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**PROFESSOR, DEPARTMENT OF CHEMISTRY**  
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**EDUCATION:**

- 1981-1986: Arizona State University, Ph.D.  
Major: Solid State Chemistry  
Thesis Topic: Electron Microscopy and Crystal  
Chemistry of Compounds Related to  
 $\beta$ -Alumina and Magnetoplumbite  
Advisor: Prof. Michael O'Keeffe
- 1977-1981: University of Wisconsin at River Falls, B.S.  
Major: Chemistry  
Minors: Physics and Mathematics

**PROFESSIONAL EXPERIENCE:**

- 2003-present: PROFESSOR, Dept. of Chemistry, Youngstown State University, Youngstown, Ohio.
- 2003-2004: PROFESSOR AND ACTING CHAIR, Dept. of Chemistry, Youngstown State University, Youngstown, Ohio.
- 1998-2003: ASSOCIATE PROFESSOR, Dept. of Chemistry, Youngstown State University, Youngstown, Ohio.
- 1992-1998: ASSISTANT PROFESSOR, Dept. of Chemistry, Youngstown State University, Youngstown, Ohio.
- 1990-1992: VISITING ASSISTANT PROFESSOR, Dept. of Chemistry, Illinois Institute of Technology, Chicago, Illinois.
- 1988-1990: POSTDOCTORAL RESEARCH FELLOW, Dept. of Materials Science, Northwestern University, Evanston, Illinois.
- 1986-1988: SOFTWARE DESIGN/TESTING ENGINEER, Radar Systems Group, Hughes Aircraft Company, El Segundo, California.

### GRADUATE AND SWING COURSES:

- Chem. 5830; *Intermediate Inorganic Chemistry*: Reactions and descriptive chemistry of transition metal, organometallic, and main-group compounds.
- Chem. 5831; *Inorganic Chemistry Laboratory*: Synthesis & characterization of typical inorganic compounds.
- Chem. 5832; *Solid State Structural Methods*: Comprehensive lecture & lab - complete hands-on structural characterization of solids via single crystal & powder X-ray diffraction; electron diffraction.
- Chem. 6931; *Advanced Inorganic Chemistry I*: Current bonding theories, applications of Group Theory.
- Chem. 6980; *Introduction to Chemical Research*: Principles of chemical research planning, design, execution, and reporting.

### UNDERGRADUATE COURSES:

- Chem. 1515 and 1516; *General Chemistry 1 & 2*.
- Chem. 1515L and 1516L; *Laboratory Component For General Chemistry 1 and 2*.
- Chem. 1515R and 1516R; *Recitation for General Chemistry 1 and 2*.
- Chem. 3729; *Inorganic Chemistry*: Fundamental principles of bonding, structure, and properties for the elements and molecular, solid state, and coordination compounds.
- Chem. 4850; *Chemistry Research*: Research planning, design, and execution including information retrieval, technical writing, and critical scientific analysis.

### REFEREED PUBLICATIONS (Last Five years):

- "Cu(I)-Catalyzed Synthesis of D-Mannofuranosyl-1-4-Disubstituted 1,2,3-Triazole Carbohydrids", \*\*\*P.L. Miner, **T.R. Wagner**, and P. Norris, *Heterocycles*, **65(5)**, 1035-1049, 2005.
- "Doubled-Cubic Ca<sub>2</sub>NF," \*D.R. Jack, M. Zeller, and **T.R. Wagner**, *Acta Crystallographica*, **C61**, i6-i8, (2005).
- "1,12-Diferrocenyldodecane at 100K," \*D.M. Bequeath, \*\*\*R.L. Porter, \*M.W. Lufaso, **T.R. Wagner**, \*\*\*R.L. Kusnic, M. Zeller, and L.S. Curtin, *Acta Cryst*, **E61**, 1070-1072 (2005).
- "Synthesis and Characterization of ReO<sub>4</sub>-Containing Microporous and Open Framework Structures", J. Luo, \*B. Alexander, **T.R. Wagner**, and P.A. Maggard *Inorganic Chemistry*, **43**, 5537-5542 (2004).

- "Preparation and Crystal Structure of  $Ba_2NF$ ," \*\*H. Seibel and **T. Wagner**, *J. Solid State Chemistry*, **177**, 2772-2776 (2004).
- "Addition of Lithiated C-Nucleophiles to 2,3-*O*-isopropylidene-D-erythronolactone: Stereoselective Formation of a Furanose C-Disaccharide ", \*\*\*J.L. McCartney, \*\*\*C.T. Meta, \*\*\*R.M. Cicchillo, \*\*M.D. Bernardina, **T.R. Wagner**, and P. Norris, *Journal of Organic Chemistry*, **68(26)**, 10152-10155 (2003).
- "Bis(ditolyl)phosphinoethane", M. Zeller, \*\*\*E. Lazich, **T.R. Wagner**, and A.D. Hunter, *Acta Cryst*, **E59**, 1721-1722 (2003).
- "1-(2',3'-anhydro-5'-*O*-benzoyl- $\beta$ -D-lyxofuranoyl)-5-fluoro-uracil", **T.R. Wagner**, R.R. Gadikota, C.S. Callam, and T.L. Lowary, *Acta Cryst.*, **E59**, 1-3 (2003).
- "2,3-Anhydrosugars in Glycoside Bond Synthesis. Highly Stereoselective Syntheses of Oligosaccharides Containing  $\alpha$ - and  $\beta$ -Arabinofuranosyl Linkages", R.R. Gadikota, C.S. Callam, **T. Wagner**, \*\*\*B. Del Fraino, and T.L. Lowary, *Journal of the American Chemical Society*, **125(14)**, 4155-4165 (2003).
- "Crystal structure of 1,2;5,6-di-*O*-isopropylidene-3-*O*-(phenylacetyl)-D-glucofuranose," \*J. Sheville, \*\*\*D.F. Berndt, **T.R. Wagner**, and P. Norris, *J. of Chemical Crystallography*, **2002**, *J. of Chem. Crystallography*, **33(5/6)**, 407-410 (2003).
- "Preparation and Crystal Structure Analysis of  $Sr_2NF$ ," **T. Wagner**, *J. Solid State Chemistry*, **169**, 13-18 (2002).
- "X-Ray crystal structure of methyl 1,2,3,4-tetra-*O*-acetyl- $\beta$ -D-glucopyranuronate," \*\*\*Y.Y. Root, **T. Wagner**, and P. Norris, *Carbohydrate Research*, **337**, 2343-2346 (2002).
- "Preparation and Crystal Structure Analysis of  $Ca_2NF$ ," \*\*\*R. Nicklow, **T. Wagner**, and C. Raymond, *J. Solid State Chemistry*, **160**, 134-138 (2001).

\*Denotes YSU undergraduate student co-author

\*\*Denotes NSF-REU student co-author (i.e. undergraduate from another university working at YSU as part of our National Science Foundation Research Experiences for Undergraduates summer program)

\*\*\*Denotes YSU graduate student

## LABORATORY MANUALS

- Laboratory Experiments for General Chemistry 1515L, **Timothy R. Wagner** and Friedrich W. Koknat, Pearson Custom Publishing (Prentice Hall), Fall, 2002.
- Laboratory Experiments for General Chemistry 1516L, **Timothy R. Wagner** and Friedrich W. Koknat, Pearson Custom Publishing (Prentice Hall), Spring, 2003.

**EXTERNAL GRANTS FUNDED AS PRINCIPAL INVESTIGATOR (Last Five Years):**

- "RUI-IMR: Upgrade of a Transmission Electron Microscope for Materials Characterization", **T. Wagner** and R. Beiersdorfer, *National Science Foundation, Instrumentation for Materials Research, Division of Materials Research* (NSF-RUI-IMR # 0216705), **\$120,237**, 2002-2004.
- "Acquisition of a Powder X-Ray Diffractometer System", **T. Wagner**, R. Beiersdorfer, and A. Hunter, *National Science Foundation, Major Research Instrumentation, Division of Materials Research* (NSF-MRI-DMR #0116426), **\$170,310**, 2001-2002.
- "Integration of Computer Technology into the General Chemistry Curriculum", **T. Wagner** and J. Mike, *National Science Foundation, Division of Undergraduate Education: Course, Curriculum, and Laboratory Improvement* (NSF DUE CCLI #9981040), **\$94,945**, 2000-2002.

**EXTERNAL GRANTS FUNDED AS CO-PRINCIPAL INVESTIGATOR (Last Five Years):**

- "RUI - Purchase of Glove Box and Vacuum Line Systems for Materials Synthesis & Characterization", **A.D. Hunter**, L.S. Curtin, S.R. Lovelace-Cameron, and **T.R. Wagner**, *CHE Chemistry Research Instrumentation and Facilities Grant* (NSF RUI-CRIF-CHE #0130968), **\$131,779**, 2002-2005.
- "Research Experience for Chemistry at Youngstown State University: A Bridge Between Four-Year Colleges and Ph.D. Research Universities", **D. Mincey**, A. Hunter, J. Jackson, S. Lovelace-Cameron, and **T. Wagner**, *National Science Foundation, Division of Chemistry: Research Experience for Undergraduates* (NSF REU-CHEM 0097682), **\$180,000**, 2001-2003.
- "WEB Accessible Single Crystal X-Ray Diffraction Facility for a Consortium of Predominantly Undergraduate Institutions", **A.D. Hunter**, L.M. Hoistad, A.J. Jircitano, **T. Wagner**, and E.P. Zovinka, *National Science Foundation, Division of Undergraduate Education: Course, Curriculum, and Laboratory Improvement* (NSF DUE CCLI 0087210), **\$200,000**, 2001-2004.