MATTHEW W. LIBERATORE

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PROFESSIONAL EXPERIENCE

2024-	Trine University, Professor and Department Chair
2015-	Lead Author, zyBooks – a Wiley brand
2017-2024	University of Toledo, Professor of Chemical Engineering (tenured)
2022-2023	Subject Matter Expert, zyBooks – a Wiley brand (sabbatical)
2018	University of Canterbury, Erskine Fellow
2015-2017	University of Toledo, Associate Professor of Chemical Engineering (tenured)
2014-2015	Read Swipe Solve LLC, Founder and Author
2011-2015	Colorado School of Mines, Associate Professor of Chemical Engineering (tenured)
2005-2011	Colorado School of Mines, Assistant Professor of Chemical Engineering
2004-2005	University of Delaware, Postdoctoral Fellow with N.J. Wagner and E.W. Kaler
1999-2003	University of Illinois at Urbana-Champaign, Research Assistant with A.J. McHugh and T.J. Hanratty
1997-1999	Argonne National Laboratory, Engineering Assistant and Engineering Intern

EDUCATION

2003	Ph.D., Chemical Engineering, University of Illinois Urbana-Champaign
2001	M.S., Chemical Engineering, University of Illinois Urbana-Champaign
1999	B.S., Chemical Engineering, University of Illinois Chicago (with honors)

HONORS

Award for Excellence in Engineering Education Research from the AIChE Education Division	2024
William H. Corcoran Award for best paper in the prior year of the journal Chemical Engineering Education	2023
Johansen-Crosby Lecture, Michigan State University Department of Chemical Engineering and Materials Science	2023
Geneva (Neva) F. Gibbons Endowed Seminar, University of South Carolina Department of Chemical Engineering	2023
AIChE Executive Committee's Gary Leach Recognition Award - for leadership of Education Division's Virtual Communities of Practice	2022
Thomas and Donna Edgar Computer Aids for Chemical Engineering (CACHE) Award for Excellence in Chemical Engineering Education	2020
University of Toledo College of Engineering Excellence in Teaching Award	2019

John J. McKetta Jr. Lecture, Trine University Department of Chemical and Bioprocess Engineering 2016

Alumni Teaching Award from the Colorado School of Mines 2014-2015

Innovation in Chemical Engineering Education Award from the AIChE Education Division 2014

Rudolf Hering Medal from ASCE for the outstanding paper in the area of environmental engineering (with J. Silva and J. McCray) 2014

Raymond W. Fahien Award from the ASEE Chemical Engineering Division for educational scholarship and outstanding teaching effectiveness 2013

Professor of the Year, Chemical and Biological Engineering Department as voted by graduating seniors 2011-2012

Invited participant, National Academy of Engineering Frontiers of Engineering Education 2011

Alfred E. Jenni Faculty Fellowship for institution-wide contributions in teaching effectiveness and educational scholarship 2010-2011

Mentoring and Travel Grant for New Attendees, ASEE Chemical Engineering Division 2011

<u>Honors for Research Advisees</u>

Paper Award, 1st Place presentation (Morgan Schuld), AIChE North Central Regional Meeting 2024

Paper Award, 2nd Place presentation (Samie Kummar), AIChE Annual Meeting 2023

Paper Award, 1st Place presentation (Samie Kummar), AIChE North Central Regional Meeting 2023

Paper Award, 3rd Place presentation (Morgan Schuld), AIChE North Central Regional Meeting 2023

Poster Award, 2nd Place (Wesam Hatem), AIChE Virtual North Central Regional Meeting 2021

Paper Award, 3rd Place (tie) presentation (Kayla Chapman), AIChE Virtual North Central Regional Meeting 2021

Paper Award, 3rd Place (tie) presentation (Nicholas Singlar), AIChE Virtual North Central Regional Meeting 2021

Paper Award, 2nd Place (Uchenna Asogwa), ASEE Virtual North Central Section Conference Meeting 2021

Paper Award, 2nd Place presentation (Luke Gorbett), AIChE Virtual North Central Regional Meeting 2020

Poster Award, 2nd Place (Ehsan Akbari Fakhrabadi), Detroit Science Symposium - Chemistry and Materials Engineering for Industry, Detroit, MI 2019

Poster Award, 1st Place (Ehsan Akbari Fakhrabadi), The Eaton Experience & Poster Session, Southfield, MI 2019

Paper Award, 2nd Place presentation (Cristin Reno), AIChE North Central Regional Meeting 2019

Poster Award, 2nd Place Material Science and Engineering (Lisa Young), AIChE Annual Meeting Undergraduate Research Poster Session 2018

Outstanding Student Poster Award (Ye Liu) at the Gordon Research Conference on Fuel Cells 2014

Best Overall Presentation Award (Tara Pandey) at the Conference on Earth and Energy	2014
Best Paper, Undergraduate Research Paper Competition (Marc Donnelly) at the AIChE Rocky Mountain Regional Meeting	2013
Best Poster Award, Chemical & Biological Engineering (Melissa Vandiver) at the Conference on Earth and Energy Research	2013
Poster Award, 2nd Place Student Competition (Melissa Vandiver), 222nd Electrochemical Society Meeting	2012
Best Poster Award, Chemical & Biological Engineering (Melissa Vandiver) at the Conference on Earth and Energy Research	2012
Poster Award, 2nd Place Student Competition (Melissa Vandiver), 220th Electrochemical Society Meeting	2011
Poster Award, 2nd Place student competition (Eric B. Webb), Society of Rheology 82st Annual Meeting	2010
Poster Award, 2nd Place student competition (Patrick Rensing), Society of Rheology 81st Annual Meeting	2009
Best Poster Award (Nicholas Wyatt), CSM Graduate Research Fair	2008

TEACHING EXPERIENCE AND EDUCATIONAL DEVELOPMENT

Courses Taught

Graduate Thermodynamics	Fall 2005, Fall 2006, Fall 2007
Heat Transfer	Spring 2007, Spring 2008
Introduction to Engineering Thermodynamics/ Thermodynamics 1	Spring 2008, Fall 2008, Fall 2009, Fall 2013, Fall 2014, Summer 2018, Fall 2023
Unit Operations Laboratory	Summer 2008
Material and Energy Balances	Spring 2009, Spring 2010, Spring 2011, Spring 2012, Spring 2014, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021, Spring 2022, Spring 2024
Transport Phenomena	Fall 2011
Polymer and Complex Fluids Colloquium	Spring 2011, Fall 2011, Spring 2012, Fall 2013, Spring 2014
Scattering Methods (online/in person hybrid)	Fall 2011
Scattering in Soft Materials (online/in person hybrid)	Fall 2013
Graduate Transport Phenomena (Fluid mechanics)	Fall 2015, Fall 2016, Fall 2017, Fall 2018, Fall 2019, Fall 2021, Fall 2023
Separation Processes	Fall 2020

Educational Development

Author, interactive textbooks – see Books section below	2013-
Workshop Leader, various topics including interactive textbooks, YouTube problems, large classes, and building great student chapters	2012-

RESEARCH AND SCHOLARSHIP

Books

4. M.D. Koretsky and M.W. Liberatore, *Engineering and Chemical Thermodynamics ZyBook*, 2022-2024. Electronic, interactive textbook. Available at: zybooks.com
3. M.W. Liberatore, *Spreadsheet Essentials ZyBook*, 2018-2024. Electronic, interactive textbook. Available at: zybooks.com
2. M.W. Liberatore, *Material and Energy Balances ZyBook*, 2016-2024. Electronic, interactive textbook. Available at: zybooks.com
1. M.W. Liberatore, *Fundamentals of Material and Energy Balances*, Read Swipe Solve LLC, 2014-2015. Electronic, interactive textbook. Previously available.

5 Patents
108 Articles (peer reviewed) listed on Google Scholar.
34 Conference Proceedings (peer reviewed)
76 Invited Presentations
184 Presentations

h-index = 43, i10-index = 96, Total citations = 5800+ on Google Scholar 7/2024

Research Supervision
Postdoctoral – 5 former
Doctoral – 12 completed
Masters – 10 completed
Undergraduate – 69 students. Includes 32 women and 11 from underrepresented groups or U.S. military veterans; 24 earned co-author on peer-reviewed journal publication.
K-12 Science/Math Teachers – 6 teachers doing summer research
Visiting Researchers – 1 former

Research Funding
$5.7M total awards as PI, $1.3M co-PI share, over $15M total awards as PI or co-PI. Sources include NSF, DOE, Army, ACS-PRF, and industry. Single PI grant unless noted.

SERVICE ACTIVITIES

Professional

Ad hoc reviewer for dozens of journals, funding sources, and theses

Local Arrangements Committee Chair, 89th Society of Rheology Annual Meeting in Denver, CO from October 8 to 12, 2017 — 2012-2017
Hosted over 400 participants for over 100 individual events and sessions and managed over $200,000 budget to a surplus

2nd Vice Chair, 1st Vice Chair, Chair, Past Chair AIChE Education Division — 2014-2021
Assistant program chair for over 20 sessions at Annual Meeting

Advisory board member, Chemical Engineering program at United States Military Academy, West Point — 2019-

Inaugural Member, Diversity and Inclusion Committee of the Society of Rheology — 2018-2019

Organizing Committee Member (Fundraising), 2022 ASEE/AIChE Chemical Engineering Summer School	2018-2022
Kern Entrepreneurial Engineering Network (KEEN) Engineering Unleashed Ambassador – connecting KEEN and AIChE	2021-

University

Faculty Advisor/Chief Advisor, Tau Beta Pi Colorado Alpha Chapter	2007-2015
Chair, Undergraduate Affairs, CSM	2010-2012, 2013-2015
Faculty Advisor, AIChE Student Chapter CSM	2012-2015
Faculty Advisor, Mines Catholic Campus Ministry	2013-2015
Faculty Advisor, AIChE Student Chapter UToledo	2017-2024
Co-creator and advisory committee member, Cosmetic Science Minor UToledo	2017-2024
Chair, Faculty Executive Committee College of Engineering UToledo	2018-2019
Undergraduate Director, Department of Chemical Engineering UToledo	2019-2022, 2023-2024
Webmaster, Department of Chemical Engineering	2019-2024