

Michael L. Denniston, Ph.D.  
Associate Professor Emeritus, Chemistry  
Georgia Perimeter College

#### TEACHING EXPERIENCE

**Georgia Perimeter College**, Clarkston, GA (6.87 to 7.12) general chemistry (1987 to 7.12), environmental science (1998 to 5.12), chemistry for the health sciences (1987-1998), analytical chemistry (1987-1998).

NSF Instrumentation and Laboratory Improvement Grantee 1989, 1994

Chancellor's Awardee, USG European Council Faculty Enrichment Seminar: (Eger, Hungary) May 2004

**Georgia Tech**: Visiting Professor of Chemistry 1995-6: [general and inorganic chemistry]

**Maple Woods Community College**, North Kansas City, MO  
general and health science chemistry

**University of Kansas**, Lawrence  
general chemistry laboratories

**University of Texas**, Arlington  
general chemistry laboratory and lecture.

**East Mississippi Jr. College**, Scooba, MS  
general and organic chemistry.

**The Ohio State University**, Columbus, OH  
recitation and laboratory for general and health science chemistry.

Current teaching interests are in the areas of course development, use of technology (WebCT, Spartan, MeasureNet, Mathematica, Linux) to teach general chemistry lecture and laboratory.

Recent projects include development of a lab safety program for the City Schools of Decatur and construction of physical science courses for middle school teachers and for students of early childhood development. I review environmental science texts for Wiley, Pearson and WH Freeman publishers and have written recent reviews of research articles in **Georgia Journal of Science** and **Journal of Chemical Education**.

## RESEARCH EXPERIENCE

(17 research publications in refereed journals and monographs).

### **Emory University**, Atlanta, Georgia

NSF Research Opportunity Award Fellow: Biochemistry, summers 1988-9. (Studied aldehyde oxidase, a molybdoenzyme, from rabbit liver for use in ENDOR studies, monoclonal antibody production with D. Edmondson)

### **University of Kansas Medical Center**, Kansas City

Research Associate: Pharmacology, Toxicology & Therapeutics (chromate ion genotoxicity utilizing cultured cells, explored cellular components such as nucleotides and nucleic acids using reverse-phase and anion exchange chromatography. Used radiochemical techniques extensively, especially chromium-51, sulfur-35 and tritium isotopes with E. Uyeki)

Research Associate: Biochemistry (enzyme studies pertaining to an iron-containing acid phosphatase found in yeast; developed methods for determining inorganic nutrient levels with flame and graphite furnace atomic absorption spectroscopy with W. Arnold)

### **University of Kansas**, Lawrence

Research Associate: Pharmaceutical Chemistry (determined micro quantities of anticancer drugs and their metabolites in biological fluids using chromatographic and spectroscopic means; developed an assay in tissue for cisplatin, a platinum-containing drug used for cancer of the reproductive organs with L. Sternson and A. Repta)

Research Associate: **Kansas Geological Survey** (solid state chemistry of transition metal phosphate sulfates; ceramics with D. Grisafe)

### **University of Texas**, Arlington

Postdoctoral fellow: Chemistry (chemistry of boron halides, tellurium perfluoroalkyls and derivatives thereof; supervised undergraduate research with D. Martin)

### **University of Virginia**, Charlottesville

Research assistant: Chemistry (chemistry of five-membered carboranes with R.N. Grimes)

## EDUCATION

M.B.A., **University of Kansas**, Lawrence (business interests include finance, capital budgeting, environmental economics and quantitative methods [1978])

M.Sc, Ph.D. **The Ohio State University**, Columbus (inorganic chemistry, structure and properties of Lewis acid-base adducts of pentaborane(9) and hexaborane(10) with S.G. Shore,[1970])

B.A., Knox College, Galesburg, IL (chemistry, cum laude with college honors [1966])

## PUBLICATIONS

M.L. Denniston, "The Generation of 2D and 3D Electron Density Maps using High Performance Computing Technology. **J. Chem. Educ.** **70** A76 (1993)

M.L. Denniston and E.M Uyeki, "Distribution and HPLC Study of Chromium-51 Binding Sites in Chinese Hamster Ovary Cells", **J. Tox. and Environ. Health.****21** 375 (1987)

W.N. Arnold, B.J. Evans, M.L. Denniston, "The Effects of Metal Depleted Media on the Growth and Morphology of *S. rouxii* and on the Status of Periplasmic Acid Phosphatase", **J. Gen. Microbio.** **129** 2351 (1983)

M.L. Denniston, L. Sternson, A. Repta, "The Analysis of Total Platinum Derived from Cisplatin in Tissue", **Anal. Lett.** **14** 451 (1981)

R.K. Hertz, M.L. Denniston, S.G. Shore, "The Preparation of  $[(CH_3)_3PBH_2]_2$ ", **Inorg. Chem** **17** 2673 (1978)

M.L. Denniston, M.A. Chiusano, E.D. Martin, D.J. Dye, D.R. Martin, "The Interaction of Halogens with Cyanoborohydride ion and its Derivatives", **J. Inorg. Nucl. Chem.** **40** 9 (1978)

M.L. Denniston, D.R. Martin, "Unsymmetrical Methylphenyl Phosphine Oxides", **Inorg. Synth.****17** 183 (1977)

M. Mangion, R.K. Hertz, M.L. Denniston, J.R. Long, W.R. Clayton, S.G. Shore, "Derivatives of the **hypho** Class of Boron Hydrides. I: The Molecular Structure and NMR Spectra of Stereochemically Nonrigid  $B_6H_{10}[P(CH_3)_3]_2$ ", **J. Amer. Chem. Soc.** **98** 430 (1976)

M.L. Denniston, M. Chiusano, D.R. Martin, "Monohalo- and Monopseudohalo Borane Adducts. The Relationship between Boron- Proton Coupling Constant and the Nature of Substituent on Boron", **J. Inorg. Nucl. Chem** **38** 979 (1976)

M.L. Denniston, M. Chiusano, J. Brown, D.R. Martin, "An Investigation of Lewis Base Monoiodoboranes and their Reaction with Group V Donors in Solution", **J. Inorg. Nucl. Chem.** **38** 379 (1976)

M.L. Denniston, D.R. Martin, "The Preparation of Tellurium Perfluoroalkyls by Photolysis of Dimethyltelluride in the Presence of Perfluoroalkyl Iodides", **J. Inorg. Nucl. Chem.** **37** 1871 (1975)

M.L. Denniston, D.R. Martin , "Perfluoroalkyl Substituted Boranes: The Synthesis of  $B(SCF_3)_3$ ", **J. Inorg. Nucl. Chem.** 37 651 (1975)

M.L. Denniston, D.R. Martin, "The Preparation of some new Boron Trihalide Addition Compounds with Trimethylarsine and Trimethylstibine", **J. Inorg. Nucl. Chem.** 36 2175 (1974)

M.L. Denniston, D.R. Martin , "The Preparation and Properties of some Tertiary Phosphine and Phosphine Chalcogenide Adducts of  $BI_3$  and  $BBr_3$ ", **J. Inorg. Nucl. Chem.** 36 1461 (1974)

M.L. Denniston, R.K. Hertz, S.G. Shore , "The Static Structure of the Fluxional Molecule  $B_5H_9[P(CH_3)_3]_2$ , an Isoelectronic Analog of  $B_5H_{11}(2-)$ ", **J. Amer. Chem.Soc.** 96 3013 (1974)

R.N. Grimes, M.L. Denniston, "Structure and Reactions of some Gallium and Indium Substituted Carboranes" **J. Amer. Chem. Soc.** 94 1865 (1972)

G.L. Brubaker, M.L. Denniston, S.G. Shore, "Reaction of Hexaborane(10) with Molecular Lewis Bases, Proton Abstraction and Molecular Addition", **J. Amer. Chem. Soc.** 92 7216 (1970)

## PRESENTATIONS

ML Denniston, GPC T<sub>2</sub> Conference: March 2012: i) **Using Videos in PreLab Instruction**; ii) **Use of a Linux Shell Script to Check Spartan Data Files.**

P. Gore, ML Denniston, Georgia Science Teachers Association meeting, Savannah, February 2009, Establishing Best Practices in Science laboratory Safety: guidelines, Instruction, Implementation – **A Second Look**

P.Gore, M.Okafor, H.Silverstein, D. Daniels, ML Denniston, Georgia Science Teachers Association, Classic Center, Athens, February 13,2007{**Establishing Best Practices in Laboratory Safety**}

ML Denniston, Symposium to honor Dr. Sheldon Shore, The Ohio State University, Columbus,( **The Chemistry of  $B_5H_9[P(CH_3)_3]_2$ ,  $B_6H_{10}[P(CH_3)_3]_2$  and  $B_2H_4[P(CH_3)_3]_2$  : Synthesis, Structure and Significance.**) October 2005

ML Denniston, 4th Annual Symposium: Into the Classroom: Incorporating Faculty Seminars and Teaching Abroad into the Curriculum Clayton College & State University (**Comparative Uses and Abuses of the Environment in the USA and Hungary**) March 18 - 19, 2005

ML Denniston, Environmental Science workshop (sponsored by McGraw-Hill, Sedona, AZ) (**Using Case Studies to Teach Environmental Science**), March 2003

John Stanford, Bill Lahaise, Ulrike Lahaise, Michael L. Denniston, Georgia Academy of Sciences, March 2002 Milledgeville, GA (presentation given by J. Stanford). (**At-Home Activities for On-line Physical Science Classes**)

Margaret H. Venable and Michael L. Denniston, 53<sup>rd</sup> Southeast Regional Meeting of the American Chemical Society, Savannah, GA, September 24, 2001 (**General Chemistry Online with WebCT**)

ML Denniston, Georgia Perimeter College Mathematics Conference, Clarkston, GA, March 26, 1999 (**The Use of *Mathematica* in Teaching Complex Topics in General Chemistry**)

ML Denniston, J Johnston, L. Strange, ACS National Meeting, Orlando FL, August, 1996 (**Use of *Spartan* in Teaching General and Organic Chemistry**) Presented by Ms. Strange.

M L Denniston, Visualization '95, Demonstration of **Use of Electron Density Maps in General Chemistry**, video tape, Atlanta, GA ( November, 1995)

M L Denniston, Supercomputing '91 ( Minneapolis, Mn) poster presentation: **The Generation of Electron Density Maps using High Performance Computing Technology. Scientific Visualization in the General Chemistry Classroom.**)

M L Denniston, Two year College Chemistry Conference, National Meeting, DeKalb College, April 1991, Dunwoody, GA **and** Georgia Academy of Science Meeting, April 1991, Augusta, GA. (**The Generation of Electron Density Maps using High Performance Computing Technology. Scientific Visualization in the General Chemistry Classroom.**)

Roberto Mango-Karim, M L Denniston, E M Uyeki, Student Research Forum, University of Kansas Medical Center, Kansas City, KS March, 1987 (**Effects of Metallothionein Induction on <sup>35</sup>S uptake and Chromium Toxicity in two Chinese Hamster cell variants**) Presented by Mr. Mangoo-Karim.

M L Denniston, Varian Chromatography Symposium, June 10, 1985 (**Use of HPLC with Concurrent UV and Radiochemical Detectors as a Tool in Chromium (VI) Genotoxicity studies**) Invited presentation. University of Kansas Medical Center, Kansas City, Kansas

Miguel Chiusano, E. Dale Martin, D. James Dye, M L Denniston and D R Martin. 32nd Southwest ACS meeting, December 3, 1976, Fort Worth , TX (**The Interaction of Elemental Halogens with Cyanoborohydride Ion**) Presented by Mr. Chiusano.

Miguel Chiusano, E. Dale Martin, D. James Dye, M L Denniston and D R Martin. Abstracts of 9th Annual ACS Meeting-in-Miniature, Denton, TX April 23, 1976 (**The Preparation of Lewis Base-Cyanoborohydride Adducts via Halogenation of Sodium Cyanoborohydride**) Presented by Mr. Chiusano.

Miguel Chiusano, M L Denniston, Janis Brown and D R Martin. Abstracts of 9th Annual ACS Meeting-in-Miniature, Dallas, TX April 25, 1975 (**The Reaction of Lewis Base-Monoiodoboranes with Tertiary Amines and Phosphines**) Presented by Mr. Chiusano.

Margaret Mangion, M L Denniston, J R Long, R K Hertz, W R Clayton and S G Shore. Abstracts 169th Meeting of the ACS, paper #44, Philadelphia, PA, April 1975 (**Bis-Ligand Adducts of  $B_6H_{10}$  and  $B_5H_9$ , Isolectronic Fluxional Analogs of the  $B_nH_{n+8}$  Class of Boron Hydrides**) Presented by Ms. Mangion.

M L Denniston and D R Martin. 30th Southwest ACS meeting, Houston, TX, December 1974, paper #237 (**The Synthesis of Trifluoromethyl-substituted Borates and Thioborates**).

M L Denniston and D R Martin. 29th Southwest ACS meeting, El Paso, TX, December 1973, paper #172 (**The Preparation and Properties of some Tertiary Phosphine and Phosphine Chalcogenide Adducts of  $BI_3$  and  $BBr_3$** ).

M L Denniston and S G Shore, Abstracts 158th Meeting of the ACS, paper #INOR 104, New York, NY, September 1969 (**Synthesis and Characterization of  $B_5H_9[P(CH_3)_3]_2$** ).

#### PROFESSIONAL MEETINGS AND CONFERENCES ATTENDED

1991, 1992 Supercomputing '91 (Albuquerque), Supercomputing'92 (Minneapolis)

1994, 1995 Visualization'94 (Washington, DC), Visualization'95 (Atlanta)

1993 Pittsburgh Conference

1995 AAAS National Meeting

1997 Pittsburgh Conference, COMDEX (both Atlanta)

1997 League for Innovation, Atlanta, October

1998 Health Risks of Cigar Smoking (sponsored by American Cancer Society), June (Washington, DC)

1999 Georgia Perimeter College Mathematics Conference, Clarkston, GA, March

2001 ACS regional meeting : Savannah, GA September

2002 Gordon Conference on Environmental Bioinorganic Chemistry, Andover NH June

2002 Bioinformatics Conference, Georgia State University, September

2004 University System of Georgia, European Council Faculty Enrichment Seminar:(Eger, Hungary) May

2004 Gordon Conference on Environmental Bioinorganic Chemistry, Bates College, June (Maine)

2005 4th Annual Symposium: Into the Classroom: Incorporating Faculty Seminars and Teaching Abroad into the Curriculum March, 2005, Clayton College & State University

2007, 2010 Georgia Science Teachers Association, Classic Center, Athens, February

2008-2012 Sheldon Shore Symposium, The Ohio State University, spring

#### OTHER

1988 Recombinant DNA workshop, University of Alabama, Birmingham

1988 NSF Data Acquisition workshop, Georgia Tech

1990 Advanced training, Cray YMP, UIUC, Urbana, IL

1991 NSF Molecular Orbital workshop, Georgia Tech

1992 NSF Chemometrics workshop, Georgia Tech

1993 Workstation workshop, University of North Carolina, Asheville, NC, June

1996 NSF LIMSPORT workshop, Kutztown University of PA

1998 NSF Chautauqua course on Perl/CGI , Harvard University, May

1998 NSF Faculty Workshop on Environmental Chemistry, Georgia State, March

1998,1999, 2001,2003, Mercer Pharmacy Day, spring 2004,2006-12

1998-2012 Editor, ENV5 1401 coursepack, currently in 2012 on-line edition only (XanEDU Publishing,Inc., ISBN #9780470784181)

1996,1999,2001,2003,2004 NSF - CCLI grant review panel member, Arlington,VA

1999 NSF Chautauqua course on marine biodiversity ,New England Aquarium, Boston, May

2000 NSF Chautauqua course on Ceramics, University of Washington, Seattle, August

2001,2006,2007 UGA Pharmacy Day, September

2001 Editor, Instructor's resource manual, supplement to *Petrucci 8<sup>th</sup> edition General Chemistry* (ISBN#0-13-017678-8)

2002 Workshop for LabWorks data acquisition package,(sponsored by SCI technologies)  
April GPC

2002-2012 Reviewer for Freeman, Pearson, Wiley publishing houses

2007- present Referee, Journal of Chemical education

2002 NSF Chautauqua course on Evolutionary Bioinformatics, Clark Atlanta University ,  
May

2003 NSF Chautauqua course on Bioinformatics, Rensselaer Polytech, Troy, NY July

2003 Environmental Science workshop (sponsored by McGraw-Hill, Sedona, AZ) March

2003 Hybrid Fellow, Center for Teaching and Learning, Georgia Perimeter College

2003 Southeast Regional American Chemical Society meeting, Atlanta, November

2004 Renaissance Rediscovery Weekend, The Ohio State University, Columbus, October

2004 Benjamin publisher's workshop on chemistry, Chicago, IL, November

2005 NSF Chautauqua course: Solar and Wind Energy, Diamond Bar CA, June

2005 Speaker, Symposium to honor Dr. Sheldon Shore, The Ohio State University,  
Columbus, October

#### SERVICE TO INSTITUTION

1987-2012 Chemistry curriculum committee

1997-2012 Environmental Science curriculum committee

1999-2012 Referee, Georgia Journal of Science

2000-2001 Library SACS committee

2000-2001 Chair, Science Executive Committee

2000-2005 Member, grade appeal committee

2003-2012 Sponsor, GPC Pharmacy Day for representatives from South University,  
Mercer and UGA colleges of pharmacy

2010-2012 MESA advisor

2012 Phi Theta Kappa advisor



## SERVICE TO COMMUNITY

1987-present Red Cross blood donor [~9 gallon club]

1998-2012 Sponsor, Environmental Science capstone lectures (December, April each year)

1999 Participant, American Cancer Society Cancer Prevention Study, October

2000-2012 Science Olympiad (scorer and/or event coordinator)

2006 co-Chair, Workshop in June for DeKalb County and City Schools of Decatur teachers incorporating on-line and hands-on instruction in lab safety.

2006-2007 Instructor, Physical science for Middle School Teachers (grant from Whitfield County): summers

2007, 2008 Organizer, DeKalb County Stormwater Management Symposia: