**VITA**



**Jory Ty Redd, Ph.D.**

**Chair, Department of Physical Science**



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***Education:***
1984- A.S. Engineering (High Honors), Utah State University Eastern Utah, Price, Utah

1987- B. S. Chemistry (Magna Cum Laude), Southern Utah University, Cedar City, Utah

1996- Ph.D. Chemistry, Host-Guest Chemistry, Brigham Young University, Provo Utah. Jerald S. Bradshaw, advisor.

***Professional Experience:***

2011-Present: Department of Physical Science, Southern Utah University, Cedar City, Utah

 **Department Chair:** Budgets, Annual Reports, Accreditation, Curricula.

1989-Present: Department of Physical Science, Southern Utah University, Cedar City, Utah

**Full Professor:** Medicinal Chemistry, Biochemistry, Organic Chemistry, Forensic Analysis of Drugs.

1989-Present: SUU Environmental Laboratory, Cedar City, Utah.

**Laboratory Director:** Microbiological and Chemical Analysis, NELAC, USEPA, UDOH

1990-Present Department of Physical Science, Southern Utah University, Cedar City, Utah

**Principle Investigator:** Molecular Recognition, Host-Guest Chemistry, Macromolecular Synthesis, Heterocyclic Synthesis, Asymmetric Synthesis.ost Guest

1988-1990Brigham Young University, Provo, UT

**Research Assistant:** Prof. Jerald S. Bradshaw and Reed M. Izatt; Organic Synthesis, Host-Guest Chemistry, Macromolecular Synthesis, Analytical Chemistry.

 **Nuclear Magnetic Resonance Spectroscopist:** advisor: Dr. Noel M. Owen

1985-1987 Southern Utah State College, Cedar City, Utah

**Laboratory Coordinator**: Microbiology, Advisor: Dr. Brent Palmer

1984-1987 Southern Utah State Environmental Laboratory, Cedar City, Utah

**Laboratory Manager**: Microbiologist, Chemist, Advisor: Dr. Joseph Comp

1981-1984 21st Century High Purity Metals, Blanding, Utah

**Quality Assurance Analyst**:

***Peer Review Experience:***

**Grant Review:** National Research Council, Office of Central Europe and Eurasia, COBASE, National University of Singapore Academic Research Fund Committee.

**Manuscript Review:** Journal of Heterocyclic Chemistry, Industrial and Engineering Chemical Research, Journal of Inclusion Phenomena.

**Standardized Assessment Review:** Educational Testing Services, Altius Test Prep Services

**External Accreditation Auditor**: Utah Valley University.

**Publication Review:** Wiley and Sons Publishing, Prentice-Hall Publishing, Mc-Graw Hill Publishing, Freeman Publishing.

**Award Evaluator:** International Macrocyclic Chemistry Award

***Honors and Awards:***

 **Academic:**

Distinguished Educator, Southern Utah University, Cedar City, Utah

Professor of the Year, Southern Utah University, Cedar City, Utah

Faculty Advising Award, Southern Utah University, Cedar City, Utah

Reuben Jones Scholar

Outstanding Physical Science Student

 **Research:**

Nicholes-Maw Fellowship

Dupont Fellowship

 1996 American Chemical Society Award in Separations Science (Group Member)

***Professional Affiliations:***

American Chemical Society, Altius MCAT Test Prep Services, National Environmental Laboratory Accreditation Conference,

***Referred Publications and/or Books***

1. **Redd, J. T.**; Bradshaw, J. S.; Huszthy, P.; Izatt, R. M. New Pyrimidino-Crown Ether Ligands. *J. Heterocyclic Chemistry.* **1994**, *31,* 1047.

2. Bradshaw, J. S.; Huszthy, P.; **Redd, J. T.**; Wang, X.X.; Hathaway, T.; Young, J. K.; Izatt, R. M. Enantiomeric Recognition of Chiral Ammonium Salts by Chiral Pyridino- and Pyrimidino-18-Crown-6 Ligands. *J. Heterocyclic Chemistry.*  **1995**, *67,* 691.

3. **Redd, J. T.**; Bradshaw, J. S.; Izatt, R. M. Ten Membered Rings or Larger with One or More Oxygen and Sulfur Atoms: Chapter 9.32 in Comprehensive Heterocyclic Chemistry, Vol 2, G. R. Newkome, ed., Pergamon Press. **1996**. (Invited Reference Book Chapter)

4. **Redd, J. T.** The Synthesis and Complexation Properties of Pyrimidino and Pyrimidono-Crown Ether Ligands. Brigham Young University Publishing. **1996**

5. **Redd, J. T.**; Bradshaw, J. S.; Huszthy, P.; Izatt, R. M. Pyrimidino- and Proton Ionizable Pyrimidono-Crown ether Ligands: Synthesis and Preliminary Complexation Studies *J. Incl. Phenom.* **1997***, 29*, 301. (Invited Award Publication)

6. **Redd, J. T.**; Bradshaw, J. S.; Huszthy, P.; Izatt, R. M.; Dalley, N. K. Synthesis and Complexation Studies of Pyrimidine Derived Crown Ether Ligands. *J. Heterocyclic Chemistry.* **1998***, 35*, 1.

7. Horvath, G.; Huszthy, P.; Szarvas, S.; **Redd, J. T.**; Bradshaw, J. S.; Izatt, R. M. Preparation of a New Chiral Pyridino-Crown ether based Stationary Phase for Enantioseparation of Racemic Primary Organic Ammonium Salts *Ind. Eng. Chem. Res*. **2000**, *39*,3576. (Invited Publication)

8. Huszthy, P.; Kertesz, J.; J. S. Bradshaw,; R.M. Izatt,; **J. T. Redd**. Synthesis of Proton-Ionizable Crown Ether Compounds Containing Substituted 1H-pyridin-4-one Subcyclic Units *J. Heterocyclic Chemistry.* **2001***, 38*, 1259. (Invited Publication)

9. **Redd, J. T.**; Bradshaw, J. S.; Izatt, R. M. Organic Macrocycles: Encyclopedia of Physical Science and Technology, Third Edition, Volume 11, R. Matsumura Ed., Academic Press **2002**. (Invited Reference Book Chapter)

10. Carroll, S.; Fleming, S. A.; Hirschi, J.; Liu, R.; Pace, J. L.; **Redd, J**. T. Asymmetric Dihydroxylation of Allenes. Tetrahedron Lett. **2004**, *45*, 3341-3343. <http://www.sciencedirect.com>

11. Fleming, S. A.; Liu, R.; **Redd, J**. T. Asymmetric Dihydroxylation of Disubstituted Allenes. Tetrahedron Lett. **2005**, *46*, 8095-8098. <http://www.sciencedirect.com>

12. Huntsman, S.; Force, S.; Weaver, K.; and **Redd, J. T.**; Characterization of Storm Water Runoff in the Coal Creek Drainage Basin*Acouras*. **2009,** *1* 17.

13. **Redd J.T.,** Steffensen M.B., Bradshaw J.S. and Izatt R.M. (2013) ***Organic Macrocycles*.** In: Reedijk, J. (Ed.) Elsevier Reference Module in Chemistry, Molecular Sciences and Chemical Engineering. Waltham, MA: Elsevier. 27-Dec-2013 doi:10.1016/B978-0-12-409547-2.05562-1.

14. Eves D. J., **Redd J.T.,** (2014*)* ***General Chemistry II: Setting the Stage on the First Day With Jeopardy*.** JCST, Vol. 43, (6). August 2014.

15. Weaver, J.B., Lamb, C., Weaver, K., Kaiser, J., and **Redd, J. T**., (2015) “***Characterization of the Major Ions of Coal Creek Near Cedar City, Utah*,**” The Compass; Earth Science Journal of Sigma Gamma Epsilon: V. 88, Iss. 4, Article 1. February 2015.

16. Eves, D. J.; Weaver, K. H.; **Redd, J. T. *Southern Utah University Internship: A Working Model of Peer Mentorship In Chemistry and the Environment: Pedagogical Models and Practices*; ACS Symposium Series 1214;** American Chemical Society: Washington, DC, 2015 pp 17-33.

***Presentations***

*1993 “Synthesis of Pyrimidino-Crown Ether Ligands.”* 205th American Chemical Society (A.C.S.) National Meeting. Denver, Co. (Oral)

*“Synthesis of Pyrimidino-Crown Ether Ligands.”* Micro American Chemical Society Meeting. Provo, UT. (Oral)

*“New Pyrimidino-Crown Ether Ligands.”* Academy of the Science, Arts, and Letters. Cedar City, UT. (Oral)

“*Asymmetric Dihydroxylation of Olefins.”* Brigham Young University. Provo, UT. (Oral)

1996 “*New Proton-Ionizable Pyrimidono-Crown Ether Ligands and their Complexation Properties.”* 211th American Chemical Society (A.C.S.) National Meeting. New Orleans, LA. (Invited Award Oralal Presentation)

*“Asymmetric Dihydroxylation of Allenes.”* Brigham Young University. Provo, UT. (Oral)

*“New Proton-Ionizable Pyrimidono-Crown Ether Ligands and their Complexation Properties.”* Southern Utah University. Cedar City, UT. (Oral)

1998 “*Asymmetric Dihydroxylation of Allenes.”* Central Utah Section of the American Chemical Society Meeting. Provo, UT. Provo, UT. (Poster)

*“The Medicinal Properties of Water.”* Washington County Water Conservancy District Water Fair. St. George, UT.

2004 *“Asymmetric Dihydroxylation of Allenes.”* 227th American Chemical Society (A.C.S.) National Meeting, Anaheim, CA. (Poster)

 *"Regio- and Stereocontrol of Allene Chemistry."* 59th Northwest and Rocky Mountain Regional Meeting of the American Chemical Society. Logan, UT. (Poster)

2005 *"Asymmetric Dihydroxylation & Kinetic Resolution of Allenes."*229th American Chemical Society (A.C.S.) National Meeting, San Diego, CA. (Poster)

2008 “*Synthesis of Pyridine Subcyclic Unts, A Process Improvement*.” Southern Utah University Scholarship Day. Cedar City, UT (Oral)

*“The Synthesis of 1-Ethyl-1’-Octadecyl-2, 2’-Cyanine Oidide by a – Cyanine Condensation*.” Southern Utah University Scholarship Day. Cedar City, UT (Oral)

*“Synthesis of Allenes for [2+2] Cycloaddition Reactions*.” Southern Utah University Scholarship Day. Cedar City, UT (Oral)

2009 *“Characterization of Storm Water Runoff in the Coal Creek Drainage Basin.”* UGRASP, Ogden, UT. (Poster)

2010 *“Synthesis and Host Guest Chemistry of Macrocyclic Crown Ethers.”* CSURS, Cedar City, UT. (Oral)

 *“Synthesis and Photophysical Properties of 1,8-Napthalamides.”* Southern Utah University Scholarship Day. Cedar City, UT (Poster)

2012 “Synthesis and Photophysical Properties of 1,8-Napthalamides.” 243th American Chemical Society (A.C.S.) National Meeting, San Diego, CA. (Poster)

2015 ***The Southern Utah University Water Laboratory: A Working Model of Peer Mentorship***. **J. Ty Redd**, Kim H. Weaver, Daniel J. Eves. 249 National Meeting Of The American Chemical Society, March 26, 2015.

***Benefits of Working In An Environmental Water-Testing Laboratory: How Applying What You Learn Prepares You For The Real World.*** D.J. Eves, **J.T. Redd**, K.H. Weaver, N.S. Werner, M. Valentine, S. Potter, D. Callison. 249 National Meeting Of The American Chemical Society, March 26, 2015. Oral Presentation.

**Current Research Projects:**

1). Synthesis and Design of M. tuberculosis malate synthase inhibitors for potential drug therapy.

2). Synthesis of 1,8-Naphthalimides*.*

3). Synthesis of Heterocyclic Chromophores*.*

4). One-Pot Synthesis of Aromatic Heterocyclic Compounds.

5). Title: **Synthesis and Design of M. Tuberculosis Malate Synthase Inhibitors for Potential Drug Therapy.** **The Southern Utah University Water Laboratory: A Working Model of Peer Mentorship.**

6). Title: **Use of Family Feud in Teaching Chemistry.**

7). Title: **Cosmetics Rethought, Redesigned, Self Shading.**

24). Title: **Natural Product Isolation and Characterization.**

***Research Funding***

1987-1991 U.S. Department of Energy

1991-2001 Office of Naval Research

1999-2001 Hungarian Scientific Research Fund OTKA T-25071

2004-2006 Department of Advanced Research Projects Agency (DARPA) Department of Defense

2008-2009 Environmental Protection Agency EPA grant NE - 97873501 – 0 Environmental Education Grant

 National Science Foundation NSF-CCLI #0935049 Biological Organic Reaction Animation BIO-ORA

2011-Present L.S. and Aline W. Skaggs Research Endowment

 Southern Utah University Faculty Scholarly Support Fund

***Professional Biography***

J. Ty Redd was born in Blanding Utah in 1960. Ty received his Associates of Engineering degree from Utah State University, College of Eastern Utah. He then attended Southern Utah University in Cedar City, Utah, on a music scholarship where he earned a bachelors of science degree in Chemistry with a minor in Mathematics. Ty started his graduate studies with Professors Jerald S. Bradshaw, and Reed M. Izatt at Brigham Young University where he studied how molecules communicate in host guest complexes. In 1989 he was hired as an assistant professor of chemistry at Southern Utah University and Director of the Southern Utah University Environmental Water Laboratory. He published his first paper in 1994 on the synthesis of New Pyrimidino-Crown Ether Ligands. His present rank of full Professor of Chemistry was reached in 2004.

Professor Redd's research interests involve the synthesis and characterization, of macromolecular heterocyclic compounds and their molecular recognition properties. His research, ranges from the chemical synthesis and host guest properties of medicinal compounds, enzyme inhibitors, and heterocyclic chromophores, to studying the selective separation of molecules including environmental contaminants from water. A strong advocate for student learning, Dr. Redd involves his students in all his research activities. He has received “Distinguished Educator” and “Professor of the Year” awards from Southern Utah University. Recently he was awarded the Faculty Partner in Advising Award for his contributions to student advising and a 2015 Honorary Arête for diligence and excellence.

Dr. Redd enjoys the outdoors, sports, grandchildren, concerts, recording and playing music in his home studio.