

**Denise N. Rau**  
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**Education:** **Ph.D., Inorganic Chemistry**, University of Massachusetts, Amherst, 1988.  
**B.S., Chemistry, Magna Cum Laude**, University of Massachusetts, Amherst, 1981

**Teaching Experience:** **Chemistry Teacher**, Farmington High School, 10/2007-6/2008, long-term substitute. Teaching Honors Chemistry and Forensics Science; again teaching academic chemistry.

**Chemistry Teacher**, Windsor High School, 2002-2005. Taught College Preparatory, Honors and AP Chemistry.

**Curriculum Development:** Extensive work throughout the first school year and summer break developing an innovative, concept-based curriculum. Curriculum launched fall, 2004.

**Club Advisor:** Chemistry Club. A very popular new club initiated this year with one of my AP Chemistry students.

**Chemistry Olympiad 2003**

**Chemistry Teacher**, Farmington High School, 1998-2000. Taught Honors and Academic level general chemistry.

**Committee Work:** Principal's Advisory Committee, 1999-2000. Representative for the science department at a monthly meeting with the principal to communicate questions and concerns between the department and the administration.

**Associate Professor of Chemistry**, Saint Joseph College, 1993-1996.

**Assistant Professor of Chemistry**, Saint Joseph College, 1986-1993.

**Department Chairperson**, 1993-1994.

Courses developed and taught: General and Organic Chemistry for Nursing Students; General Chemistry (two semester sequence for majors); Biochemistry for Nursing Students; Organic Chemistry (two semester for majors), Instrumental Analysis (undergraduate majors), and graduate level Instrumental Analysis, Inorganic Chemistry and Organometallic Chemistry.

**Committee Work:** Faculty Affairs, Faculty Development (Chair) and Curriculum (Chair) Committees as well as lesser or ad hoc committees.

**Undergraduate Student Research Projects and Independent Studies** were routinely directed.

**Academic Advisor** for in-coming freshmen and chemistry students.

**Teaching Assistant**, Recitation teacher for undergraduate chemistry courses, University of Massachusetts, 1981-1984

### **Inquiry Teaching:**

**Content Advisor, Inquiry Institute, CT Academy of Education, Summer, 2006**  
Participated in the planning of a unit for 8<sup>th</sup> grade science using a UBD approach and development of a standards-based, inquiry-learning activity with middle school teachers in districts dedicated to incorporating inquiry-style methods into the science classroom. Responsible for advising teachers and for writing “content notes” for use by teachers who will teach the unit as a refresher to the actual science content. The unit involved Newton’s First and Second Laws.

### **Research**

#### **Experience:** **Research Assistant-University of Massachusetts, 1983-1986.**

Synthesis and structural characterization of Group IV coordination compounds by X-ray crystallography, IR spectroscopy, Mössbauer spectroscopy and NMR spectroscopy.

**Laboratory Assistant, University of Massachusetts, 1981-1982.** Solution preparation and lab set-up for undergraduate general chemistry classes.

**Intern, Naval Research Laboratory**, Washington, D.C., March, 1981. Synthesis and characterization of fluorescent coordination compounds of zinc.

**Intern, Michigan State Police Forensic Laboratory**, Warren Michigan, summer, 1980. Qualitative and quantitative analysis of illicit drug samples using UV-visible and IR Spectrophotometry, mass spectroscopy and thin layer and gas-liquid chromatography.

**Publications:** “A Soluble, Linear Schiff-Base Coordination Polymer Containing Eight-Coordinate Zirconium(IV)”, Macromolecules, 1985, 18, 1371 (with R. Archer, M. Illingsworth and C. Hardiman).

“Intramolecularly Formed Pentacoordinated Structures of Salicylic Acid, o-Anisic Acid and p-Methylthiobenzoic Acid”, Inorganic Chemistry, 1984, 23, 3153 (with J. Vollano, R.O. Day, V. Chandrasekhar and R.R. Holmes).

#### **Grants:**

NSF-ILI (Instrument Equipment Grant, FTIR), 1994, \$17,750.  
Pfizer Undergraduate Summer Research Grant, 1991, \$5000.  
Saint Joseph College Summer Mini-grants for undergraduate research/course work, 1988, 1990, 1991, 1992 (\$500-\$1500).

**Memberships:** ACS, NSTA, NEACT

#### **Courses:**

Connecticut Alternate Route to Certification (ARC), Summer, 1998.  
Introduction to Educating Learners with Exceptionalities: Education of the Exceptional Learner, Central Connecticut State University, New Britain, CT, Fall, 1997.