

VITA
Aubrey McIntosh, Ph.D.

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EDUCATION DATA

The University of Texas at Austin, Ph.D., 1999. Analytical Chemistry, "On the Discrimination and Quantitation of Isomeric Mixtures of Compounds by Mass Spectrometry," J.J. Lagowski & Age K. Smilde, co-supervisors

Saint Mary's University of San Antonio, Master's student, 2000-, Computer Science. Have completed 21 hours in Master's degree program, attained Dean's Honor list twice.

Texas Lutheran University, B.A., 1974, Mathematics and Chemistry. Concentration in physics.

EMPLOYMENT DATA

VIMA, Austin, TX, 2008-2010

- Design, coding, and monitoring of software to perform automatic currency trading.
- Board of director member for software startup company founded by former employe from 1995 era.
- Conceive wireless thermometer and emergency communication product.
- Evaluation of Second Life as a platform for distance education delivery, especially mastery of the scripting language.

Self, Austin, TX, 2009-2010

Community Service. Drove a Yellow Cab. With a Ph.D. Got up at 5AM. Interacted with people not unlike parents of Community College Students. Worked with very short timeline concerns. Drove special transit passengers with reliability and dignity.

Xavier University of Louisiana, New Orleans, LA 70125-1098, Sabbatical replacement fall semester 2007
Organic Lab, 5 sections.

(MnSCU) Central Lakes College, Brainerd, MN 56401, Sabbatical replacement 2006-2007

- Chem 1424, 1425, Principles of Chemistry, Lab & Lecture, enrollment of 35.
- Chem 2472, 2473, Organic, Lab & Lecture, enrollment of 5

(MnSCU) Ridgewater College, Willmar MN, Sabbatical replacement 2005.

- Chem 101, General Chemistry, Lab & Lecture, enrollment of 60.
- Chem 261, Organic, Lab & Lecture, enrollment of 7

The University of Minnesota at Twin Cities, Summer 2004.

- Chem 1021, General Chemistry
- General Chemistry Lecture, enrollment of 125.
- Grade authority over labs, supervise 6 Teaching Assistants, work with General Chemistry coordinator.

VIMA, Austin, TX, Summer 2003

- Development Work toward elective third Analytical Chemistry sequence course, Instrument Design
- Design Embedded Systems Course syllabus.
- Specify parts for prototype board.
- Produce prototype board for course.
- Produce selected example software for course.
- Conceive Star Trek Mark I serial cable project, a Star Trek Technical References coffee table book, with working companion product, derived from course syllabus.

The University of Minnesota at Morris, 2002-2003.

- Introduction to Research (ItR) supervision. Synthesis and C-13 NMR of 7-substituted-3-(2'-benzimidazolyl) coumarins.
- General Chemistry lecture, enrollment of 91
- Inorganic Chemistry lecture
- General Chemistry lab, 6 sections, 30 students each (3 fall, 3 spring)
- Continued development of web based peer grading tools in lab spring '03.

Huston-Tillotson College, Austin, 2001-2002

- Courses Taught
- General Chemistry, 1 yr, lab and lecture
- Organic Chemistry, spring semester, lab and lecture
- Instrumental Analysis, lab and lecture
- Software Engineering
- Introduction to Computers (Microsoft applications for the masses)
- Committee Memberships

Intercollegiate Athletics Committee
Faculty Senate Constitution Committee
Student Retention Committee
Tenure Policy Committee

Grants Authored

Response to NSF 01-0137 "Planning grant for the development of enhanced SMET @ HTC," reviewed.
Response to NSF 01-0171 "Joint RUI/MRI Development of networked ERMS capable quantitating mass spectrometer," not submitted

St. Mary's University of San Antonio, 2000-2002

Organic lab, total of 6 sections of 30 in 3 semesters.
Collected body of student lab notebooks on CD. Collected student grades on lab notebooks.

Trinity University of San Antonio, Fall Semester 2000

Introduction to Analytical Methods Lab. This is their 1st semester Gen. Chem offering. 2 sections in 1 semester.

Texas Lutheran University, 1999 - 2000

CH 343L General Chemistry Lab

CH 341L Analytical Chemistry Lab

Introduced post experiment review of pooled student data. Introduced and evaluated instruments for peer grading with factor analysis interpretation.

Nobell Communications, Incorporated, 1999 -- 2000

Director of Network Operations

Work with CEO and other directors in startup environment to solve immediate problems in a technical and financial framework to scale to nationwide scope and deployment. Deploy wireless internet services. Corporation founder was co-worker at Ohio Medical Products, Madison, WI (below). Implications to the ability to maintain collegial relations over long duration.

The University of Texas, 1990--1998.

Teaching Assistant, various undergraduate chemistry courses.

Ch 301 Freshman Chemistry Lecture

Ch 204 Freshman Chemistry Lab. Class contact 2 semesters.

Ch 376 Advanced Analytical Lab.

Ch 455 Analytical Lab. Class Contact 3 semesters. Trained, monitored, and coordinated 15 TAs for 300 student enrollment 2 semesters. Maintained lab instruments.

Supervisor, email response group, UT computation center.

Write job descriptions. Hire, train, and supervise group of 5 who respond to email requests for help in a user community of 50,000. Design and implement software tools. Review problem cases with management chain.

Installed Windows NT Server and Workstation. Administered 500 user accounts. Set security policy, administered groups.

Programmer, Postscript special project, producing custom tests for each student in classes of 300.

Operated departmental high resolution mass spectrometer.

Research Scientist Assistant, repair instruments, order equipment, work as member of team, train new graduate students.

Developed GUI software to visualize Mass Spectrometry data. Designed, developed, and debugged software.

Presented research at national meetings.

Video Associates Labs, Inc., Austin, TX

9/88 - 7/89

Supervised software development group during transition.

Guided software development and internal structure of the IBM-Infowindow emulation project. This is a hardware/software multimedia project.

Identified profitable design boundaries between Hardware and Software.

Instituted software staff training.

Prepared groundwork for formal configuration control procedures.

Specified and implemented toy applications (informal, minimal validation suite) for development support.

Acted as liaison with special customer group.

Coordinated software implementation schedule with customer application needs.

Limited aggressive customer intrusion.

Procured materials and coordinated schedules for demo support in cooperation with sales, engineering, manufacturing, and third parties.

Texas Lutheran College, Seguin, TX

9/84 - 12/84

Taught general physics lab.

VIMA, Seguin, TX

12/83 - 8/88

Worked on the interactive video industry association (IVIA) multimedia standards committee.

Wrote and delivered embedded control system to customer specifications.

Management demonstrator that captured look and feel of project on IBM-PC and simplified target system coding.

ROM based

MC6805 CPU

16 key-pad handler with software debounce

LCD driver

A/D conversion handler
Timer handler
Fully interrupt driven

- VIMA, Inc., Madison, WI 10/81 - 9/84
Organized VIMA as a Wisconsin corporation for the purpose of developing and marketing a software package called The BiblioFiletm -- A professional's literature tool.
Managed The BiblioFile project.
Developed target customer profile.
Developed a product development plan.
Developed a finance plan.
Identified a distribution channel.
Developed a nationwide advertising effort.
Established the company as a value added retailer for Stride Micro Computers.
Developed a system for product fulfillment.
Developed a nationwide sales strategy.
Procured wholesale agreements.
Identified original equipment manufacturers.
Attended factory training in authorized product repair.
- Ohio Medical Products, Madison, WI 2/80 - 11/81
Research Chemist, Advanced Development
Worked as member of a multi-disciplinary team to design and prototype medical instrumentation.
Compiled a state of the art report on resolution design aspects in gas chromatography.
Extended the currently known art to meet development needs.
Originated patentable technology for oxygen quantification. Managed proof of concept group until first demonstration.
Maintained SEM laboratory.
- American Cyanamid, Princeton, NJ 11/77 - 1/80
Chemist, Analytical Research and Development
Developed gas chromatographic method of analysis of N-nitrosylamines in special samples.
Supported EPA process registration. Supported evaluation of OSHA concerns in mature product processes.
Scheduled and monitored compliance of Ph.D. staff on critical low level support activities.
Developed curriculum and trained in-house staff in computer programming.
Designed, implemented, and transferred an internal standards research methodology to other labs.
Determined equipment needs, evaluated vendor products, installed equipment.

WORKS IN PROGRESS

Assessment by Factor Analyzed Peer Grading, McIntosh, A.
Synthesis and characterization of Coumarin laser dyes, McIntosh, A.

PUBLICATIONS AND CONFERENCES

Peer Grading with Factor Analysis Supervision, McIntosh, A.; Private communication with the attendees of the 2002 Gordon Research conference on Innovations in College Chemistry Teaching.

Direct Concentration Calculation of Interfering Isomers in Mass Spectrometry, McIntosh, A.; Private communication with attendees of the 1999 Gordon Research Conference on Statistics in Chemistry and Chemical Engineering. Received the young researcher scholarship.

The Natural Representation of Real Numbers, McIntosh, A.; Brodbelt, J.; **Computers & Mathematics with Applications**, 1993, V25, P3-14.

Axial Introduction of Laser-Desorbed Ions into a Quadrupole Ion Trap Mass-Spectrometer, McIntosh, A.; Donovan, T.; Brodbelt, J.; **Analytical Chemistry**, 1992, V64, P2079-2083.

Laser Desorption and Selective Ion-Molecule Reactions in a Quadrupole Ion Trap Mass Spectrometer, Brodbelt, J.; Liou, C.; McIntosh, A.; The 40th ASMS Conference on Mass Spectrometry and Allied Topics, 1991, Washington, D.C.

A Graphic Interface for a Factor Analysis System with Mass Spectrometry Applications, McIntosh, A.; Brodbelt, J.; The 40th ASMS Conference on Mass Spectrometry and Allied Topics, 1991, Washington, D.C.

Discrimination and Quantitation of Geometric Isomers by Mass Spectrometry; McIntosh, A.; Brodbelt, J.; A Model for Chiral Analysis, The 41st ASMS Conference on Mass Spectrometry, 1993, San Francisco.