J. CHARLES WILLIAMSON

Department of Chemistry
Willamette University
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EDUCATION

Ph.D., Chemistry Oct. 1997
California Institute of Technology, Pasadena, CA

Thesis: *Ultrafast Gas-Phase Electron Diffraction*
Advisor: Professor Ahmed H. Zewail

B.Sc. (High Distinction)**, Chemistry and Physics** (Double Major) May 1990
Harvey Mudd College, Claremont, CA

PROFESSIONAL EXPERIENCE

ORCID iD: 0000-0002-3711-1682

Professor of Chemistry Aug. 2011 – Present
Willamette University, Salem, OR

Responsibilities include teaching Physical Chemistry, Experimental Chemistry, General Chemistry, associated laboratory courses, Special Topics in Physical Chemistry, College Colloquium, and undergraduate academic advising. Advise and direct summer research students and senior chemistry majors in research experiences. Primary area of research interest includes liquid-liquid miscibility.

Associate Professor of Chemistry Aug. 2005 – July 2011
Willamette University, Salem, OR

Assistant Professor of Chemistry Aug. 1999 – July 2005
Willamette University, Salem, OR

Visiting Professor of Chemistry Jan. 1999 – May 1999
University of Iowa, Iowa City, IA

Adjunct Professor of Physics Aug. 1998 – June 1999
University of Iowa, Iowa City, IA

Graduate Teaching Assistant 1994, 1995
California Institute of Technology, Pasadena, CA

J. Charles Williamson

RESEARCH TRAINING

Graduate Research Assistant
California Institute of Technology, Pasadena, CA

- *Graduate Research Project* Sept. 1990 – Oct. 1997

  Pioneered ultrafast gas-phase electron diffraction (UGED), a technique for observing the dynamics of isolated molecules on the picosecond time scale by monitoring changes in molecular structure. Built a femtosecond laser system; an electron beam source; a vacuum chamber; and a pair of CCD-based single-electron imagers. Developed theoretical treatments of UGED and wrote a software analysis package for processing UGED data. In the prototype UGED experiment, the dissociation of CH_2I_2 was observed with 5-10 ps temporal resolution.

Undergraduate Research
Harvey Mudd College, Claremont, CA

- *Senior Research Project* Sept. 1989 – May 1990

  Investigated the behavior of the Belousov-Zhabotinksy oscillating reaction as a function of reactant flow rates in a home-built, continuously-stirred tank reactor.

- *Summer Research Assistant* Summer 1989

  Installed a new Undergraduate Laser Laboratory for the Chemistry Department. Set up lasers and light detection instruments, wrote a user-interface program for the laboratory computer, and beta-tested three experiments which were later included in laboratory coursework.

- *Summer Research Assistant* Summer 1988

  Studied the Ketal-Claisen rearrangement. Research centered on stereo- and regiochemical effects in the reaction of 1,1-dimethoxy-3,3-dimethylcyclohexane with allylic alcohols.

HONORS AND AWARDS

Taul Watanabe Chair in the Sciences	2018 – Present
Jerry E. Hudson Award for Outstanding Teaching	2016
Sigma Xi Outstanding Scientific Research Award	2011
Faculty Achievement Award for Teaching and Service	2008
Faculty Achievement Award for Teaching and Scholarship	2001
National Science Foundation Graduate Fellowship	1990 – 1993
Hertz Foundation Graduate Fellowship (declined in favor of NSF award)	1990
Letter of Commendation for Senior Research Project	1990
Graduation Honors from the Chemistry, Physics, and Humanities Departments	1990
Radley Prize in Humanities and Social Sciences	1990
Art and Dottie Campbell Award	1988
National Merit Scholar	1986
State of Oregon Representative to Summer Program for High School Students at Brookhaven National Laboratory	1986

INSTITUTIONAL GOVERNANCE AND SERVICE

Chemistry Department Chair	2005 – 2009, 2022 –
Science Collaborative Research Program Co-Director	2010 –
Academic Programs Committee Chair	2020 – 2021
Council of Chairs	2019 – 2020
University Council	2019 – 2020
Tuition Remission Task Force	2019 – 2020
Budget Advisory Council Faculty Chair	2019 – 2020
Budget Advisory Council	2017 – 2019
Curricular and Fiscal Sustainability Task Force	2018
Academic Technology Advisory Committee Chair	2015 – 2017
Chief Information Officer Search Committee	2015
Technology Review Committee	2015
Faculty Council	2012 – 2014
Tuition Remission Working Group	2011 – 2013
Budget Advisory Committee	2009 – 2012
Willamette Graduation Honorary Degree Committee	2011
HHMI Grant Planning Committee	2011
Academic Council Chair	2007 – 2009
Strategic Planning Task Force	2008
Undergraduate Retention Task Force	2008
HHMI Grant Application – Faculty Development Working Group	2007
Science Collaborative Research Program Associate Director	2001 – 2006
CLA Executive Committee	2005
New Academic Building Disappearing Task Force	2005
Academic Council	2003 – 2005
Academic Programs Committee	2001 – 2002
Science Librarian Search Committee	2001 – 2002
Writing Program Advisory Committee	2000 – 2001

PROFESSIONAL ASSOCIATIONS AND SERVICE

Member of the American Chemical Society and Sigma Xi
Chemistry Graduate Record Examination "Shadow" Committee 2020 –
Chemistry Graduate Record Examination Executive Committee 2014 – 2020
Reviewer for NSF MRI, ACS PRF, and M. J. Murdock Charitable Trust Grants
Manuscript Reviewer and Experiment Tester for the *Journal of Chemical Education*
Manuscript Reviewer for:

American Journal of Physics
Dalton Transactions
Journal of Chemical and Engineering Data
Journal of Chemical Physics
Journal of Physical Chemistry
Spectrochimica Acta A

PUBLICATIONS (Undergraduate Co-Author*)

23) "Off-Critical Wetting Layer Divergence at the Liquid / Vapor Interface of Binary Liquid Mixtures"
J. C. Williamson, E. E. Weatherford*, M. M. DenBeste*, K. C. Riley*, E. F. Yee*, S. T. Rogers*, and C. A. Tibbetts*, *J. Chem. Phys.*, **157**(8), 084504 (2022). doi: 10.1063/5.0105690.

22) "Liquid-Liquid Demonstrations: Spinodal Decomposition"
J. C. Williamson. *J. Chem. Educ.*, **98**(7), 2370-2375 (2021). doi: 10.1021/acs.jchemed.0c01519

21) "Liquid-Liquid Demonstrations: Critical Opalescence"
J. C. Williamson. *J. Chem. Educ.*, **98**(7), 2364-2369 (2021). doi: 10.1021/acs.jchemed.0c01518

20) "Liquid-Liquid Demonstrations: Phase Equilibria and the Lever Rule"
Chosen as the Featured Cover Article
J. C. Williamson. *J. Chem. Educ.*, **98**(7), 2356-2363 (2021). doi: 10.1021/acs.jchemed.0c01517

19) "The Sweetness of Aspartame: Introducing Key Statistical Concepts in an Upper Division Bioanalytical Laboratory Project"
J. C. Williamson and T. P. Silverstein, *J. Chem. Educ.* **98**(4), 1233-1241 (2021).
doi: 10.1021/acs.jchemed.0c01072

18) "Liposome Permeability Probed By Laser Light Scattering"
T. P. Silverstein and **J. C. Williamson**. *Biochem. Mol. Biol. Educ*. **47**(3), 239-246 (2019).
doi: 10.1002/bmb.21226

17) "Determination of Liquid-Liquid Critical Point Composition Using 90° Laser Light Scattering"
J. C. Williamson, A. M. Brown*, E. N. Helvie*, and K. M. Dean*, *Phys. Rev. E*, **93**, 042610 (2016).
doi: 10.1103/PhysRevE.93.042610

16) "A Molecular Iodine Spectral Data Set for Rovibronic Analysis"
J. C. Williamson, T. S. Kuntzleman, and R. A. Kafader*, *J. Chem. Educ.*, **90**(3), 383-385 (2013).
doi: 10.1021/ed300455n

15) "Molecular Iodine Fluorescence Using a Green Helium-Neon Laser"
J. C. Williamson, *J. Chem. Educ.*, **88**(6), 816-818 (2011). doi: 10.1021/ed100908u

14) "The Stir-Settle Approach to Semiautomated Light Scattering Determination of Liquid-Liquid Coexistence Curves"
K. M. Dean* and **J. C. Williamson**, *J. Chem. Eng. Data*, **56**(4), 1433-1437 (2011). doi: 10.1021/je101143g

13) "Molecular Iodine Fluorescence Spectra Generated from Helium-Neon Lasers for Spectrometer Calibration"
J. C. Williamson, *Appl. Spectrosc.*, **64**(12), 1419-1422 (2010). doi: 10.1366/000370210793561637

12) "The Accuracy of Liquid-Liquid Phase Transition Temperatures Determined from Semiautomated Light Scattering Measurements"
K. M. Dean*, C. B. Babayco*, D. R. B. Sluss*, and **J. C. Williamson**, *J. Chem. Phys.* **133**, 074506 (2010). doi: 10.1063/1.3469778

11) "Subwavenumber Charge-Coupled Device Spectrometer Calibration Using Molecular Iodine Laser-Induced Fluorescence"
J. G. Lambert*, C. Hernandez-Diaz*, and **J. C. Williamson**, *Rev. Sci. Instrum.* **81**, 013110 (2010). doi: 10.1063/1.3287951

10) "Interactive Two-Component Phase Diagrams"
J. C. Williamson, *J. Chem. Educ.* **86**(5), 653-654 (2009). doi: 10.1021/ed086p653

9) "Teaching the Rovibronic Spectroscopy of Molecular Iodine"
J. C. Williamson, *J. Chem. Educ.* **84**(8), 1355-1359 (2007). doi: 10.1021/ed084p1355

8) "Analyzing Linear and Angular Momentum Conservation in Digital Videos of Puck Collisions"
J. C. Williamson, R. Torres-Isea, and C. A. Kletzing, *Amer. J. Phys*. **68**(9), 841-847 (2000). doi: 10.1119/1.1302325

7) "Clocking Transient Chemical Changes By Ultrafast Electron Diffraction"
J. C. Williamson, J. Cao, H. Ihee, H. Frey, and A. H. Zewail, *Nature* **386**, 159-162 (1997). doi: 10.1038/386159a0

6) "Ultrafast Electron Diffraction 5: Experimental Time Resolution and Applications"
Chosen as the Featured Cover Article
M. Dantus, S. B. Kim, **J. C. Williamson**, and A. H. Zewail, *J. Phys. Chem.* **98**(11), 2782-2796 (1994). doi: 10.1021/j100062a011

5) "Ultrafast Electron Diffraction 4: Molecular Structures and Coherent Dynamics"
J. C. Williamson and A. H. Zewail, *J. Phys. Chem.* **98**(11), 2766-2781 (1994). doi: 10.1021/j100062a010

4) "Femtochemistry at High Pressures: The Dynamics of an Elementary Reaction in the Gas-Liquid Transition Region"
Ch. Lienau, **J. C. Williamson**, and A. H. Zewail, *Chem. Phys. Lett.* **213**(3,4), 289-296 (1993). doi: 10.1016/0009-2614(93)85134-a

3) "Ultrafast Electron Diffraction: Velocity Mismatch and Temporal Resolution in Crossed-Beam Experiments"
J. C. Williamson and A. H. Zewail, *Chem. Phys. Lett.* **209**(1,2), 10-16 (1993). doi: 10.1016/0009-2614(93)87193-7

2) "Ultrafast Diffraction and Molecular Structure"
J. C. Williamson, M. Dantus, S. B. Kim, and A. H. Zewail, *Chem. Phys. Lett.* **196**(6), 529-534 (1992). doi: 10.1016/0009-2614(92)85988-m

1) "Structural Femtochemistry: Experimental Methodology"
J. C. Williamson and A. H. Zewail, *Proc. Natl. Acad. Sci. USA* **88**, 5021-5025 (1991). doi: 10.1073/pnas.88.11.5021

FUNDED EXTERNAL GRANT APPLICATIONS

Hamilton Syringe Product Grant ($1,000) 2017
PI: **J. C. Williamson**; co-PI: R. D. Jones
Hamilton Company

Research Start-Up Grant for New Science Faculty ($30,000) 2017 – 2020
"Research Funding for a Biochemist" (Cooper Battle)
PI: **J. C. Williamson**; co-PIs: A. P. Duncan, A. J. Fisher, D. P. Griffith, K. M. Holman, S. R. Kirk
M. J. Murdock Charitable Trust

Petroleum Research Fund Undergraduate Research Proposal ($70,000) 2015 – 2018
"Investigations of Pre-Transition Droplet Formation in Pseudobinary Liquid-Liquid Systems" (55088-UR10)
PI: **J. C. Williamson**
American Chemical Society

Jean Dreyfus Boissevain Lectureship Award ($18,500) 2012
PI: **J. C. Williamson**; co-PI: A. P. Duncan
Camille and Henry Dreyfus Foundation

Pittsburgh Conference Memorial National College Grant ($8,500) 2009
"Acquisition of a Rudolph Research Autopol III Polarimeter"
PI: **J. C. Williamson**; co-PIs: A. P. Duncan, S. R. Kirk, and D. R. Phillips
PCMN College Grants Program

Major Research Instrumentation Grant ($409,750 – Accepted) 2008
"Acquisition of a 400-MHz NMR Spectrometer" (0821781)
PI: A. P. Duncan; co-PIs: S. R. Kirk and **J. C. Williamson**
National Science Foundation

Research Start-Up Grant for New Science Faculty ($25,000) 2005 – 2008
"Research Funding for a Synthetic Organic Chemist" (Drew Duncan)
PI: **J. C. Williamson**; co-PIs: A. P. Duncan, D. E. Goodney, K. M. Holman, S. R. Kirk, T. P. Silverstein
M. J. Murdock Charitable Trust

Course, Curriculum, and Lab Instrumentation Grant ($27,400) 2002 – 2004
"Atomic Absorption Spectroscopy Across the Undergraduate Chemistry Laboratory Curriculum" (0126862)
PI: D. E. Goodney; co-PI: **J. C. Williamson**
National Science Foundation

Major Research Instrumentation Grant ($90,000) 2001 – 2005
"Acquisition of Laser Light Scattering Instrumentation" (0116713)
PI: **J. C. Williamson**; co-PI: J. J. Willemsen
National Science Foundation

Faculty Start-Up Grant Award ($20,000) 1999 – 2004
"Determination of Excess Gibbs Free Energy of Liquid-Liquid Mixtures by Laser Light Scattering"
PI: **J. C. Williamson**
Camille and Henry Dreyfus Foundation

UNFUNDED EXTERNAL GRANT APPLICATIONS (PI OR CO-PI)

Petroleum Research Fund Undergraduate Research Proposal ($65,000) 2013
"Investigations of Pre-Transition Droplet Formation in Pseudobinary Liquid-Liquid Systems"

Henry Dreyfus Teacher-Scholar Award ($60,000) 2011
"Investigations of Third Component Perturbations on Liquid-Liquid Equilibria"

Partners In Science Program ($15,000) 2008
"A Raman Investigation of Solvation Shell Behavior Near the Critical Point of Methanol / Carbon Disulfide Liquid-Liquid Mixtures"

Pittsburgh Conference Memorial National College Grant ($8,337) 2008
"Acquisition of a Rudolph Research Autopol III Polarimeter"

Major Research Instrumentation Grant ($409,750) 2007
"Acquisition of a 400-MHz NMR Spectrometer" (0723245)

FUNDED EXTERNAL STUDENT GRANT APPLICATIONS (Undergraduate*)

Sigma Xi Grants-in-Aid of Research Award ($760) 2017
"Characterization of Pre-Transition Droplets in Liquid-Liquid Systems with Magnetic-Susceptibility-Matched NMR Tubes"
PI: K. Ramos*; co-PI: **J. C. Williamson**

Sigma Xi Grants-in-Aid of Research Award ($786) 2013
"Exploring Pre-Transition Droplet Formation and the Effect of Secondary Isotopomeric Abundance Percentage"
PI: M. Correa*; co-PI: **J. C. Williamson**

Sigma Xi Grants-in-Aid of Research Award ($960) 2011
"NMR Spectroscopy Investigation of a Phase Diagram Anomaly in the *o*-Toluidine + *n*-Hexane Liquid-Liquid System"
PI: E. F.-M. Yee*; co-PI: **J. C. Williamson**

Sigma Xi Grants-in-Aid of Research Award ($400) 2006
"Investigation of the 3-Butyn-2-one + Water Liquid-Liquid System"
PI: K. Dean*; co-PI: **J. C. Williamson**

Three additional student applications were not funded.

FUNDED WILLAMETTE UNIVERSITY INTERNAL GRANT APPLICATIONS

Atkinson Faculty Development Award ($500) 2021
"Coexistence Curve Measurements of Three Liquid-Liquid Systems"

CLA Faculty Fund to Enhance Student Learning ($700) 2019
"Master Class in Singing Improvisation with Laura and Rick Hall"

Atkinson Faculty Development Award ($2,500) 2018
"Investigation of Pre-Transition Droplet Formation in Binary Liquid Systems Involving Ionic Liquids"

Atkinson Faculty Development Award ($2,500) 2016
"Investigation of Benzene Doping on the Phase Transition Behavior of the Aniline + Cyclohexane Liquid-Liquid System"

William and Flora Hewlett Foundation Grant ($2,250) 2014
"ASBMB Biochemistry and Molecular Biology Degree Accreditation"
PI: **J. C. Williamson**; co-PIs: A. J. Fisher, T. P. Silverstein

Atkinson Faculty Development Award ($1,800) 2013
"Investigation of Extrinsic and Intrinsic Impurity Effects on the Phase Transition Behavior of Liquid-Liquid Systems"

Atkinson Faculty Development Award ($1,000) 2011
"Characterization of Anomalous Phase Transition Behavior in Liquid-Liquid Systems"

Atkinson Faculty Development Award ($449) 2011
"Determination of Liquid-Liquid Critical Point Composition from 90° Light Scattering Data"

William and Flora Hewlett Foundation Grant ($4,087) 2010
"Optical Polarization Experiments in Chemistry and Physics"
PI: **J. C. Williamson**; co-PIs: M. Kleinert, K. M. Holman

Atkinson Faculty Development Award ($2,500) 2009
"CCD Spectrometer Calibration using Molecular Iodine Fluorescence from He-Ne Laser Excitation"

William and Flora Hewlett Foundation Grant ($3,000) 2008
"Curricular Revision and Implementation of Upper Division Laboratories in the Biochemistry and Chemistry Tracks"
PI: T. P. Silverstein; co-PIs: A. P. Duncan, D. E. Goodney, K. M. Holman, S. R. Kirk, **J. C. Williamson**

Faculty Resource Committee Research Funds ($1,000) 2008
"Sample Preparation Supplies for Measuring the 3-Buten-2-one / Water Binary Liquid System"

William and Flora Hewlett Foundation Grant ($5,000) 2007
"Biochemistry Track Assessment and Curricular Revision"
PI: **J. C. Williamson**; co-PIs: A. P. Duncan, D. E. Goodney, K. M. Holman, S. R. Kirk, T. P. Silverstein

Atkinson Faculty Development Award ($1,000) 2006
"Determination of Binary Liquid Phase Transitions by Laser Light Scattering"

Faculty Resource Committee Research Funds ($1,050) 2005
"Sample Preparation Supplies for Determination of Binary Liquid Phase Transitions"

William and Flora Hewlett Foundation Grant ($2,700) 2003
"Development of a Physical Chemistry Laboratory on the Behavior of Real Gases at High Pressure"

Atkinson Faculty Development Award ($2,500) 2001
"Determination of Excess Gibbs Free Energy of Liquid-Liquid Mixtures by Light Scattering"

William and Flora Hewlett Foundation Grant ($4,000) 2000
"Integration of the Undergraduate Laser Laboratory into the Chemistry and Physics Curricula"
PI: **J. C. Williamson**; co-PI: R. Watkins

CONFERENCE AND SYMPOSIUM ORAL PRESENTATIONS (Presenter; Undergraduate*)

"Activities and Demonstrations to Illuminate Two-Component Phase Behavior"
J. C. Williamson, 2020 Biennial Conference on Chemical Education. Abstract accepted March 31, 2020. Conference cancelled because of the global COVID-19 pandemic.

"Showing Versus Telling: Training Students to Teach Rather than Present"
J. C. Williamson, 2020 Biennial Conference on Chemical Education. Abstract accepted March 31, 2020. Conference cancelled because of the global COVID-19 pandemic.

"Wristband Exposome Project: A GC / MS Investigation of Personal Chemical Exposure"
J. C. Williamson and R. D. Jones, 74th Northwest Regional ACS Meeting, Portland, OR. June 18, 2019.

"Universality of Critical Point Shifts in the Isobutyric Acid + Water + Third Component Liquid-Liquid System"
J. C. Williamson, D. L. Huber*, T. M. Nakama-Fukuhara*, and A. H. Williams*, 74th Northwest Regional ACS Meeting, Portland, OR. June 17, 2019.

"Plait Point Behavior in the Aniline + Cyclohexane + 2-Picoline Ternary Liquid System"
M. McKibben*, T. Kallem*, and **J. C. Williamson**, 73rd Northwest Regional ACS Meeting, Richland, WA. June 26, 2018.

"Measuring Osmosis Across Liposome Membranes Using Laser Light Scattering: An Undergraduate Biochemistry Experiment"
T. P. Silverstein and **J. C. Williamson**, 73rd Northwest Regional ACS Meeting, Richland, WA. June 26, 2018.

"Solids and Liquids and Gases – Oh My!" – *Invited Talk*
J. C. Williamson, Institute for Continued Learning, Willamette University, Salem, OR. October 26, 2017.

"Insights into Liquid-Liquid Equilibrium Behavior Gained from Laser Light Scattering Measurements"
J. C. Williamson, 254th National ACS Meeting, Washington, DC. August 24, 2017.

"Helping Students Communicate Effectively in Oral Presentations" – *Invited Talk*
J. C. Williamson, Thursday Classroom Tales, Willamette University, Salem, OR. March 2, 2017.

"Liquid Sky: Liquid-Liquid Mixtures, Light Scattering, and Critical Behavior"
J. C. Williamson, Faculty Colloquium, Willamette University, Salem, OR. April 1, 2016.

"Liquid Sky: Liquid-Liquid Mixtures, Light Scattering, and Critical Behavior" – *Invited Talk*
J. C. Williamson, Department of Chemistry and Biochemistry Seminar Program, University of Minnesota Duluth, Duluth, MN. October 17, 2014.

"Molecular Iodine Absorption and Emission Spectra: A Comprehensive 'Dry Lab' Analysis"
T. S. Kuntzleman and **J. C. Williamson**, 246th National ACS Meeting, Indianapolis, IN. September 8, 2013.

"Pre-Transition Droplet Formation in Liquid-Liquid Systems" – *Invited Talk*
E. F. Yee* and **J. C. Williamson**, 68th Northwest Regional ACS Meeting, Corvallis, OR. July 22, 2013.

"Determination of Liquid-Liquid Critical Point Composition from 90° Light Scattering Data"
J. C. Williamson, 66th Northwest Regional ACS Meeting, Portland, OR. June 29, 2011.

"Liquid Sky: Light Scattering, Liquid-Liquid Mixtures, and Critical Behavior" – *Invited Talk*
J. C. Williamson, Science Seminar, University of Portland, Portland, OR. October 7, 2010.

"Liquid Sky"
J. C. Williamson, Mini-University, Parents and Family Weekend, Willamette University, Salem, OR. October 10, 2009.

"Sub-Wavenumber CCD Spectrometer Calibration Using Molecular Iodine Laser-Induced Fluorescence"
J. G. Lambert*, C. Hernandez-Diaz*, and **J. C. Williamson**, 64th Northwest Regional ACS Meeting, Tacoma, WA. June 29, 2009.

Keynote Speaker – *Invited Talk*
J. C. Williamson, Oregon 2009 Awards Ceremony Program for the Johns Hopkins University Center for Talented Youth, Willamette University, Salem, OR. May 31, 2009.

"Liquid Sky"
J. C. Williamson, Mini-University, Parents and Family Weekend, Willamette University, Salem, OR. October 18, 2008.

"Liquid Sky"
J. C. Williamson, Faculty Colloquium, Willamette University, Salem, OR. September 7, 2007.

"Using Light Scattering Data to Assign Liquid-Liquid Phase Transition Temperatures"
C. B. Babayco*, D. R. B. Sluss*, K. M. Dean*, and **J. C. Williamson**, 62nd Northwest Regional ACS Meeting, Boise, ID. June 20, 2007.

"Liquid Sky" – *Invited Talk*
J. C. Williamson, Science Seminar, Linfield College, McMinnville, OR. May 3, 2007.

"Liquid Sky" – *Invited Talk*
J. C. Williamson, Science Seminar, Western Oregon University, Monmouth, OR. April 25, 2007.

"Using Case Studies of Chemistry in the Real World to Teach Second Semester Introductory Chemistry"
D. E. Goodney, T. P. Silverstein, K. M. Holman, S. R. Kirk, J. J. Willemsen, and **J. C. Williamson**, 229th National ACS Meeting, San Diego, CA. March 14, 2005.

"Assessment of Molecular Iodine Potential Parameters Determined in the Undergraduate Spectroscopy Experiment"
J. C. Williamson, 228th National ACS Meeting, Philadelphia, PA. August 26, 2004.

"Time to Phase the Facts: Diamonds Aren't Forever"
J. C. Williamson, Mini-University, Parents and Family Weekend, Willamette University, Salem, OR. October 13, 2001.

"Ultrafast Gas-Phase Electron Diffraction"
J. C. Williamson, H. Ihee, J. Cao, H. M. Frey, and A. H. Zewail, 56th Northwest Regional ACS Meeting, Seattle, WA. June 16, 2001.

"Quantum Mechanics and the Failure of Local Reality"
J. C. Williamson, Faculty Research Colloquium, Willamette University, Salem, OR. April 9, 2001.

"Ultrafast Gas-Phase Electron Diffraction" – *Invited Talk*
J. C. Williamson, H. Ihee, J. Cao, H. M. Frey, and A. H. Zewail, PAIN Seminar Series, Oregon State University, Corvallis, OR. May 24, 2000.

"Ultrafast Electron Diffraction"
J. C. Williamson, S. B. Kim, M. Dantus, and A. H. Zewail, Pacific Conference on Chemistry and Spectroscopy, Pasadena, CA. October 20, 1993.

CONFERENCE POSTER PRESENTATIONS (Presenter; Undergraduate*)

"Effects of Coulombic Interactions on Pre-Transition Droplet Formation in Liquid-Liquid Systems"
A. H. Williams*, D. L. Huber*, and **J. C. Williamson**, 74th Northwest Regional ACS Meeting, Portland, OR. June 16, 2019.

"Progress Towards Characterization of Pre-Transition Droplets in Liquid-Liquid Binary Systems"
Outstanding Student Poster Award Winner in the Division of Physical Chemistry
M. McKibben*, S. Rogers*, A. R. Wert*, K. C. Riley*, and **J. C. Williamson**, 254th National ACS Meeting, Washington, DC. August 23, 2017.

"Characterization of the 1,2-Propanediol + Benzene and 1,2-Propanediol + Benzene-d_6 Liquid-Liquid Phase Equilibria"
K. C. Riley*, C. A. Tibbetts*, M. McKibben*, T. Kallem*, and **J. C. Williamson**, 254th National ACS Meeting, Washington, DC. August 23, 2017.

"Laser Light Scattering Investigations of Membrane Permeability and Lipid Phase Transitions in the Undergraduate Biochemistry Laboratory**"**
T. P. Silverstein and **J. C. Williamson**, 248th National ACS Meeting, San Francisco, CA. August 10, 2014.

"Raman Investigations of the Aquation Reactions of the Anti-Cancer Prodrug NAMI-A**"**
J. D. Sumega*, S. Currie*, R. McClintic*, K. L. McFarlane Holman, and **J. C. Williamson**, 239th National ACS Meeting, San Francisco, CA. March 21, 2010.

"Year-Long Integrated Biochemistry Laboratory: An Instrument-Intensive Approach to the Study of Biomolecules"
S. R. Kirk, T. P. Silverstein, **J. C. Williamson**, D. E. Goodney, K. L. McFarlane Holman, and A. P. Duncan, 239th National ACS Meeting, San Francisco, CA. March 21, 2010.

"Up-Converted Fluorescence Kinetics from $[Ru(dmb)_3]^{2+}$ / 9,10-Diphenylanthracene Solutions"
M. A. Phimister* and **J. C. Williamson**, 233rd National ACS Meeting, Chicago, IL. March 26, 2007.

"Precise Determination of Binary Liquid Phase Transition Temperatures Using Laser Light Scattering"
C. B. Babayco*, K. M. Dean*, and **J. C. Williamson**, 228th National ACS Meeting, Philadelphia, PA. August 25, 2004.

"Raman Spectroscopy of the Methanol / Carbon Disulfide Liquid System in the Critical Point Region"
B. B. Smith* and **J. C. Williamson**, 59th Northwest Regional ACS Meeting, Logan, UT. June 8, 2004.

"Atomic Absorption Spectroscopy Across the Undergraduate Chemistry Laboratory Curriculum"
D. E. Goodney and **J. C. Williamson**, 227th National ACS Meeting, Anaheim, CA. March 28, 2004.

STUDENT CONFERENCE ORAL PRESENTATIONS (Presenter; Undergraduate*)

"Liquid-Liquid and Solid-Liquid Phase Behavior of an Imidazolium-Based Ionic Liquid + Benzene"
N. M. Rutter*, J. M. Piesner*, and **J. C. Williamson**, NCUR 2022 @Home, April 7, 2022.

"Cosmetoxicity: Evaluating Exposure Using Silicone Wristbands and Necklaces"
M. K. Hunter* and **J. C. Williamson**, NCUR 2021 @Home, April 14, 2021.

"Dimerization Kinetics of 3-Buten-2-one Observed Using Quantitative Nuclear Magnetic Resonance"
R. K. Smith* and **J. C. Williamson**, 20th Murdock College Science Research Conference, Seattle University, Seattle, WA. November 11, 2011.

"Phase Equilibrium Studies of the 3-Buten-2-one / Water Binary Liquid System"
M. Bicocca* and **J. C. Williamson**, Northwest Undergraduate Science Research Conference, Oregon Health and Science University, Portland, OR. April 5, 2008.

"The Equilibrium Phase Diagrams for the Binary Liquid-Liquid Systems 3-Buten-2-ol / Water and 3-Buten-2-one / Water"
K. M. Dean* and **J. C. Williamson**, Northwest Undergraduate Science Research Conference, Oregon Health and Science University, Portland, OR. April 8, 2006.

"Installation of a Spectroscopic CCD Camera for Raman Spectroscopy and Calibration with I_2"
J. Lambert* and **J. C. Williamson**, Northwest Undergraduate Science Research Conference, Oregon Health and Science University, Portland, OR. April 8, 2006.

"Kinetics Study of the Up-converted Fluorescence of Solutions Containing $[Ru(dmb)_3]^{2+}$ and 9,10-Diphenylanthracene"
M. A. Phimister* and **J. C. Williamson**, Northwest Undergraduate Science Research Conference, Oregon Health and Science University, Portland, OR. April 8, 2006.

"Measurement and Interpretation of Liquid-Liquid Cloud Point Transitions"
C. B. Babayco* and **J. C. Williamson**, Seventeenth National Conference on Undergraduate Research, University of Utah, Salt Lake City, UT. March 14, 2003.

"Experimental Design for Determining Phase Diagrams of Binary Liquid Systems"
C. B. Babayco* and **J. C. Williamson**, 11th Murdock College Science Research Conference, Whitman College, Walla Walla, WA. November 15, 2002.

"Effect of Ethanol on Miscibility in the Cyclohexane / Acetic Anhydride Binary Liquid System"
D. R. Sluss* and **J. C. Williamson**, Northwest Undergraduate Science Research Conference, Oregon Health and Science University, Portland, OR. April 13, 2002.

J. Charles Williamson

STUDENT CONFERENCE POSTER PRESENTATIONS (Presenter; Undergraduate*)

"Examination of Liquid / Vapor Surface Wetting Behavior in Gravity-Inverting Liquid-Liquid Systems"
E. P. Wylie*, N. M. Rutter*, and **J. C. Williamson**, 31st Murdock College Science Research Conference, Vancouver, WA. November 11, 2022.

"Liquid-Liquid and Solid-Liquid Phase Behavior of an Imidazolium-Based Ionic Liquid + Benzene"
N. M. Rutter*, J. M. Piesner*, and **J. C. Williamson**, 30th Murdock College Science Research Conference, Vancouver, WA. November 12, 2021.

"Determination of Critical Point Shift in the Isobutyric Acid + KCl + Water System"
J. M. Piesner*, N. M. Rutter*, and **J. C. Williamson**, 30th Murdock College Science Research Conference, Vancouver, WA. November 12, 2021.

"Exploring Pre-Transition Droplet Formation in Binary Systems Containing an Ionic Liquid"
D. L. Huber*, A. H. Williams*, and **J. C. Williamson**, 27th Murdock College Science Research Conference, Vancouver, WA. November 9, 2018.

"Ionic Impurity Effects in the Isobutyric Acid + Water System"
A. H. Williams*, D. L. Huber*, and **J. C. Williamson**, 27th Murdock College Science Research Conference, Vancouver, WA. November 9, 2018.

"Impurity Effects on Liquid-Liquid Binary Systems"
M. McKibben*, T. Kallem*, and **J. C. Williamson**, 26th Murdock College Science Research Conference, Spokane, WA. November 10, 2017.

"Exploration of Pre-Transition Droplet Formation in Liquid-Liquid Binary Systems"
Award Winner in Analytical / Inorganic / Physical Category
M. McKibben*, K. C. Riley*, and **J. C. Williamson**, 25th Murdock College Science Research Conference, Spokane, WA. November 4, 2016.

"Progress Towards Characterization of Pre-Transition Droplets in Liquid-Liquid Binary Systems"
M. McKibben*, S. Rogers*, and **J. C. Williamson**, 24th Murdock College Science Research Conference, Vancouver, WA. November 6, 2015.

"Determination of the Methanol + Carbon Disulfide Liquid-Liquid Phase Diagram"
E. Weatherford* and **J. C. Williamson**, 23rd Murdock College Science Research Conference, Vancouver, WA. November 14, 2014.

"Investigating Phase Transitions in Liquid-Liquid Systems Via Light Scattering and Raman Spectroscopy"
B. E. Miller* and **J. C. Williamson**, 8th Annual Western Conference for Undergraduate Women in Physics, California Institute of Technology, Pasadena, CA. January 18-20, 2013.

"Investigation of a Phase Diagram Anomaly in the *o*-Toluidine + *n*-Hexane Binary Liquid-Liquid System"
1st Place in Undergraduate Chemistry Category
E. F. Yee* and **J. C. Williamson**, 8th Sigma Xi Columbia-Willamette Student Research Symposium, Portland State University, Portland, OR. April 6, 2012.

"The Effects of Side Product Formation on the Phase Boundary of the 3-Buten-2-One / Water Liquid-Liquid System"
C. M. Harthcock* and **J. C. Williamson**, 17th Murdock College Science Research Conference, University of Puget Sound, Tacoma, OR. November 7, 2008.

"Using Molecular Iodine for High-Precision Spectroscopic Calibration"
C. Hernandez-Diaz* and **J. C. Williamson**, 16th Murdock College Science Research Conference, Willamette University, Salem, OR. November 2, 2007.

"Phase Equilibrium Studies of the 3-Buten-2-one / Water Binary Liquid System"
M. Bicocca* and **J. C. Williamson**, 16th Murdock College Science Research Conference, Willamette University, Salem, OR. November 2, 2007.

"A Kinetics Study of the Up-Converted Fluorescence from Solutions Containing $[Ru(dmb)_3]^{2+}$ and 9,10-Diphenylanthracene"
M. A. Phimister* and **J. C. Williamson**, 15th Murdock College Science Research Conference, University of Portland, Portland, OR. October 20, 2006.

"Laser Light Scattering Investigations of the Isobutyric Acid / Water Binary Liquid Mixture"
K. M. Dean* and **J. C. Williamson**, 13th Murdock College Science Research Conference, Lewis and Clark College, Portland, OR. November 19, 2004.

"Interpretation of Light Scattering for the Measurement of Binary Liquid Phase Diagrams"
C. B. Babayco* and **J. C. Williamson**, 12th Murdock College Science Research Conference, Pacific Lutheran University, Tacoma, WA. November 7, 2003

"Progress Towards Observing the Non-Coincidence Effect in Binary Liquid Mixtures"
B. B. Smith* and **J. C. Williamson**, 12th Murdock College Science Research Conference, Pacific Lutheran University, Tacoma, WA. November 7, 2003

"The Non-Coincidence Effect and Raman Spectroscopy"
C. H. Foot* and **J. C. Williamson**, 11th Murdock College Science Research Conference, Whitman College, Walla Walla, WA. November 15, 2002.

"Measuring Spermatazoa Mobility Via Laser Doppler Velocimetry"
S. L. Brumbach* and **J. C. Williamson**, 10th Murdock College Science Research Conference, Gonzaga University, Spokane, WA. November 2, 2001.

"Measuring Liquid-Liquid Phase Diagrams Using the Cloud Point Method"
D. R. Sluss* and **J. C. Williamson**, 10th Murdock College Science Research Conference, Gonzaga University, Spokane, WA. November 2, 2001.

"The Willamette University Laser Laboratory"
K. M. Schubothe*, D. R. Sluss*, and **J. C. Williamson**, 9th Murdock College Science Research Conference, University of Puget Sound, Tacoma, WA. November 3, 2000.

WORKSHOP PARTICIPATION

"The Role of Faculty Leaders" by Kathy Obear,
Willamette University, Salem, OR. August 18, 2022.

"Antiracist Curriculum Development: First Steps" by Nana Osei-Kofi and Kali Forman,
Willamette University, Salem, OR. June 8, 2022.

"Expanding Accessibility and Inclusivity for Neurodivergent Students"
Willamette University, Salem, OR. Nov. 30, 2021.

"SafeZone Training: GRAC"
Willamette University, Salem, OR. Sept. 21, 2021.

"Student-Led Panel on Diversifying the Curriculum"
Willamette University, Salem, OR. Mar. 23, 2021.

"Crafting Inclusive Classrooms"
Willamette University, Salem, OR. Jan. 16, 2020.

"Call Out Culture: Context and Consequences" by Emily Drew and Don Thomson
Willamette University, Salem, OR. Nov. 18, 2019.

"The Language of Racism" by Emily Drew
Willamette University, Salem, OR. Sept. 17, 2019.

"Managing Difficult Conversations and Improving Classroom Climate" by Jade Aguilar and Allison Hobgood, and "Unpacking Everyday Ableism" by Sue Minder
Willamette University, Salem, OR. May 24, 2019.

"Calculating Cultural Capital" by Kelvin Clark and Karen Wood
Willamette University, Salem, OR. January 17, 2019.

"Seeking Cultural Competence in Hiring Workshop" by Dr. Cris Cullinan
Willamette University, Salem, OR. September 26, 2016.

"Bias Training and Inclusive Pedagogy Workshop" by Cathy Busha
Willamette University, Salem, OR. September 7, 2016.

"College Colloquium Pedagogy Workshop"
Willamette University, Salem, OR. May 26-29, 2015.

"Faculty Development for 21st Century Diversity: Recognizing and Responding to Issues of Cultural Identity, Equity and Inclusion in the Academy"
Willamette University, Salem, OR. May 20, 2015.

"Writing More Competitive Research Grant Proposals" by Dr. Tom Wenzel
Willamette University, Salem, OR. June 7, 2014.

"College Colloquium Pedagogy Workshop"
Willamette University, Salem, OR. May 20-21, 2013.

"Avance I Course"
Bruker Offices, Billerica, MA. September 14-17, 2009.

"NMR Service and Maintenance Course"
Bruker Offices, Fremont, CA. May 5-8, 2009.

"POGIL Lab Workshop" by Dr. Frank Creegan and Dr. Rick Moog
Linfield College, McMinnville, OR. January 10, 2009.

"Council of Independent Colleges / Collegiate Learning Assessment Consortium Summer Meeting"
Washington Court Hotel, Washington, DC. August 3-5, 2008.

"Basic NMR: Fundamentals and Applications" by Dr. Gregory Helms
Center for NMR Spectroscopy, Washington State University, Pullman, WA. May 20-25, 2007.

J. Charles Williamson

"Presenting Data and Information" by Dr. Edward Tufte
Hyatt Regency Hotel, Bellevue, WA. June 12, 2002.