CURRICULUM VITAE
JENNIFER B. NIELSON

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PROFESSIONAL EXPERIENCE:

2017-current	Associate Dean, College of Physical and Mathematical Sciences, Brigham Young University
2014-current	Teaching Professor, Department of Chemistry and Biochemistry, Brigham Young University
2008-2014	Associate Teaching Professor, Department of Chemistry and Biochemistry, Brigham Young University
2004-2008	Assistant Teaching Professor, Department of Chemistry and Biochemistry, Brigham Young University
1999-2004	Instructor, Department of Chemistry and Biochemistry, Brigham Young University
1989-1990	Research Chemist, Carolinas Medical Center, Charlotte, North Carolina
1988-1989	Research Chemist, DuPont Corporation, Charlotte, North Carolina

EDUCATION:

1997	PhD., Chemistry, University of California, San Diego
1992	M.S., Chemistry, University of California, San Diego
1988	B.S., Chemistry, Brigham Young University University Honors

PROFESSIONAL SERVICE:

Guest editor for Journal of Chemical Education: Special Issue on Diversity, Equity, Inclusion, and Respect in Chemistry Education Research and Practice, 2020-2021

Advisory Board member for NSF INCLUDES Alliance-1834545 Inclusive Graduate Education Network (IGEN), ACS Bridge Project, 2018-current

National Change Agent for NSF DUE-1821710 Get the Facts Out, Changing the Conversation around STEM Teacher Recruitment, 2018-current

Chair of Society Committee on Education (SOCED) for the American Chemical Society (ACS). Responsibilities for policies, resources, recommendations for chemical education. Oversight of ACS Undergraduate Program Advisory Board and Graduate Education Advisory Board, 2018-2020

Reviewer for ACS International Chemistry Festival Grants, 2018-current

Director of wiSTEM, advisory board for BYU College of Physical and Mathematical Sciences, 2017-current

Co-creator and co-director of BYU Chem Camp, summer chemistry camps for youth ages 9-14, 2016-current

Creator and facilitator of *Learning Chemistry Through Experimentation* workshops in Uganda, with Makerere University, Kyambogo University, and Mbarara University, 2013-current

Member of American Chemical Society CPT-SOCED Task Force on the Association of American Medical Colleges-Howard Hughes Medical Institute Report *Scientific Foundations of Future Physicians*, 2011-2013

Conference co-organizer and workshop leader of Content Literacy Summer Institute for literacy training of public school secondary teachers, 2011

Member of Brigham Young University Literacy Study Group, 2011-2016

Associate member of Society Committee On Education for the American Chemical Society, 2010-2017

Councilor for Central Utah Section to the American Chemical Society, 2009-current

Creator and facilitator of Chem4Kids Workshops during ACS National Chemistry Week, 2007-current

Chair and Secretary/Treasurer of Central Utah Section of the American Chemical Society, 2006-2008

GRANTS AND AWARDS:

2017 NSF DUE-1712056 STEM Faculty Institute (STEMFI) to Promote Faculty Change, Co-PI

2016, 2014, 2008 Undergraduate Mentoring Grant from BYU Office of Research and Creative Activities

2015 Karl G. Maeser Professional Faculty Excellence Award from Brigham Young University

2014 Global Initiative Grant from the International Activities Committee of the American Chemical Society

2011 College Teaching Award for 3-10 years experience from the BYU College of Physical and Mathematical Sciences

2009 High-Impact Teaching grant from BYU College of Physical and Mathematical Sciences

PUBLICATIONS:

West, R.; Jensen, J.; Sansom, R.; Nielson, J.; Wright, G.; Johnson, M. "STEM Faculty Institute: An Intensive Interdisciplinary Effort To Improve STEM Faculty Adoption of Evidence-based Instructional Practices". *Journal of College Science Teaching* 2020 (Accepted).

West, R.; Sansom, R.; Nielson, J.; Wright, G.; Turley, R.S.; Jensen, J.; Johnson, M. "Ideas for supporting student-centered STEM learning through remote labs: A response". *Educational Technology Research and Development* 2020. https://doi.org/10.1007/s11423-020-09905-y

Chambers, T. M.; Gravely, E. C.; Hunter, W.; Nielson, J. B.; Yezierski, E. J. "Getting the Facts Out About Secondary Chemistry Teaching". *Chemistry Solutions* 2020. https://teachchemistry.org/periodical/issues/november-2020

Chambers, T. M.; Gravely, E. C.; Hunter, W.; Nielson, J. B.; Yezierski, E. J. "Refuting Myths about Secondary Chemistry Teaching: Getting the Facts Out to Current and Future Educators". *Journal of Chemical Education* 2019, 96, 1291-1293.

Siebert, D. K.; Draper, R. J.; Barney, D.; Broomhead, P.; Grierson, S.; Jensen, A. P.; Nielson, J. B.; Nokes, J. D.; Shumway, S.; Wimmer, J. "Characteristics of Literacy Instruction That Support Reform in Content Area Classrooms." *Journal of Adolescent & Adult Literacy* 2016, *98 (1)*, 25-33.

Hansen, L. D.; Nielson J. B. "Lactose Chemistry" In *Food and Nutritional Components in Focus No.3 Dietary Sugars: Chemistry, Analysis, Function and Effects*. Preedy, V.R., Ed.; Royal Society of Chemistry Publishing, London, 2012.

Perrin, C. L.; Nielson J. B.; Kim, Y. J. "Symmetry of Hydrogen Bonds in Solution, An Overview." *Berichte der Bunsen: Gesellschaft für Physikalische Chemie – Physical Chemistry Chemical Physics* 1998, *102 (3)*, 403-409.

Perrin, C. L.; Nielson J. B. "'Strong' Hydrogen Bonds in Chemistry and Biology." *Annual Review of Physical Chemistry* 1997, *48*, 511-544.

Perrin, C. L.; Nielson J. B. "Asymmetry of Hydrogen Bonds in Solutions of Monoanions of Dicarboxylic Acids." *Journal of the American Chemical Society* 1997, *119 (52)*, 12734-12741.

WORKS IN PROGRESS:

Nielson, J. B.; Christensen, S.; Laney, B.; Laney, K. M.; Nielson, D. L. "Required Science Homework Boosts Performance Among Less Motivated Students: Three Randomized Control Trials in University Chemistry Classes." Article manuscript.

Nielson, J. B.; Bodily, R.; McCormick, A. "A Randomized Control Trial on the Effectiveness of Student-Generated Assessments as a Tool for Learning Organic Chemistry." Article manuscript.

Nielson, J. B.; Cameron, A.; Kamba, B. "Secondary School Science Curriculum Reform in Uganda: Learning Chemistry Through Experimentation." Article manuscript.

CONFERENCE PRESENTATIONS:

"Building Support at the University, College, and Department Level for Recruiting and Retaining Secondary Education Majors in Chemistry, Physics, and Math" presented at the 258th American Chemical Society National Meeting, San Diego, CA August 25-29, 2019.

"The challenges and successes of designing experiments for CHEM CAMP and BIOCHEM CAMP, summer programs for youths 9-14" presented at the 255th American Chemical Society National Meeting, New Orleans, LA March 18-22, 2018.

"The Effects of Homework on Learning: A Classroom Field Experiment" presented at the 253rd American Chemical Society National Meeting, San Francisco, CA, April 2-6, 2017.

"Learning Chemistry Through Experimentation: RCT design and evaluation of chemistry high school teacher development workshops in Uganda" presented at the 248th American Chemical Society National Meeting, San Francisco, CA, August 10-14, 2014.

" Reimagining the Preparation of Teachers to Support Students' Acquisition and Learning of Disciplinary Literacies." with Daniel Barney, Paul Broomhead, Roni Jo Draper, Sirpa Grierson, Amy Jensen, Jeffrey Nokes, Steven Shumway, Daniel Siebert, Jenni Wimmer. Symposium presented at the 62nd Literacy Research Association Annual Conference, San Diego, CA, November 28-December 1, 2012.

"The ACS Response on the AAMC-HHMI Report *Scientific Foundations of Future Physicians*." presented to the Chemical Sciences Roundtable at the National Academy of Science, Washington, DC, January 12, 2012.

" The Common Core State Standards: Problems and Possibilities for Content Area Literacy." with Daniel Barney, Paul Broomhead, Roni Jo Draper, Sirpa Grierson, Amy Jensen, Jeffrey Nokes, Daniel Siebert. Symposium presented at the 61st Literacy Research Association Annual Conference, Jacksonville, FL, November 30-December 3, 2011.

"The Symmetry of Hydrogen Bonds in the Monoanions of Dicarboxylic Acids." presented at the 208th American Chemical Society National Meeting, Washington, DC, August 21-26, 1994.

"An NMR Study of the Symmetry of Hydrogen Bonds in the Monoanions of Dicarboxylic Acids." presented at the 207th American Chemical Society National Meeting, San Diego, CA, March 13-19, 1994.

COURSES TAUGHT:

13,000 students taught
Chemistry 101 – Introduction to General Chemistry
Chemistry 102 – Concepts of Chemistry
Chemistry 105 – General College Chemistry
Chemistry 152 – Introduction to Organic Chemistry
Chemistry 285 – Bio-Organic Chemistry
Chemistry 351 – Organic Chemistry I
Chemistry 352 – Organic Chemistry II
Chemistry 397R – Mentored Outreach and Service Learning

TECHNICAL SKILLS:

Dynamic FT-NMR on Varian and Nicolet/GE spectrometer operating systems
UV and IR spectroscopy
PCR, gel electrophoresis, southern blot, radioactive labeling and imaging

FOREIGN LANGUAGES:

GERMAN – speaking fluency; PORTUGUESE – speaking fluency; SPANISH – basic knowledge