

# **CURRICULUM VITA for CATHERINE E. KLEHM 2015**

## **Educational Experiences**

Ed.D., Chemistry/ Educational Administration in Higher Education

Oklahoma State University, Stillwater, OK, April, 2001.

Advisor: Dr. John Gelder

Doctoral Dissertation: *Studying the Effects of Multimedia-Enhanced Chemistry Lectures on Student Learning*

M.Ed., Chemistry/ Secondary Teaching Methods in Science

Northeastern State University, Tahlequah, OK, May, 1992.

Master's Thesis: *Exciting Alternatives to Traditional Science Teaching*

B.S., Chemistry/ Science Secondary Education

Oral Roberts University, Tulsa, OK, May, 1990.

## **Instructional Experiences**

Associate Professor of Chemistry, Oral Roberts University

Fall 2004 to Present

- General Chemistry I Lecture and Lab  
Introductory course for science majors that includes topics of scientific expression and enumeration, nomenclature, stoichiometry, molecular geometry, and gas laws with a laboratory component that serves to give application of these concepts
- General Chemistry II Lecture and Lab  
Continuation course for science majors that includes topics of solution dynamics and stoichiometry, thermodynamics, kinetics, acid/base chemistry, and electrochemistry with a laboratory component that serves to give application of these concepts (the lab manual is an original work completed in the Fall of 2008 which is a customized manual for the ORU lab course)
- General Chemistry II Honors Lab (an original curriculum)  
Laboratory course that largely resembles the regular sections of the course yet differs with a writing emphasis on the lab material including an introduction to NMR, IR and Mass Spectroscopy; the Spectroscopy component requires a formal lab write-up
- Principles of Chemistry Lecture (regular and Honors) and Lab

A basic Chemistry course for non-science majors that focuses on scriptural application of concepts, Christian worldview and life application of basic chemistry concepts and experimentation thereof

- Chemistry Senior Seminar  
The culminating course for Chemistry majors where instruction on giving a professional talk is given to students who are then guided through preparation of their own seminar of their senior paper work
- Secondary Teaching Methods: Science  
A discussion course that focuses on teaching various science lessons using the methods of learning styles, multiple intelligences, ITI, and right brain/ left brain teaching in which students complete several portions of their teaching portfolio during the course and have required opportunities for designing and teaching science lessons and being critiqued on that effort; it includes an observation practicum in a local school and a service learning project
- Secondary Student Teaching 7-9 and 10-12  
A practical course where the teacher candidate is in a local secondary school daily, and is supervised on site four times but is assisted and counseled in the teaching effort via weekly meetings for the course
- Honors Principles of Leadership  
An Honors Fellows course examining the major theories of leadership and incorporating a practical application of leadership along with a personal review of leadership style and personality traits

Assistant Professor of Chemistry, Oral Roberts University

Spring 2001 to Spring 2004

- General Chemistry I Lecture and Lab
- General Chemistry II Lecture and Lab
- General Chemistry II Honors Lab
- Principles of Chemistry Lab
- Secondary Teaching Methods: Science
- Secondary Student Teaching 7-9 and 10-12
- Honors Principles of Leadership

Instructor, Oral Roberts University

Fall 1992 to Spring 2001

- General Chemistry I Lecture (since Spring 1998) and Lab
- General Chemistry II Lab
- Principles of Chemistry Lab
- Secondary Teaching Methods: Natural Science
- Secondary Student Teaching 7-9 and 10-12

Teacher, Victory Christian School

#### Academic Years 1991 to 1993

- High School Physics  
Year-long course consisting of lectures and labs incorporating major topics in General Physics

#### Academic Year 1991 to 1992

- High School Chemistry  
Year-long course consisting of lectures and lab which taught many of the major concepts in Chemistry, including an emphasis of laboratory skill with lab equipment

### **Research Activities**

#### Grants Received

- Service Learning (\$500 each). Fall, 2002 - 2006.  
Students from two senior-level courses combined their course knowledge in visiting the lab classrooms of area high schools to analyze the classroom for safety. For each school, approximately \$250 of the grant was used to purchase supplies to help the lab better comply with safety standards.
- ORU Math/Science Summer Academy (\$153,035 total). Summers, 1999-2001.  
Director of and Instructor in “An Integrated Program to Enhance Mathematics and Science Skills Through Hands-On and Peer Teaching Experiences” funded by the Oklahoma Regents for Higher Education. Each summer, the Academy hosted 56 junior and high school students for science and math enrichment experiences.
- Broken Arrow Rotary Club Summer Academy Grant (\$3,000 total). Summers, 1999-2000.  
Sought and obtained supplementary funding from this organization due to cuts by the state funding agency.
- ORU Intramural Grant (\$1,585), Fall 1998  
Used to purchase software for research conducted at ORU during the academic years of 1998-2000. Annual progress/research reports were submitted to Dr. Dave Connor.

#### Grants Submitted

- National Science Foundation Robert Noyce Scholarships for Teaching Program  
Submitted a \$1.1 million grant proposal called MASST – Math and Science Scholarships for Teaching, serving as PI along with LeighAnne Locke as Co-PI

## Professional Activities

### Professional Organizations

- American Chemical Society (ACS) Member, 1999-2013.  
Tulsa Local Section – consists of 200 area chemists  
Officer in Tulsa Local Section (elected position) 2004-2006
- National Science Teacher's Association, 1994-present
- Society of College Science Teachers, 1994-present
- Alpha Lambda Delta (faculty advisor and honorary member), 2005 - present

### Professional Conferences

- Attended the American Chemical Society Pentasectional Meeting, held at Oklahoma State University, March 29, 2014
- Attended Conference by the American Academy for the Advancement of Sciences (AAAS) in Washington D.C. for grant writers of the Robert Noyce Scholarship Program, January 9, 2014
- Attended the Oklahoma Commission for Teacher Preparation for Program Review on Friday, in Norman, OK, November 8, 2013.
- Attended the Certification Examinations for Oklahoma Educators Passing Score Review Conference for the Oklahoma Subject Area Test for Chemistry in Norman, OK, October 2, 2013.
- Attended the American Chemical Society Pentasectional Meeting, held at the University of Tulsa, March 9, 2013
- Attended the "Igniting the Passion for Teaching Conference" on November 8-9, 2012, at the Annual Teacher's Conference of the South Central Region of ACTS and ORUEF in Dallas, TX
- Framework Review Conference for the Oklahoma Commission for Teacher Preparation (OCTP) serving on the Chemistry Content Advisory Committee for the Certification Examinations for Oklahoma Educators (CEOE), selection and attendance by invitation after applying for committee membership, Oklahoma City, OK, October, 2012

- Attended the 2011 OACTE/OATE/OCTP Fall Conference in Edmond, OK and completed the Program Review Training session for Science Education, November 18, 2011
- Successfully completed *Board of Examiners* Training for the Oklahoma Commission for Teacher Preparation (OCTP) and the National Council for Accreditation of Teacher Education (NCATE), February, 2011
- Attended the 56<sup>th</sup> Annual Pentasectional American Chemical Society Meeting entitled, “Petrochemicals and Beyond: Chemical Technology for the 21<sup>st</sup> Century” in Bartlesville, OK, March 12, 2011
- Attended the 2010 OACTE/OATE/OCTP Fall Conference in Norman, OK and completed the Program Review Training session for Science Education, November 12, 2010
- 54<sup>th</sup> Oklahoma Pentasectional Meeting of the American Chemical Society. Tulsa, OK. April, 2009. (ORU was the host school so I helped set up the event and worked it that day as well as attended some sessions and interacted with professional chemists in attendance.)
- National Science Teacher’s Association National Meeting, San Diego, CA, March 2002. Attended the institute sessions, “Preparing for an NCATE Review of the Science Teacher Preparation Program”.
- 47<sup>th</sup> Oklahoma Pentasectional Meeting of the American Chemical Society. Duncan, OK. March, 2001.
- 45<sup>th</sup> Oklahoma Pentasectional Meeting of the American Chemical Society. Bartlesville, OK. October, 2000.
- Technology Seminar by Jamie McKenzie entitled, “Its Not About Technology; It’s About Teaching!”, January, 2000.
- 44<sup>th</sup> Oklahoma Pentasectional Meeting of the American Chemical Society. Tulsa, OK. October, 1999.

## Awards

- Tenure status, 2014
- Faculty Member of the Year for the Department of Biology and Chemistry, 2014

- Received a three-year grant for the Summer Math and Science Academy from the Oklahoma State Regents for Higher Education (serving as Co-Director with PI, Dr. John Matsson), 2013-2015
- Service Award from National Council of Alpha Lambda Delta Honor Society for Advisement of First Year Students, 2011
- Outstanding Service Award Recipient for the School of Science and Engineering, 2010
- Writing Across the Curriculum Award, 2007
- 2007 ePortfolio Teacher of the Year
- ORU Dean's Award for "Integrating Technology into the Curriculum", 2004
- Dr. Fagin's *Caught Doing Good Awards*; "The Bill Nye Award" for excellence in making math and science exciting, 1999.
- State of Oklahoma Secondary Teaching Licensure (valid until June, 2017)
  - Chemistry
  - Physics
  - Physical Science
  - Human Anatomy and Physiology

## Publications

- Klehm, C.E. *Study General Chemistry II Lab to Show Yourself Approved...To Go Into Every Person's World*, a lab manual for the ORU CHE 112 course, 2008.
- *Studying the Effects of Multimedia-Enhanced Chemistry Lectures on Student Learning*, Doctoral Dissertation on file at Oklahoma State University, Stillwater, OK.
- *Exciting Alternatives to Traditional Science Teaching*, Master's Thesis on file at Northeastern State University Library, Tahlequah, OK.

## Presentations

- Presented two professional talks at the ORUEF Houston Area Educator's Conference, given on October 23 and 24<sup>th</sup>, 2014; one entitled "Creative Resources for Enriching Secondary Science Curricula" and the second entitled "Science Laboratory Safety for All Schools"

- “Integrating Christian Worldview into Secondary Science Curriculum”, given on November 9, 2012, at the Annual Teacher’s Conference of the South Central Region of ACTS and ORUEF in Dallas, TX
- Presented the ORU Chemistry Service Learning Project at the Conference entitled, “Service-Learning, Civil Engagement and Experiential Education: Building on the Research Related to Pedagogies of Engagement”, March 29, 2006
- Taught Intel’s “Teach to the Future” curriculum for secondary teaching students in the fall semester, 2002 and several lectures of the course, “Educational Technology” in the spring semester, 2003.
- Klehm, C. E. “Studying the Effects of Multimedia-Enhanced Chemistry Lectures of Student Learning,” 2001 Pentasectional Meeting of the American Chemical Society, Duncan, OK, March, 2001.
- Klehm, C. E. Participant in the ORU Alumni Faculty Recognition Awards Competition, Fall 2001.

## Community/University Service

- Elected representative of the Department of Biology and Chemistry to the University Faculty Senate, Fall 2011- Spring 2015
- Chair of the College of Science and Engineering Recruitment Committee, Spring 2013 – present
- Served on the Dean Selection Committee for the College of Science and Engineering, representing the Department of Biology and Chemistry, Fall 2012
- President for the College of Science and Engineering Faculty Senate, 2011-2012
- Standards and Evaluations Committee for the Faculty Senate, 2010 - present
- Professional Development Committee for the College of Education, serving as the secondary representative, 2011 - present
- Educational Liason for the *Elsing Museum*, 2010 - present
- Served on the Academic Efficiency Committee, 2009
- General Education Committee for the Faculty Senate, 2009- present
- Served as the contact faculty member for the General Chemistry Lab remodel project, 2009-2010

- Member of Vice President's Budget Committee, 2007
- Subcommittee Chair for UFA Ad-Hoc committee on University Standards and Evaluations (reviewing Grade Inflation), and doing a departmental level analysis of grades issued over twenty semesters, 2005 - 2009
- Subcommittee chair for Academic Integrity for the NCAA Site Visit and responsible for writing one-third of the self study for reaccreditation for athletics, 2006
- ePortfolio Lab instructor for the class, *ePortfolio: Journey to a Transformed Life*, 2004 – present
- Faculty Advisor for freshman Honor Society, *Alpha Lambda Delta*, 2005 - present
- Coordinator of the ORU Alumni Faculty Recognition Awards (Faculty Showcase), 2002 – 2005
- Chair of Faculty Enrichment Committee for ORU University Faculty Assembly, 2002 - 2005
- Elsing Museum Advisory Board member, 2000 – present
- Teacher for ORU Math and Science Summer Academy, most summers, 1994-present
- ORU School of Education Faculty Senate Student Teaching Admissions and Placement Committee member, 1998 - 2008
- Chemistry Department Student Worker Supervisor, 1995 - 2006
- Local Science Fair judge and coordinator, 1993 - 2010
- Advisor for the Science Secondary Education majors, 1992 - present
- Professional Collaboration with many area secondary schools, 1992 - present
- Chemistry Department Lab Coordinator, 1992 - present
- Regional Science and Engineering Fair judge in Physical Sciences, Tulsa, OK, 2003 - 2005
- Intel's *Innovations in Education Institute* participant, summer 2003
- Taught original curriculum of PowerPoint design and implementation to students in courses from other departments and majors, 2002 - 2003



- Intel's *Teach to the Future* program trainee/ trainer, Summer 2002 – 2003
- Mentoring role in University Leadership Institute, 2002 - 2003
- University Leadership Institute, May 2002
- Served on NCAA interim report committee for “Academic Integrity”, Summer 2002
- Faculty Mentor, 2001 - 2002
- ORUEF National Competition Science Fair judge, 2000 - 2001
- Director of ORU Math/Science Summer Academy, 1999 - 2001
- Master Trainer in Technology, 1999 - 2002
- State Science and Engineering Fair judge in Physical Sciences in Ada, OK, 1999-2003
- ORU University Faculty Assembly Committee member on Faculty Enrichment Committee, 1999 - 2000
- Higher Education Representative and Consultant for TEEMS (Teams Enhancing Eisenhower Math and Science), 1999 - 2000
- Teacher and Coordinator for ORU Math and Science Summer Academy, 1994 -1998
- Lead-Teacher in Technology, 1998