

PAUL A. LOEFFLER

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Education

- 1969-73 Rice University, Houston, TX, M.A., Ph.D., Physical-Inorganic Chemistry, fully supported by Rice University Fellowships, National Institutes of Health Traineeship, and Robert A. Welch Foundation Fellowships.
- 1965-69 Wittenberg University, Springfield, OH, B.A., Chemistry (ACS).

Professional Appointments

- 2009- Guest Researcher, National Institute for Environmental Health Sciences. Research in protein structure by nuclear magnetic resonance, with Drs. R.L. London and M.J. Cuneo.
- 1985- Professor of Chemistry. Research in inorganic chemistry, applied environmental chemistry, and structural biochemistry. Sam Houston State University, Huntsville, TX.
- 1997-2009 Board of Directors, ThermoEnergy Corporation, Little Rock, AR.
- 1994-1997 Board of Directors, Texas Research Institute for Environmental Studies, Huntsville, TX.
- 1985-1995 Chairman of the Department, Sam Houston State University, Huntsville, TX.
- 1979-1985 Associate Professor, Sam Houston State University, Huntsville, TX.
- 1975-1979 Assistant Professor, Sam Houston State University, Huntsville, TX.
- 1973-1975 Visiting Assistant Professor, General Chemistry Program, under the direction of Dr. Gilbert Haight. Research in organometallic chemistry, magnetic resonance applications with Dr. T. L. Brown. University of Illinois, Urbana, IL.
- 1969-1973 Research Assistant. Studied applications of lanthanide shift reagents in carbon-13 nuclear magnetic resonance with Dr. O.A. Gansow. Rice University, Houston, TX.

Grants and Contracts

- 2009 *Proposed Faculty Development Leave, Fall 2010*, Sam Houston State University, estimated value \$50,000.
- 2006-2007 *Undergraduate Research Funding*, ThermoEnergy Corporation, \$5,200.
- 2003 National Science Foundation (NSF)-Division of Undergraduate Course, Curriculum, and Laboratory Improvement, Center for Workshops in Chemical Sciences, Forensic Science Workshop travel grant, estimated value \$2,000.

- 2002-2005 *Pilot Scale Demonstration of Ammonia Extraction from Swine Urine*, ThermoEnergy Corporation, \$7,000.
- 1999-2002 *Evaluation and Optimization of the Ammonia Recovery Process*, Foster Wheeler Environmental Corporation, \$42,000.
- 1997-2001 *Proposal to Investigate Former Wood Treating Sites at the Beto I, Coffield and Estelle Units*, Texas Department of Criminal Justice, with W. Stevens of Environeering Inc., \$168,000.
- 1997-2001 *Proposal to Provide Engineering and Technical Services for the Evaluation of an Inactive Landfill at the Ellis I Unit*, Texas Department of Criminal Justice, with D. Chianis of Environeering Inc., \$114,000.
- 1996-1998 *Proposal to Provide Engineering and Technical Services for the Performance of an Air Emissions Audit and Preparation of a Federal Operating Permit Application for the U.S. Army Red River Depot in Hooks, Texas*, with D. Chianis of Environeering Inc., through the Department of the Army, \$98,500.
- 1995-1996 *Expert System for Air Permitting Methodologies*, Texas Regional Institute for Environmental Studies and U.S. Army, Industrial Operations Command, \$122,000.
- 1993-1998 *Program for the Development and Demonstration of the Nitrogen Removal (NitRem) Process on Department of Defense Wastes* with R. White, National Defense Center for Environmental Excellence and Research, Development and Engineering, U.S. Army Material Command, \$3,000,000.
- 1990-1991 *FTIR Spectroscopy of Atmospheric Pollutants*, Ling-Temco-Vought (LTV) Missiles and Electronics Group, with B. Covington, \$65,000.
- 1990-1992 *Technical Assistance in the Stabilization and Encapsulation of Hazardous Waste, RES-TX*, from Rollins Environmental Services, \$23,200.
- 1987-1995 *Chemistry Departmental Research Grant*, Robert A. Welch Foundation, \$225,000. (Note: The grant in 1987 was the first for the department, setting the stage for continuous renewals to date by each subsequent chair. The 1987 proposal reestablished contact.)
- 1988-1989 *Secondary Science Curriculum Revision*, Huntsville Independent School District, \$3,000.
- 1988 *JOEL FT-Nuclear Magnetic Resonance Spectrometer*, Dow Chemical Company, estimated value \$85,000, with R. White.
- 1988 Grant for Computer Equipment, Intel Corporation, \$7,500.
- 1987 *Varian Proton NMR Spectrometer*, Texaco Chemical Company, approximately \$30,000, with R. White.
- 1986-1988 *The Dow Chemical Company Foundation Scholarship Grant*, \$30,000.
- 1980-1982 *National Science Foundation-Comprehensive Assistance to Undergraduate Science Education (NSF-CAUSE)*, a Chemistry and Physics Departmental grant, with J. Wilson, \$175,000. (for new laboratory equipment and facilities upgrade)
- 1979-1981 *National Science Foundation-Student Science Training Program (NSF-SSTP), Summer Programs for Junior High School Students*, with R. McNeese, \$55,000 (NSF), \$55,000 (faculty research).
- 1978 American Association for the Advancement of Science-National Science Foundation (AAAS-NSF) Chautauqua Short Course travel grant, estimated value \$500.
- 1976-1980 *Studies of Lanthanide Coordination Chemistry*, Robert A. Welch Foundation, \$52,000. (Note: the individual research grant program was terminated by the foundation in 1980 for faculty at non-PhD schools to be subsequently replaced with the departmental research grant program. See above, 1987.)

Professional Publications

Structural Studies of the PARP-1 BRCT domain. (2011, October). *BMC Struct. Biol.* 11: 37, with M. Cuneo, G. Mueller, E. Derose, S. Gabel and R. London.

PARP BRCT Domain, poly (ADP-ribose) polymerase-1 residues 389-487, solution NMR data deposition, *RCSB Protein Data Bank*, 2LE0 (2011, June), by G. Mueller, P. Loeffler, M. Cuneo, E. Derose, and R. London.

Evaluation of Ammonia Recovery Waste Treatment of Swine Urine. (2004). Proceedings of the 9th International Symposium on Animal, Agricultural and Food Processing Wastes, ISBN 1-892769-32-8, with T.A. van Kempen.

Texas Department of Criminal Justice Ellis Unit, Part A and part B Permit Application for an Industrial and Hazardous Waste Storage/Processing/Disposal Facility. (2001, May), with D. Chianis.

Centrate Ammonia Recovery Project: Analytical Data Summary Report. (2000, March). Foster-Wheeler Environmental Corporation.

Centrate Ammonia Recovery Project: Laboratory Procedures and Data Summary Report. (1999, August). Foster-Wheeler Environmental Corporation.

Closure and Post-Closure Plan, Texas Department of Criminal Justice, Ellis I Landfill. (1998, October). Texas Department of Criminal Justice, with D. Chianis.

Final Reports: Pilot Scale Demonstration of NitRem Hydrothermal Treatment of DoD Propellant, Water-Dry Waste Containing Dinitrotoluene. (1998, October). Concurrent Technologies Corporation, and US Army Armament Research Development and Engineering Center, under DAAA21-93-C0046, with R. White, (Note: two end-of-project technical and cost reports).

Methodology Guidance Document for Preparation of Federal Operating Permits at U.S. Army Installations. (1996, October). U.S. Army, Industrial Operations Command with D. Chianis and D. Belhateche.

Fundamental Concepts in the Teaching of Chemistry, Part 1: The Two Worlds of the Chemist Make Nomenclature Manageable. (1989). *Journal of Chemical Education*, 66, 928.

Laboratory Manual for Chemistry 118, (1984). 1st edition with T. Chasteen, published locally.

Laboratory Manual for Chemistry 119. (1984). 1st edition with T. Zernicek, published locally.

Summer Science Enrichment: A Survey of Science and Society; a Laboratory Manual (1981). Edited with R. McNeese, published locally.

^{59}Co Nuclear Quadrupole Resonance Spectra and Low Temperature ^{13}C Magnetic Resonance of $\text{X}_3\text{SnCo}(\text{CO})_4$ Compounds. (1976). *Amer. Chem. Soc.*, 98, 629 with T.L. Brown.

Contact vs. Pseudocontact Contributions to Lanthanide Induced Shifts in the NMR Spectra of Isoquinoline and of Indo-norbornenol. (1976). *J. Amer. Chem. Soc.*, 98, 4250 with O. A. Gansow, M. R. Willcott, R. E. Lenkinski, R. E. Davis.

Evaluation of Lanthanide Induced Carbon-13 Contact vs. Pseudocontact NMR Shifts. (1973). *J. Chem. Soc.*, 95, 3389 with O. A. Gansow, M. R. Willcott, R. E. Lenkinski, R. E. Davis.

Evidence for Europium Induced Fermi Contact Shifts in Carbon-13 NMR Spectra. (1973). *J. Chem. Soc.*, 95, 3390 with O. A. Gansow, M. R. Willcott, R. E. Lenkinski, R. E. Davis.

Carbon-13 Nuclear Magnetic Resonance of Strained Olefins. (1972). *Tetrahedron Letters*, 4481 with W. Beckenbaugh & S Wilson.

Fluorine-19 NMR Study of the $\text{TiCl}_x\text{F}_{(4-x)}$ system in dimethoxyethane and dichloromethane. (1972). *Inorganic Chemistry*, 11, 2481 with R. Borden and D. Dyer.

Presentations at Professional Meetings and Organizations

Forensic Science and Forensic Chemistry Programs at Sam Houston State University. (2011, August). Division of Chemical Education, Symposium CHED006, 240th American Chemical Society National Meeting, Invited Symposium Presentation, with J. Yu and D. Williams, Boston, MA.

Introduce the Limiting Reagent Problem Early When Teaching Stoichiometry. (2009, August). Symposium on Problem Solving Strategies, ChemEd 2009 Conference, Radford, VA

Sequencing Stoichiometry in First-Semester Freshman Chemistry. (2008, March). 111th Annual Meeting of the Texas Academy of Sciences, Corpus Christi, TX.

Conservation of Matter and Stoichiometry, Introducing the Limiting Reagent Problem First. (2008, May). 64th Southwest Regional American Chemical Society Meeting, Little Rock, AR.

Chemical Reduction of Aluminum with Nitrate. (2007, November). 63th Southwest Regional American Chemical Society Meeting, with D. Blaylock, Lubbock, TX.

Evaluation of the Nickel(II) Cation in the Ammonia Recovery Process, (2007, March). 110th Annual Meeting of the Texas Academy of Sciences, with M. Paladugu, Waco, TX.

Development of the Forensic Science and Forensic Chemistry Programs at Sam Houston State University. (2007, March). Invited Symposium Presentation, Center for Workshops in the Chemical Sciences Symposium, 233th American Chemical Society National Meeting, with R. Norman and M. Phlisker, Chicago IL.

- Looking to the Future: The American Democracy Project at Sam Houston State University.* (2005, July). National Council of Professors of Educational Administration, International Conference, Washington, DC.
- Diversity and Democracy.* (2005, March). Keynote Address, Diversity Leadership Conference-2005, Huntsville, TX.
- Evaluation of Ammonia Recovery Waste Treatment for Swine Urine.* (2003, October). 9th International Symposium on Animal, Agriculture and Food Processing Wastes, Raleigh, NC.
- Evaluation of Ammonia Recovery Waste Treatment for Swine Urine.* (2004, March.) 107th Annual Meeting of the Texas Academy of Sciences, Kerrville, TX,
- Ammonia Extraction from Effluent Wastewaters.* (2001, October). American Chemical Society Southwest Regional Meeting, with M. Richardson, and J. Turney. San Antonio, TX.
- Determination of K_D , A Comparison of Weak Acid and Strong Acid Resins.* (2001, October). American Chemical Society Southwest Regional Meeting with J. Turney, M. Richardson, and S. Spikes, San Antonio, TX.
- ETDCC [Environmental Technology Development and Commercialization Center] and the TRIES [Texas Regional Institute for Environmental Studies] Municipal Assistance Program* (2000, April). Galveston County Department of Health, with R. Holms, Texas City, TX.
- TRIES and ICE [International Consortium for the Environment] Activities Directed Toward Border Issues.* (2000, September). Center for Environmental Resource Management, University of Texas at El Paso, El Paso, TX.
- Proposed Collaborative Waste Water Treatment Demonstrations.* (2000, August). Air Force Institute for Environmental, Safety and Occupational Health Risk Analysis, AFIERA, San Antonio, TX.
- New Texas City Site for the Environmental Technology Development and Commercialization Center (ETDCC).* (2001, April). Board of Directors, College of the Mainland, with G. Plishker, Texas City, TX.
- Remediation of a Site Contaminated with Pentachlorophenol.* (1999, October). Southwest and Rocky Mountain Regional Meeting of the American Chemical Society, with B. Ford. El Paso, TX.
- TRIES-ETDCC Project with Occidental Chemical.* (2000, March). OxyChem (a subsidiary of Occidental Petroleum Corporation) and Enviroengineering Inc, Houston, TX.
- Collaborative Technology Demonstrations.* (2000, May). U.S. Air Force Environmental representatives, Brooks Air Force Base (to become the Air Force Center for Environmental Excellence (AFCEE)), San Antonio, TX.

- TDCJ-Envireoneering Penta Projects: In-Progress Review*(1999). TDCJ-ID and Envireoneering Inc., Houston, TX.
- Developments in NitRem Hydrothermal Processing of Hazardous Wastes.* (1998, November). South East Regional Meeting of the American Chemical Society; Environmental Division Research Triangle Park, NC.
- NitRem Demonstration at RAAP[Radford Army Ammunition Plant]* (1998, June). Final In-Progress Review, Presentation to US Armament Research Development and Engineering Command (ARDEC) and Concurrent Technologies Corporation(CTC/NDCEE/ETF), Johnstown, PA.
- Hydrothermal Processing of Military Wastes.* (1998, May). Global Demilitarization Symposium; Joint Ordinance Group and National Defense Industrial Association with R. Orth, R. White, A. Zacher, A. Schmidt, E. Jones, G. Daverman, J. Fulton, L. Bowman, T. Hart, G. Neuenschwander, and M. Peterson. Coeur d'Alene, ID.
- Pilot Scale Demonstration of NitRem Hydrothermal Treatment of DoD [Department of Defense] Propellant, Water-Dry Waste* (1998, March/April). National Defense Industrial Association, 24th Environmental Symposium and Exhibition, Tampa, FL.
- Demonstration of NitRem Hydrothermal Chemistry on DoD Propellant Waste Containing Dinitrotoluene.* (1998, April). 215th American Chemical Society National Meeting, Dallas, TX.
- A Conceptual Plan for an Environmental Technology Development and Commercialization Center in Texas City.* (1996, March). Invited presentation at Sterling Chemical Corporation, Houston, TX.
- Destruction of Radford Army Ammunition Plant Wastes Using the NitRem Process; Pilot Plant Design Review.* (1996, May). Glitsch Techsystems Inc, Parsippany, N.J., May 1996.
- The Nitrogen Removal (NitRem) Project and DoD Wastes; In Progress Review.* (1996, September). Radford Army Ammunition Plant, Radford, VA.
- The Nitrogen Removal (NitRem) Project and DoD Wastes.* (1994, April). Invited presentation to Major General Thomas L. Prather and the Office of Research, Development and Engineering, U.S. Army Materiel Command, Alexandria, VA.
- Application of Hydrothermal Technology to Navy Shipboard Wastes.* (1994, October). Invited presentation to Naval Surface Warfare Group, David Taylor Research Center, with Alex Fassbender. Annapolis, MD.
- Engineering Design and Fabrication Considerations for the Dual Shell Pressure Balanced Reactor.* (1994, October) Presentation for Quarterly In-Progress Review, National Defense Center for Environmental Excellence) with M. A. Qazi. Johnstown, PA.
- A Conceptual Plan for a Technology Development Center.* (1994, November). Invited presentation to Industrial Associates Meeting of the Gulf Coast Hazardous Substance Research Center, Lamar University, Beaumont, TX.

- Destruction of Radford Army Ammunition Plant Wastes Using the NitRem Process.* (1994, December). Pacific Northwest National Laboratories with R. White. Richland, WA.
- Hydrothermal Destruction of Red Water and Other Munition Wastes.* (1993). Office of Naval Research/SHSU Scientific Symposium, Huntsville, TX.
- Conceptually Unifying an Introductory Course.* (1988). American Chemical Society Southwest Regional Meeting, Corpus Christi, TX.
- The Torturous Trail Toward the Truth: Prescriptions for Classroom Teachers in Science Education.* (1988, April). Invited keynote speaker with C. Manka, Thomas Alva Edison Foundation, 21st Conference for the Advancement of Science Education, Huntsville, TX.
- General Chemistry.* (1988, November). Invited presentation at Two Year Community College Chemistry Consortium (2YC3) Conference, Houston, TX.
- Computer Assisted Laboratory Study of the Silver-Silver Acetate System.* (1983). Texas Academy of Sciences Meeting, Stephen F. Austin State University with M.C. Banta, Nacogdoches, TX.
- Characterization of Lanthanide-Cyclam Complexes* (1983) Texas Academy of Sciences, Stephen F. Austin State Univ., Nacogdoches, TX.
- Graphic Simulations in Advanced Chemistry Laboratories.* (1982). American Chemical Society Southwest Regional Meeting, San Antonio, TX.
- Fire, Smoke and Pretty Colors: A Lecture Demonstration.* (1982, March). Keynote address, Ninth Annual High School Science Symposium, Sam Houston State University, Huntsville, TX.
- Lanthanide Complexes of 1,3,8,11-tetraazacyclotetradecane.* (1982). ACS Southwest Regional Meeting, Inorganic Section, San Antonio, TX.
- Graphic Simulations using Apple II High Resolution Graphics.* (1982). Texas Academy of Sciences Meeting, with M.C. Banta, San Angelo, TX.
- Oscillating Chemical Reactions.* (1982). Texas Academy of Sciences Meeting, San Angelo, TX.
- Information Management with Microcomputers.* (1982). Probation Academy Workshop, Criminal Justice Center, Huntsville, TX.
- Microcomputers in a Laboratory Setting* (1982). Seminar Program, Bowling Green State University, Bowling Green, OH.
- Graphic Simulations on the Tektronic 4052 for Upper Division Laboratories.* (1981). American Association of Physics Teachers Meeting, Ft. Worth, TX.

Science and Society. (1980). Sam Houston State Faculty Forum, Huntsville, TX.

Classroom Demonstrations in Chemistry. (1979). Conference on the Advancement of Science Teaching, Science Teachers Association of Texas, Waco, TX.

A Learning Cycle for Solution Chemistry. (1978). College Science Teaching and the Development of Reasoning, AAAS-NSF Chautauqua Short Course, University of Texas-Austin, TX.

Note: presentation list does not include co-authored presentations in which supervised research students were major contributors and presenters. The presentation list does not include posters.

Instructional Responsibilities

Undergraduate Lecture Courses Taught (Note: new numbers for courses I am currently teaching)

CHM 135	Introductory Inorganic and Environmental Chemistry
CHM 136	Introductory Organic and Biochemistry
CHEM 1311	General Chemistry I
CHEM 1312	General Chemistry II
CHM 241	Quantitative Analysis
CHM 367	Introductory Inorganic Chemistry
CHM 448	Physical Chemistry I
CHEM 4367	Advance Inorganic Chemistry

Undergraduate Laboratory Courses Directed

CHM 118	General Chemistry I Laboratory
CHEM 1112	General Chemistry II Laboratory

Correspondence Courses Created and Managed

CHM 1305	Introductory Inorganic and Environmental Chemistry
CHM 1306	Introductory Organic and Biochemistry
CHM 1311	General Chemistry I
CHM 1312	General Chemistry II

Graduate Courses Taught

CHM 574	Transition Metal Chemistry
CHM 585	Selected Topics: Kinetics and Mechanisms of Inorganic Reactions Organometallic Chemistry of the Transition Metals