

CURRICULUM VITA

Mark C. Morvant, Ph.D.

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EDUCATION:

Ph.D., Organic Chemistry, The University of Oklahoma, **1996**

Dissertation:

Synthesis, Properties, and Applications of Polynitro- and Polyamino[2.2]paracyclophanes

B.S., Chemistry, Tarleton State University, **1990**

Texas Secondary Teaching Certification in Chemistry

TEACHING EXPERIENCE:

University of Oklahoma

Associate Professor of Chemistry, Tenure-Track, 2006-Present

Courses Taught: Organic Chemistry I & II, Organic Chemistry Laboratory

Georgia Southern University

Assistant Professor of Chemistry, Tenure-Track, 2005-2006

Courses Taught: Organic Chemistry I & II with laboratory

Texas A&M University – Corpus Christi

Associate Professor of Chemistry, Tenured, 2003-2005

Assistant Professor of Chemistry, Tenure-Track, 1998-2003

Visiting Assistant Professor of Chemistry, 1997-1998

Courses Taught: General Chemistry I & II, Organic Chemistry I & II, Biochemistry II, Polymer Chemistry, Advanced Organic Chemistry, Advanced Instrumental Analysis, Substances of Life (a non-majors chemistry course)

ADMINISTRATIVE EXPERIENCE:

Chemistry Program Coordinator, Texas A&M University – Corpus Christi, 2001-2005

Managed operations of the Chemistry Program, part of the Department of Physical and Life Sciences. Supervised 6 faculty members, 3 staff members, 5 adjuncts, and an instructor.

Organized program for 112 majors. Served 1196 students with a student credit hour production of 4,624 in the Fall 2004 term. The duties of the coordinator included:

- Managing the Program grant, laboratory fees, and other Program funds
- Supervising program Staff and providing input on performance evaluations
- Providing requests and justifications for Program funds for infrastructure and personnel
- Providing direction to achieve Program, College, and University goals and objectives
- Representing the Program to the Department, College, Administration, and Community
- Providing written reports about the Program to the Chair, Dean, or Provost as requested
- Mentoring tenure-track Faculty and providing written input on annual evaluations
- Completing Program Review and SACS accreditation related documentation
- Developing, assessing, and revising Program curriculum, degree plans, and catalog copy
- Scheduling of classes and assignment of workload for Faculty and Staff
- Overseeing and evaluating the safety and organization of storerooms and laboratories
- Selecting and assigning Teaching Assistants and Adjunct Faculty

RESEARCH EXPERIENCE:

Associate Professor, University of Oklahoma, 2006-Present

- Development and Evaluation of Technological Pedagogy in Large Lecture Courses
- Development and Implementation of Organic Laboratory Curriculum

Assistant Professor, Georgia Southern University, 2005-2006

- Evaluation of electrochemical properties of substituted [2.2]paracyclophanes
- Reductive electropolymerization studies to produce n-dopable conductive polymers

Assistant/Associate Professor, Texas A&M University – Corpus Christi, 1997-2005

- Development of activities to enhance K-12 education and teacher preparation
- Development and Implementation of Undergraduate Chemistry Curriculum

Postdoctoral Research, The University of Florida, Mentor: Dr. John R. Reynolds, 1996-1997

- Fabrication and evaluation of electrochemical and electrochromic devices
- *In Situ* conductivity measurements of thiophene based conductive polymers
- Experience with UV-Vis/Near IR, Cyclic Voltammetry, clean room techniques

Graduate Research Fellow, The University of Oklahoma, Advisor: Dr. D. T. Glatzhofer, 1991-1996

- Synthesis of polynitro- and polyamino[2.2]paracyclophanes
- Evaluation of electronic properties by electrochemical methods
- Electropolymerization of diamino[2.2]paracyclophanes
- Synthesis of catalysts using diamino[2.2]paracyclophanes as a ligand
- Evaluation of the electronic properties of phenyl substituted triaminobenzenes
- Experience with NMR, IR, UV-Vis, GC, GPC, CV, and computer modeling

NSF-REU Fellow, Texas A&M University, Advisor: Dr. D. E. Bergbreiter, 1990

- Synthesis of hetero/homogenous ruthenium catalyst using polyethylene carboxylate
- Evaluation of catalyst for cyclopropanation of olefins
- Experience with NMR, GC, air-sensitive reactions and polymerizations

Robert A. Welch Fellow, Tarleton State University, Advisor: Dr. R. Walter, 1989

- Synthesis of substituted pyrroles and evaluation of isomers
- Experience with NMR, GC-MS, and IR

SCIENCE EDUCATION EXPERIENCE:

Academy Member, Texas A&M University Regent's Initiative, Academy for Educator Development, 2000-2005

- Collaborated with Academy members to develop partnerships with local school districts
- Proposed new models for teacher preparation and recruitment of future K-12 teachers

Participant, Texas Collaborative for Excellence in Teacher Preparation (TxCETP), 1998-2004

- Physical Science Course Component Coordinator and Biology writing team member
- Developed and implemented inquiry and active learning based activities
- Disseminated activities to community college and university faculty and K-12 teachers
- Evaluated TxCETP faculty and activities

Mentor, South Texas Advanced Technology Education (STATE), 2002-2003

- Communicated with South Texas community college faculty to introduce Problem-Based Learning curriculum combining Math, Science, and Workforce courses

Faculty Partner, Texas Rural Systemic Initiative, Graduate K-12 Fellows Program, 2000-2003

- Advised PK-12 Fellows working with science teachers in rural school districts
- Aided the implementation of active learning methods and the use of GPS-based activities

**Participant, Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP),
MainSTey Program, 1998-2000**

- Developed activities using graphing calculators and data collection devices to be used in math and science classes
- Editing of activities for inclusion into workbook

CURRICULUM DEVELOPMENT:

Organic Chemistry Laboratory

Designed and developed a significant revision in the Organic Laboratory Course. The revision emphasized the data gathering and problem solving by focusing on keeping a detailed laboratory notebook and introducing qualitative and instrumental experiments. **2008**

Biology & Chemistry I & II Learning Communities

Proposed, designed, and implemented a First-Year Learning Community combining General Chemistry, Freshman Biology, English Composition and First-Year Seminar in cooperation of a Biology and English Faculty member. The learning communities used a mixture of shared assignments, cross curriculum projects, shared reading assignments, and instructor collaboration to convey the integrated nature of the subjects to a first-year audience. **2001**

Advanced Organic Chemistry

Designed and developed the special topics course including the outline and objectives, selection of course materials, and developed the course assignments and projects. The course included a weekly “defense” assignment modeled on the defense of a proposed solution as presented at graduate seminars. **2001**

Inquiry-Based General Chemistry Laboratory

Co-developed a directed inquiry based General Chemistry Laboratory sequence. The initial trials indicated significant improvements in content knowledge, laboratory technique, and writing skills. **2000**

General Chemistry I & II

Designed, developed, and implemented an innovative General Chemistry curriculum for science majors. The new curriculum was based on a Concept and Calculations model with General Chemistry I containing the theoretical and conceptual aspects of General Chemistry and General Chemistry II containing the mathematical and calculations dependent aspects of General Chemistry. The new curriculum has been very successful with low DFW rates and excellent success in later chemistry courses and is being used in all General Chemistry sections. **1999**

Polymer Chemistry

Designed and developed the course including the outline and objectives, selection of course materials, and developed the course assignments and projects. **1999**

Substances of Life

Designed and developed the special topics course including the outline and objectives, selection of course materials, and developed the course assignments and exams. The course was to be the model for a non-science majors course which taught chemistry concepts by utilizing real life applications (i.e. cars, cleaning products, cooking). The course incorporated active learning and directed inquiry activities. **1999**

CONSULTING:

Reviewing: Russo and Silver, *Introductory Chemistry, 2nd ed.*, Benjamin-Cummings, **2005**.

Editing: Smith, *Organic Chemistry, 1st edition*, McGraw-Hill Higher Education, **2004**

Editorial Consultant: *MainSTey Activity Workbook: A Calculator Based Approach to Discovery Learning*, LS-LAMP, **2003**

Editing: Malone, *Basic Concepts of Chemistry, 7th edition*, John Wiley & Sons, Inc., **2002**

PUBLICATIONS:

Books and Chapters

Morvant, M. C.; Halterman, R. L. *Organic Chemistry Laboratory Manual, The University of Oklahoma*, Hayden-McNeil, Plymouth, MI, **2008**.

Morvant, M.; Tintera, G.; Giraldo, J., "Would you like a little tea with your lemon?" *MainSTey Activity Workbook: A Calculator Based Approach to Discovery Learning*, LS-LAMP **2003**, 51.

Tintera, G.; Morvant, M.; Giraldo, J., "The Heat is On?" *MainSTey Activity Workbook: A Calculator Based Approach to Discovery Learning*, LS-LAMP, **2003**, 55.

Morvant, M.; Tintera, G.; Giraldo, J., "Lost Keys in a Cup of Tea." *MainSTey Activity Workbook: A Calculator Based Approach to Discovery Learning*, LS-LAMP, **2003**, 91.

Teasdale, M. E.; Morvant, M. C. *General Chemistry Lab Manual*, RonJon Publishing, Inc., Denton, TX, **2000**.

Milroy, S.; Morvant, M. C. *Biochemistry I and II; Texas A&M University-Corpus Christi*, RonJon Publishing, Inc., Denton, TX, **1999**.

Halterman, R. L.; Morvant, M. C. *Organic Chemistry Laboratory Manual, The University of Oklahoma*, RonJon Publishing, Inc., Denton, TX, **1995**.

Journal Articles

Welsh, D. M.; Kumar, A.; Morvant, M. C.; Reynolds, J. R., "Fast electrochromic polymers based on new poly(3,4-alkylenedioxythiophene) derivatives." *Synth. Met.* **1999**, 102, 967.

Irvin, J. A.; Piroux, F.; Morvant, M. C.; Robertshaw, V. L.; Angerhofer, A.; Reynolds, J. R., "Low oxidation potential conducting polymers based on 1,4-bis[2-(3,4-ethylenedioxy)thienyl]-2,5-dialkoxybenzenes." *Synth. Met.* **1999**, 102, 965.

Kumar, A.; Welsh, D. M.; Morvant, M. C.; Piroux, F.; Abboud, K. A.; Reynolds, J. R., "Conducting Poly(3,4-alkylenedioxythiophene) Derivatives as Fast Electrochromics with High-Contrast Ratios." *Chem. Mater.* **1998**, 10, 896.

Morvant, M. C.; Reynolds, J. R., "In Situ Conductivity of Poly(3,4-ethylenedioxythiophene)," *Synthetic Metals* **1998**, 92, 57.

Glatzhofer, D. T.; Morvant, M. C., "Substituent Effects on the Electrochemical Oxidation of N,N',N''-Triphenyl-1,3,5-triaminobenzenes," *Journal of Physical Organic Chemistry* **1998**, 11, 731.

Irvin, J. A.; Piroux, F.; Morvant, M. C.; Robertshaw, V. L.; Angerhofer, A.; Reynolds, J. R., "Low Oxidation Potential Conducting Polymers Based on 1,4-Bis[2-(3,4-ethylenedioxy)thienyl]-2,5-dialkoxybenzenes," *ICSM Proceedings* **1998**.

Kumar, A.; Morvant, M. C.; Reynolds, J. R., "Phenyl Substituted Poly(3,4-Ethylenedioxythiophene)," *Polym. Prep.* **1997**, 38(1), 155.

Morvant, M. C., "Synthesis, Properties, and Applications of Polynitro- and Polyamino[2.2]paracyclophanes," Ph.D. Dissertation, The University of Oklahoma, **1996**.

Bergbreiter, D. E.; Morvant, M.; Chen, B., "Catalytic Cyclopropanation With Transition Metal Salts Of Soluble Polyethylene Carboxylates", *Tetrahedron Letters* **1991**, 32, 2731.

PRESENTATIONS:

Morvant, M., "Enhanced Organic Podcasts: Production and Student Utilization", 20th Biennial Conference on Chemical Education, Bloomington, IN, July 27-31, **2008**.

Morvant, M.; Czapla, M., "Organic Chemistry Wiki: Developing Resources for Multi-tasking Learners", 20th Biennial Conference on Chemical Education, Bloomington, IN, July 27-31, **2008**.

Morvant, M. C., "Lecture Podcasts: Student Utilization and Comments", 53rd ACS Pentasectional Meeting, Durant, OK, March 8, **2008**.

Morvant, M. C., "Using Lego®s as an active learning exercise in general chemistry lecture: Periodicity and electronic configuration", 231st ACS National Meeting, Atlanta, GA, March 26-30, **2006**.

Maurstad, C.; Morvant, M., "Linking the Unlinkable: Active Learning and Collaboration in a Science, English and Seminar Learning Community", 9th Annual Conference Learning Communities and Collaboration, Kansas City, MO, November 11-13, **2004**.

Morvant, M. C., "New Developments in Chemical Education", South Texas Section of the ACS Local Meeting, Corpus Christi, TX, September 13, **2002**.

Morvant, M. C., "Science Inquiry Experience", TxCETP Spring Forum, Austin, TX, May 13-15, **2002**.

Morvant, M. C., "Using Guided Inquiry in Large Lecture Courses: An Example From General Chemistry", 2nd Annual Lilly Conference on College & University Teaching - Texas, San Marcos, TX, August 3-4, **2001**.

Morvant, M., Guest Speaker, 2001 AP Summer Institute: AP Chemistry, Corpus Christi TX, July, **2001**.

Morvant, M. C., "Development of Hands-on and Demonstration Chemistry Activities to support Novice Teachers", Second Annual Chancellor's Invitational Conference, Houston, TX, June 15, **2001**.

Morvant, M. C., "Guided Inquiry Improves Student Success in Large "Lecture" Sections of General Chemistry (TxCETP)", NSF sponsored CETP PI Meeting: Next Steps, Arlington, VA, April 3, **2001**.

Jones, K.; Morvant, M.; Rupert, A.; Ward, M., "Promoting Family Involvement Through Student Work", Texas A&M University Partnership Conference, Corpus Christi, TX, March, **2001**.

Morvant, M. C., "Periodic Trends", TxCETP National Visiting Committee Meeting, Corpus Christi, TX, October 13, **2000**.

Littleton, P.; Morvant, M. C., "Inquiry in the Secondary Mathematics and Science Classroom", Texas Rural Systemic Initiative (TRSI): Systemic Leadership Institute, Austin, TX, June 21, **2000**.

Morvant, M. C.; Glatzhofer, D. T., "Electrochemical Polymerization and Characterization of [2.2]Paracyclophane Analogs of Aniline", 47th Southeast/51st Southwest ACS Joint Regional Meeting, Memphis, TN, **1995**.

Morvant, M. C.; Glatzhofer, D. T., "Dimerization of Nitro-Substituted Paraquinodimethanes: Synthesis of Tetra- and Dinitro[2.2]paracyclophanes", 48th ACS Southwest Regional Meeting, Lubbock, TX, **1992**.

FUNDED GRANTS:

College of Arts & Sciences Information Technology Grant, \$6,154 for pod/vodcasting recording and production equipment to expand the online pod/vodcast offerings in the Chemistry & Biochemistry Department, **2008**

College of Arts & Sciences Information Technology Grant, \$1,900 for interactive pen display for utilization in large lecture courses in Chemistry & Biochemistry Department, **2008**

Morvant, M.C., "Synthesis and Electrochemical Analysis of N,N,N,N-tetramethyl-4,12-diamino [2.2]paracyclophane", Georgia Southern University, Faculty Research Committee Grant, \$8,639, **2006** (Granted, but not accepted due to resignation from University)

The Robert A. Welch Foundation Departmental Research Grant, \$75,000 for three years, grant targeted towards undergraduate research stipends and research supplies, **2000-2003**

Morvant, M. C., "Development of hands-on & Demonstration Chemistry Activities for K-16/ Founding Corpus Christi Chemistry Educators for Support of Novice Teachers", Texas A&M University System Regents' Initiative Academy Fellowship Grant, \$3,000, **2001**

Giraldo, J.; Jones, K.; Cabrera, S.; Auger, C.; Morvant, M. C., "A Project to Increase the Parent Involvement in the Educational Process of Low Income High School Students", Texas A&M University System Regents' Initiative Academy Research Grant, \$10,000, **2001**

PROFESSIONAL AND INSTITUTIONAL SERVICE:

Professional Service

Member, Chemistry Test Item Review, Texas SBEC, Austin, TX, **2004**

Member, Chemistry Framework Review, Texas SBEC, Austin, TX, **2004**

Vice-Chair, South Texas Section, American Chemical Society, **2003**

Member, Physical Science 8-12 Standard Setting, Texas SBEC, Austin, TX, **2002**

Chair, South Texas Section, American Chemical Society, **2001**

Member, Physical Science 8-12 Framework Review, Texas SBEC, San Antonio, TX, **2001**

Chair-elect, South Texas Section, American Chemical Society, **2000**
National Chemistry Week Chairman, South Texas Section, ACS, **1999**

University Service

Chair, Faculty Senate – Academic Affairs Committee, TAMUCC, **2004-2005**
Member, Task Force on Strategic Plan for University Parking, TAMUCC, **2004-2005**
Member, Dean of College Science & Technology Search Committee, TAMUCC, **2004-2005**
Chair, Environmental, Health, and Safety Committee, TAMUCC, **2003-2005**
Member, Enrollment Management Council, TAMUCC, **2003-2005**
Member, Faculty Senate, TAMUCC, **2002-2005**
Chair, Faculty Senate – Committee on Committees, TAMU-CC, **2003-2004**
Member, NCAA Athletics Cert. Sub-committee on Fiscal Integrity, TAMU-CC, **2003-2004**
Chair, Faculty Core Curriculum Committee (FC³), TAMU-CC, **2002-2003**
Member, Faculty Senate - Budget Analysis Committee, TAMU-CC, **2002-2003**
Member, Special University Committee on Budget, TAMU-CC, **2003**
Chair, University Scholarship Committee, TAMU-CC, **2002**
Member, Faculty Core Curriculum Committee (FC³), TAMU-CC, **2001-2002**
Member, University Scholarship Committee, TAMU-CC, **2001**
Member, Faculty Senate Ad-Hoc Committee: Classroom Scheduling, TAMU-CC, **1999**

College Service

Member, PALS/CAMS Scholarship Committee, TAMU-CC, **2000-2005**
Chair, College Research Enhancement Committee, TAMU-CC, **2001-2002**
Member, College Workload Release Committee, TAMU-CC, **2001-2002**
Member, College Research Enhancement Committee, TAMU-CC, **2000**
Member, College Workload Release Committee, TAMU-CC, **2000**

Departmental Service

Undergraduate Assessment Liaison, Annual Outcomes Assessment Report, OU, **2007-Present**
Member, Ad-hoc Committee to Revise TEACH Test Topics, **2007-2008**
Member, Ad-hoc Committee of Teaching Formula, OU, **2007**
Member, Undergraduate Committee, OU, **2006-Present**
Secretary, Faculty Meeting, OU, **2006-2007**
Member, Teaching Assistant Selection Committee, TAMU-CC, **2002-2005**
Chair, Chemistry Faculty Search Committee, TAMU-CC, **2003**
Member, Physical & Life Sciences Department Workload Committee, TAMU-CC, **2002**
Member, Physical & Life Sciences Physical Science Ed. Committee, TAMU-CC, **2002**
Chair, Chemistry Program Review Committee, TAMU-CC, **2001**
Member, Chemistry Faculty Search Committee, TAMU-CC, **2001**
Chair, Teaching Assistant Selection Committee, TAMU-CC, **1999-2001**
Chair, Biochemistry Faculty Search Committee, TAMU-CC, **2000**
Chair, Biochemistry Faculty Search Committee, TAMU-CC, **2000**
Chair, Environ./Anal. Chemistry Faculty Search Committee, TAMU-CC, **1999**
Member, Environmental Science Graduate Acceptance Committee, TAMU-CC, **1999**

SELECTED SCHOLARSHIPS AND AWARDS:

Best Lecturer, AED Texas Xi, Pre-professional Honor Society, **2004**
Department of Education Fellowship, The University of Oklahoma, **1991-1995**
Phi Lambda Upsilon, Chemistry Honor Society, The University of Oklahoma, **1992**
Dick Smith Scholarship, Tarleton State University, **1988-1990**
Eagle Scout, **1986**

PROFESSIONAL DEVELOPMENT:

Conferences Attended

20th Biennial Conference on Chemical Education, American Chemical Society Division of Chemical Education, University of Indiana, Bloomington, IN, July 27-31, **2008**

2008 Teaching Scholars Initiative Colloquium, University of Oklahoma, April 7, **2008**

19th Biennial Conference on Chemical Education, American Chemical Society Division of Chemical Education, Purdue University, West Lafayette, IN, July 30 - August 3, **2006**

231st American Chemical Society National Meeting, Atlanta, GA, March 26-30, **2006**

60th Southwest Regional Meeting, American Chemical Society, Fort Worth, TX, September 29 - October 2, **2004**

The Robert A. Welch Foundation 45th Conference on Chemical Research: *Chemistry for the 21st Century*, Houston TX, October 29-30, **2001**

2nd Annual Lilly Conference on College & University Teaching - Texas, San Marcos, TX, August 3-4, **2001**

Second Annual Chancellor's Invitational Conference, Texas A&M University System, Houston, TX, June 14-16, **2001**

CETP PI Meeting: *Next Steps*, National Science Foundation, Arlington, VA, April 1-4, **2001**

The Robert A. Welch Foundation 44th Conference of Chemical Research: *Macromolecular Structure and Function*, Houston, TX, October 23-24, **2000**

Fourth Annual Conference on School-University Partnerships, co-sponsored by Texas A&M University System and Texas Education Agency, Austin, TX, October 8-10, **2000**

First Annual Chancellor's Invitational Conference, Texas A&M University System, Houston, TX, June 8-10, **2000**.

Fourth Annual Research Conference, "Sustaining SMET Opportunities in the New Millennium", co-sponsored by DoE EPSCor HRD and LS-LAMP, Baton Rouge, LA, March 27-28, **2000**.

Workshops Attended

Advanced POGIL Workshops: Use of clickers and other technologies to manage a POGIL classroom, 20th Biennial Conference on Chemical Education, Indiana University, **2008**

Implementing POGIL in Large Classes, 20th Biennial Conference on Chemical Education, Indiana University, **2008**

Service Learning Workshop, Oklahoma Campus Compact, Southern Oklahoma State University, **2006**

Service Learning/Civic Engagement Workshop, "Service Learning: From Theory to Practice"; Texas Campus Compact, Corpus Christi, TX, **2003**

Summer Institute Improving Technician Education, "Let the Problem Drive the Learning"; South Texas Advanced Technology Education (STATE), Corpus Christi, TX, **2002**

Inquiry Institute for University Faculty, Texas Collaborative for Excellence in Teacher Preparation (TxCETP), **1999**

MainSTey Spring Workshop; sponsored by Louisiana Alliance for Minority Participation (LAMP); Baton Rouge, LA, May 19-22, **1999**

MainSTey Summer Institute, a year long project to design and implement technology (graphing calculators) in mathematics and science courses; sponsored by Louisiana Alliance for Minority Participation (LAMP), Baton Rouge, LA, July 25-August 2, **1998**