 – Sept. 2010

Instructor, Department of Chemistry, University of Alabama at Birmingham, Aug. 2004 – Aug. 2005

Lecturer, Department of Chemistry, University of Michigan, Jan. 2004 – April 2004

TEACHING EXPERIENCE:

Washington University in St. Louis, 2023- present

General Studies 250/251 – Practical Applications of Academic Mentoring (Lecture)

General Studies 275 – Seminar in Academic Mentoring (Lecture)

Physics 191 – Physics I (Recitation and Peer-Led Team Learning)

Physics 192 – Physics II (Recitation and Peer-Led Team Learning)

Drexel University, 2015 - 2023

Chemistry 101 – General Chemistry I (Lecture, Laboratory, and Recitation)

Chemistry 102 – General Chemistry II (Lecture, Laboratory, and Recitation)

Chemistry 108 – Health Chemistry I (Lecture and Recitation)

Chemistry 111 – General Chemistry I (Recitation)

Chemistry 122 – General Chemistry II for Chemistry Majors (Lecture, Laboratory, and Recitation)

Chemistry 151 – Applied Chemistry (Laboratory)

Chemistry 245 – Organic Chemistry Laboratory II

Chemistry 246 – Majors Organic Chemistry I (Laboratory)

Chemistry 249 – Majors Organic Chemistry III (Laboratory)

University of Alabama at Birmingham, 2004- 2015

Chemistry 100 – Chemical Problem Solving

Chemistry 105 – Introductory Chemistry I

Chemistry 106 – Introductory Chemistry I Laboratory

Chemistry 107 – Introductory Chemistry II

Chemistry 108 – Introductory Chemistry II Laboratory

Chemistry 237 – Organic Chemistry II

Chemistry 320 / Chemistry 493 – Chemistry in Culture and Ethics

Chemistry 495 – Ethics in Chemical Research

Chemistry 498 – Chemistry Teaching Methods
Chemistry 610 – Lab Experiences in Chemistry I
Chemistry 619 – Special Topics in Chemical Education
Chemistry 719 – Special Topics in Chemical Education
Mechanical Engineering 799 – Dissertation Research

Student Advising:

Ph.D. Thesis Advisor, Nicole Gray, “Development of a Concept Exploration Based Teaching Methodology for Undergraduate Chemistry Education”, graduated December 2014

University of Michigan, 2000 – 2004

Chemistry 260 – Chemical Principles (Introduction to Physical Chemistry)

Chemistry 485 – Instrumental Biochemistry Laboratory

ORGANIZATIONS AND ACTIVITIES:

National Science Teachers Association, member

Society for College Science Teachers, member

American Chemical Society, Member

Textbook Reviewer for W.H. Freeman, Thompson Learning, Pearson Benjamin Cummings, Cengage, Houghton Mifflin, and McGraw-Hill

Member, UAB Center for Biophysical Sciences and Engineering, 2008 - 2015

PRESENTATIONS:

Craig P. McClure and Laura Grande, *The US National Chemistry Olympiad in the Philadelphia Section of the ACS - Progress and Challenges*,

Presentation, 31st Biennial Conference on Chemical Education, West Lafayette, IN, August 4, 2022

Craig P. McClure and Dennis Merat. *Recruiting Students for the US National Chemistry Olympiad*.

Webinar, American Chemical Society – US National Chemistry Olympiad, November 19, 2020

Craig P. McClure. *The Intercollegiate Chemistry Ethics Bowl*

Presentation, 2018 Southeast Regional Meeting of the ACS, Augusta, GA, November 1, 2018

Craig P. McClure and Gregory Ferrence. *The PROF Ethics Subdivision: Ten Years and Counting*

Presentation, 254th American Chemical Society National Meeting, Washington, DC, August 21, 2017

Craig P. McClure, Cory D. Jensen, and Gregory Ferrence. *Spreading the word about professionalism (professional ethics): Reconnecting with the ethics subdivision of the division of professional relations (PROF)*

Poster, 252nd American Chemical Society National Meeting, Philadelphia, PA, August 22, 2016

Craig P. McClure, *Promoting formal thinking and mathematical reasoning in introductory chemistry*,

Presentation, 23rd Biennial Conference on Chemical Education, Grand Rapids, MI, August 7, 2014

Craig P. McClure, *Development and Assessment of a Continuing Education Course in Quantitative Literacy for High School STEM Teachers*, presentation, International Conference of STEM 2014, University of British Columbia, Vancouver, BC, July 13, 2014

Craig P. McClure, *A Pilot of POGIL Activities for Quantitative Literacy*, Poster, 2013 POGIL National Meeting, Washington University, St. Louis MO, June 1, 2013

Craig P. McClure, *A Chemistry Capstone Course in Research Ethics and the Societal Impact of Chemistry*,

Presentation, 22nd Biennial Conference on Chemical Education, State College, PA, July 31, 2012

Joe L. March and Craig P. McClure, *POGIL Implementation in the High School Science Classroom, Part 1*. Workshop presentation, 2011 Alabama Science Teachers' Association Conference, Birmingham, AL, October 18, 2011

Craig P. McClure and Joe L. March, *POGIL Implementation in the High School Science Classroom, Part 2*. Workshop presentation, 2011 Alabama Science Teachers' Association Conference, Birmingham, AL, October 18, 2011

Craig P. McClure, Use and improvement of lecture vignettes in communicating key ideas in GOB courses, Presentation, 21st Biennial Conference on Chemical Education, Denton TX, August 3, 2010

Joe L. March and Craig P. McClure, Making Them Work Better: Modifying activities on the basis of feedback, Poster, 2010 POGIL National Meeting, Washington University, St. Louis MO, June 6, 2010

Invited Presenter, *UAB-ADVANCE Grant Writing Workshop*, "NSF Grants", October 24, 2008

Craig P. McClure, Jacqueline A. Nikles, and Joe L. March, "The Chemistry Scholars Program at UAB". Presentation, Alabama Science Teachers' Association Fall 2008 Meeting, October 1, 2008

Craig P. McClure, Joe L. March, and Malinda M. Matney, "Implementation of Process-Oriented Guided Inquiry Learning in an Introductory Chemistry Course"
Enriching the Academic Skills of College Science Students 2008 Conference, Ann Arbor, MI, June 3-5, 2008

Co-Organizer and Presenter, *POGIL Workshop – University of Mississippi*, May 3, 2008

Craig P. McClure, Joe L. March, Britany F. Matin, Sheritta M. Cooks, Michael J. Jablonsky, Steven R. Harville, and Malinda M. Matney, "Preparatory Chemistry Students' Attitudes Toward Science"
235th American Chemical Society National Meeting, New Orleans, LA, April 6, 2008

Joe L. March, Craig P. McClure, Britany F. Matin, and Sheritta M. Cooks, "Logical Thinking Skills Assessment in a Preparatory Chemistry Course"
235th American Chemical Society National Meeting, New Orleans, LA, April 6, 2008

Craig P. McClure and Joe L. March, "Process-Oriented Guided Inquiry Learning in a Preparatory Chemistry Course"
Southeast Regional ACS Meeting, October 26, 2007

Craig P. McClure, Joe L. March, Britany F. Matin, and Sheritta M. Cooks, "Impact of POGIL in Preparatory Chemistry"
POGIL Southeast Regional Meeting, Decatur, GA September 15, 2007

Jamy D. Ard and Craig P. McClure, "Trans Fats: What's the Big Deal?"
ACS Science Café, Summer 2007

Joe L. March and Craig P. McClure, "Implementation of POGIL in Preparatory Chemistry"
POGIL National Meeting, May 2007

Joe L. March and Craig P. McClure, "POGIL in Preparatory Chemistry"
POGIL National Meeting, May 2006

Annette T. Sakkab, Corinne E. Augelli-Szafran, Takenori Kimura, Harry LeVine, III, Craig McClure, Yoshikazu Tasaki, Tomoyuki Yasunaga, Yuyang Ye, "The Synthesis and Structure Activity Relationship of Substituted Oxazolone Analogs as Amyloid Aggregation Inhibitors"
Poster - ACS National Meeting, August 21, 2002, Boston, Massachusetts

Craig McClure, Kristin Rusche, Carol A. Fierke, James E. Penner-Hahn, "EXAFS Studies of the Zinc Site of UDP-(3-O-Acyl)-N-Acetylglucosamine Deacetylase (LPXC)"
Poster - ACS Central Regional Meeting, June 27, 2002, Ypsilanti, Michigan)

Craig McClure, "Biological Applications of EXAFS"
University of Northern Iowa, Department of Chemistry Seminar, October 18, 2001

Craig P. McClure and James G. Macmillan, "Directed Chiral Synthesis of a Substituted Wieland-Miescher Dione"
Poster – ACS National Meeting, April 1997, San Francisco, California

PUBLICATIONS:

McClure, Craig P.. "Development and Assessment of a Continuing Education Unit in Quantitative Literacy for High School STEM Teachers." *Numeracy*, **13** (2): July 2020
DOI: <https://doi.org/10.5038/1936-4660.13.2.1300>

Craig P. McClure and Aaron L. Lucius, "Implementing and Evaluating a Chemistry Course in Chemical Ethics and Civic Responsibility" *Journal of Chemical Education*, **87** (11): 1171-1175 November 2010

Craig P. McClure, Jacqueline A. Nikles, Joe L. March, and Gary M. Gray, "The Chemistry Scholars Program: A Program to Recruit and Retain Students in Chemistry" *The Chemical Educator*, **15**: 328-330 September 2010

Craig P. McClure, "An Ionic Compound Logic Puzzle"
Journal of Chemical Education, **86** (10): 1210-1211 October 2009

Craig P. McClure, "Introducing Scientific Writing to Students Early in Their Academic Careers"
Journal of College Science Teaching, **38** (6): 20-23 July/August 2009

Craig P. McClure, "Prote-ACE: A Logic Puzzle to Determine a Polypeptide Sequence"
Journal of Chemical Education, **86** (4): 457 April 2009

Craig P. McClure, Kristin M. Rusche, Katrina Peariso, Jane E. Jackman, Carol A. Fierke, James E. Penner-Hahn, "EXAFS Studies of the Zinc Sites of UDP-(3-O-acyl)-N-acetylglucosamine Deacetylase (LpxC)"
Journal of Inorganic Biochemistry, **94** (1-2): 78-85 February 1 2003

Deborah B. Zamble, Craig P. McClure, James E. Penner-Hahn, and Christopher T. Walsh, "McbB Component of Microcin B17 Synthetase is a Zinc Metalloprotein"
Biochemistry-US, **39**: (51) 16190-16199 December 26 2000

Brian T. Ferrar, Craig P. McClure, James E. Penner-Hahn, and Vincent L. Pecoraro, "Arsenic(III)-Cysteine Interactions Stabilize Three-Helix Bundles in Aqueous Solution"
Inorganic Chemistry **39**: (24) 5422-5423 November 27 2000

Books Published:

Co-Author, *Laboratory Manual for General Chemistry, Chemistry 101 and Chemistry 102*
Edward J. Thorne, Craig P. McClure, and Lee W. Hoffman
Drexel University Department of Chemistry, Academic Year 2022-2023

Co-Author, *Laboratory Manual: Chem 122 – General Chemistry II* (Remote Quarter Activities)
Monica Ilies, Edward J. Thorne, Susan A. Rutkowsky and Craig P. McClure
Drexel University Department of Chemistry, Academic Year 2020-2021

Co-Author, *Laboratory Manual: Chem 102 – General Chemistry II* (Remote Quarter Activities)
Monica Ilies, Edward J. Thorne, Susan A. Rutkowsky and Craig P. McClure
Drexel University Department of Chemistry, Academic Year 2020-2021

Co-Author, *Laboratory Manual: Chem 122 – General Chemistry*
Monica Ilies, Edward J. Thorne, Susan A. Rutkowsky and Craig P. McClure
Drexel University Department of Chemistry, Academic Year 2019-2020

Co-Author, *Introductory Chemistry Modules: A Guided Inquiry, First Edition*
Joe L. March and Craig P. McClure
Houghton-Mifflin Company, 2012

Contributor, *Introductory Chemistry Modules: A Guided Inquiry Approach, Preliminary Edition*
Joe March, Ken Caswell, Jennifer Lewis
Houghton-Mifflin Company, 2008

HONORS AND AWARDS:

Philadelphia Section ACS Service Award, 2019

UAB College of Arts and Sciences Dean's Award for Excellence in Teaching, 2010

ACS Younger Chemists Committee Leadership Development Award Winner, 2002

Chemistry/Biology Interface Fellowship, 1997-1999 - University of Michigan, Department of Chemistry
University of Northern Iowa Merit Scholar