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## BIOGRAPHICAL SKETCH

### JOHN W. KELLER

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#### a. Professional Preparation

Undergraduate:	The Ohio State University	Chemistry	B.S. 1968
Graduate:	University of Wisconsin-Madison	Chemistry	Ph.D. 1976
Post-Doctoral:	University of Wisconsin-Madison	Chemistry	1976-79

#### b. Appointments

2012-present	Professor of Chemistry Emeritus
2007-2010	Chair, Department of Chemistry and Biochemistry
1991-2012	Professor, University of Alaska Fairbanks
1986-1991	Associate Professor, University of Alaska Fairbanks
1979-1986	Assistant Professor, University of Alaska Fairbanks

#### c. Selected Publications (graduate student; undergraduate student)

##### (i) Five Relevant Publications

1. J.W. Keller, T.I. Ayudhya, and N.N. Dingra, "Carbon monoxide formation from trimethylamine-borane-carboxylate: DFT studies of  $S_Ni$  and chelotropic mechanisms", *RSC Advances*, **10**, 16038-16044 (2020). <https://doi.org/10.1039/d0ra01572e>
2. J.W. Keller, "Sulfur Dioxide–Pyridine Dimer. FTIR and Theoretical Evidence for a Low-Symmetry Structure." *J. Phys. Chem. A* **119**, 10390-10398 (2015). <https://doi.org/10.1021/acs.jpca.5b06122>
3. J.W. Keller, **Bronwyn L. Harrod**, and **Sifat A. Chowdhury**, "Theoretical Study of Formic Acid-Sulfur Dioxide Dimers" *J. Phys. Chem. A* **114**, 13182-13188 (2010). <https://doi.org/10.1021/jp1076214>
4. J.W. Keller, "The Formic Acid-Trifluoroacetic Acid Bimolecule. Gas-Phase Infrared Spectrum and Computational Studies," *J. Phys. Chem. A* **108**, 4610-18 (2004). <https://doi.org/10.1021/jp049883x>
5. J.W. Keller, "Lewis Acid Catalyzed Diels-Alder Reaction of Carvone with Isoprene. Using 2-Dimensional NMR and Molecular Modeling to Solve a Stereo- and Regiochemical Puzzle," *The Chemical Educator* **11**, 262-6 (2006). <http://www.chemeducator.org/papers/0011004/1140262jk.pdf>

##### (ii) Five Significant Publications

1. E.J. Fogle, **See-Tarn Woon**, J.W. Keller, and M.D. Toney, "Role of Q52 in Catalysis of Decarboxylation and Transamination in Dialkylglycine Decarboxylase", *Biochemistry* **44**, 16392-16404 (2005). <https://doi.org/10.1021/bi051475b>
2. M.D. Toney, E. Hohenester, J.W. Keller, J.N. Jansonius, "Structural and Mechanistic Analysis of Two Crystal Structures of the Pyridoxal Phosphate-Dependent Dialkylglycine Decarboxylase", *J. Mol. Biol.* **245**, 151-79 (1995). <https://doi.org/10.1006/jmbi.1994.0014>
3. M.D. Toney, J.W. Keller, R.A. Paupit, J. Jaeger, **M.K. Wise**, U. Sauder, and J.N. Jansonius, "Crystallization and Preliminary X-ray Diffraction Studies of Dialkylglycine Decarboxylase. A Decarboxylating Transaminase", *J. Mol. Biol.* **222**, 873-875 (1991). [https://doi.org/10.1016/0022-2836\(91\)90580-Y](https://doi.org/10.1016/0022-2836(91)90580-Y)

4. J.W. Keller, K.B. Baurick, G.C. Rutt, M.V. O'Malley, N.B. Sonafrank, R.A. Reynolds, L.O.E. Ebbesson, and F.F. Vajdos, "Pseudomonas cepacia 2,2-Dialkylglycine Decarboxylase. Cloning and Sequencing of Structural and Repressor Genes." *J. Biol. Chem.* **265**, 5531-5539 (1990). [https://doi.org/10.1016/S0021-9258\(19\)39393-7](https://doi.org/10.1016/S0021-9258(19)39393-7)
5. J.W. Keller and B. J. Hamilton, "Enzymatic Resolution of 2-Trifluoromethylalanine" *Tetrahedron Letters*, **27**,1249-1250 (1986). [https://doi.org/10.1016/S0040-4039\(00\)84229-X](https://doi.org/10.1016/S0040-4039(00)84229-X)

#### **d. Synergistic Activities**

Poster at the Spring 2021 National Meeting of the American Chemical Society "Transition states for methyl transfer to a model quinonoid nucleophile", <https://doi.org/10.1021/scimeetings.1c00198>

System Administrator and consultant for UAF Computational Chemistry and WebMO site. 2009-present. <https://antec12.cns.uaf.edu/~frank/cgi-bin/webmo/login.cgi>

Recent invited seminars: University of Texas Permian Basin, Dept of Chemistry, "Theoretical Study of a Carbon Monoxide-Releasing Reaction", April 2022. UAF Dept of Chemistry & Biochemistry, "Investigating the "mystery methyl" of the fungal amino acid AIB" Jan. 2023; "Topics in Computational Chemistry" Sept. 2019.

Organized and chaired session on "Computational Chemistry" at American Chemical Society's 2017 Northwest Regional Meeting, Anchorage, AK.

2014-2023. Published 40 YouTube videos on [chemistry seminars](#), [general chemistry computational chem labs](#), [organic chemistry](#), and [molecular graphics](#).

Panelist for NSF/DUE Course, Curriculum, and Laboratory Improvement program. 2002-2006.

PI on "Persistent Organic Pollutants in Alaska. New GC-MS Experiments and Experiences for College and Pre-College Students", National Science Foundation/ DUE. 2008-2010.

PI on "Enhancing Chemistry Curricula Through Molecular Modeling: A Multi-Campus Consortium Approach" NSF/DUE-CCLI. 2000-2004. Consultation and collaboration on research and teaching applications of molecular modeling with students and professors across Alaska.

U.S. Patents "A Repressor Gene for Regulating Expression of Polypeptides and its Use in the Preparation of 2,2-Dialkylglycine Decarboxylase of Pseudomonas cepacia," 5,210,025. May 11, 1993. "Repressor Protein and Operon for Regulating Expression of Polypeptides and its Use In the Preparation of 2,2-Dialkylglycine Decarboxylase of Pseudomonas cepacia. 5,356,796. Oct. 18, 1994.

#### **e. Collaborators and other affiliations:**

##### **(i) Collaborators**

Thep Ayudhya, Nin Dingra, University of Texas Permian Basin

Thomas Green, University of Alaska Fairbanks

##### **(ii) Advisors**

Graduate: (The late) Charles Heidelberger, UW-Madison, McArdle Laboratory for Cancer Research;

(The late) Howard Whitlock, Department of Chemistry, University of Wisconsin-Madison

Post-doctoral: Marion H. O'Leary, Univ. of Wisconsin-Madison, Cal State Sacramento (Emeritus).

##### **(iii) Thesis Advisees (1998-2004)**

See-Tarn Woon, Ph.D. 1998, University of Auckland, NZ

Honghong Sun, Ph.D., 2000 University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

Julie LaRocca-Brigham M.S. 2003, Molecular Profiling Institute, Phoenix, AZ

Jeff Bickmeier, M.S.,2004, Arkea Bio, Arlington, MA