

## **Kathleen M. Hess, Ph.D.**

### **Education**

The University of Chicago, Chicago, Illinois  
Ph. D. in Chemistry, March 1991

The University of Chicago, Chicago, Illinois  
M. S. in Chemistry, March 1989

DePaul University, Chicago, Illinois  
B. S., June 1985  
Major: Chemistry (ACS accredited)  
Minor: Mathematics

### **Teaching Experience**

**Lecturer in Chemistry, Brown University**, Providence, Rhode Island;  
August 2006 to present  
Chemistry 33 Laboratory Co-coordinator and Instructor, Fall 2006  
Chemistry 35 Laboratory Instructor, Spring 2007

**Special Lecturer in Chemistry, Providence College**, Providence, Rhode Island;  
Organic Laboratory instructor for 1<sup>st</sup> and 2<sup>nd</sup> semester organic chemistry. *Assisted in improving existing experiments and laboratory quizzes for the organic chemistry laboratory.* Fall 2005-present  
Lecture instructor for Contemporary Chemistry and 2<sup>nd</sup> Semester General Chemistry.  
Spring 2006

**Assistant Professor of Chemistry, Cypress College**, North Orange County  
Community College District, Anaheim, California; January 1997-June 2005

#### ***Related Educational Skills:***

*Curriculum:* Revised and validated courses on a regular basis. Developed curriculum for liberal arts chemistry course with a laboratory and jointly developed curriculum with the Physics department for a laboratory based teacher preparation course.

*Safety:* Updated safety standards on a regular basis in the Department.

*Lab Exams:* Developed hands-on laboratory exams for 1<sup>st</sup> semester general chemistry and introductory chemistry. Written exams and notebook quizzes developed for organic chemistry.

*Lead Instructor:* Coordinated laboratory schedules with adjunct faculty members and the stockroom staff.

*Calculator Based Data Collection system:* Conducted several experiments using the Vernier system.

*Textbook Reviewer:* Summer 2004: Reviewed Chapter 7 of the sixth edition of Organic Chemistry by Wade (Prentice Hall.)

*Laboratory Manual Reviewer:* Summer 2004: Completely reviewed the Introductory Chemistry Laboratory Manual by Corwin (Prentice Hall).

### ***Courses Taught:***

**Organic Chemistry, 1<sup>st</sup> and 2<sup>nd</sup> semester, Lecture and Laboratory,** Fall 2000-Spring 2005

**Allied Health Chemistry, Lecture and Laboratory,** Fall 2004-Spring 2005

**Introductory Chemistry, Lecture and Laboratory,** Fall 2003-Spring 2004

**Liberal Arts Chemistry, Lecture,** Fall 2000-Spring 2003

**General Chemistry, 1<sup>st</sup> and 2<sup>nd</sup> semester, Lecture and Laboratory,** Spring 1997-Spring 2000

**Adjunct Professor of Chemistry, Cypress College, North Orange County Community College District, Anaheim, California, 2<sup>nd</sup> semester of General Chemistry, Lecture and Laboratory,** Fall 1995-Fall 1996

**Adjunct Professor of Chemistry, Irvine Valley College, South Orange County Community College District, Irvine, California, 1<sup>st</sup> semester of General Chemistry, Lecture and Laboratory,** Fall 1995-Fall 1996

**Graduate Teaching Assistant, The University of Chicago, Department of Chemistry, General and Organic Chemistry Laboratories,** September 1985-June 1986

**Undergraduate Teaching Assistant, DePaul University, Department of Chemistry, General and Organic Chemistry Laboratories,** January 1984-June 1985

### **Management Experience**

**Chemistry Department Coordinator, Cypress College, Fall 2002-Spring 2005,** Faculty class assignments (full-time and adjunct), manage chemistry stockroom and personal, represent the department at Division meetings and worked extensively with Dean on college related projects.

**Radiation Safety Officer, McGaw Inc., Biological Test Center, April 1994-June 1994**

### **Research Experience**

**Postdoctoral Fellow, University of California, Irvine, Department of Pathology, March 1995-August 1995.** Studied biochemical effects on rats in a hyperoxygenated environment.

**Senior Chemist, McGaw, Inc., Biological Test Center, July 1993-June 1994,** HPLC and extraction method development for pesticide (C-14 labeled) metabolism studies

and stability/residue analysis of various organic compounds. Conducted research by Good Laboratory Practices.

**National Institutes of Health Postdoctoral Fellow**, University of California, Irvine, Department of Chemistry, March 1991-July 1993. Investigated the chemical mechanisms of degradation of biological molecules by oxygen radicals such as hydroxyl, perhydroxyl, and peroxy.

**Research Assistant**, The University of Chicago, Department of Chemistry. Thesis Advisor: Professor David G. Lynn, March 1986-March 1991, Dissertation: Initiation of signal transduction pathways by phenolics in plants and bacteria.

**Technician**, G. D. Searle & Co., Skokie, Illinois, Chemical Development Department, Summer 1985. Worked on large scale preparations of compounds needed for further biological testing.

**Undergraduate Research Assistant**, DePaul University, Department of Chemistry, September 1983-June 1985. Researched and carried out the six step synthesis of 2,3-diol-bicyclo[2.2.1]heptan-7-one.

## **Professional Development**

Cypress College New Faculty Seminar Series, Mentor, Fall 2004 and Spring 2005

Cypress College On-line Training Course, Summer 2004  
Currently developing an on-line liberal arts course.

166<sup>th</sup> Two Year College Chemistry Consortium Conference, Spring 2004  
Concordia University, Irvine, California

North Orange County Community College District Chemical Hygiene Training,  
Summer 2004

Cypress College Curriculum Workshop Spring 2004

North Orange County Community College District Equal Employment Opportunity  
Training, Fall 2004

Department Chair Institute Seminar Series, Summer 2002  
Cypress College, Cypress, California

Web-Based Chemistry Tools Workshop, Fall 2001  
California State University Fullerton, Fullerton, California

A Workshop to Support Inquiry Based Learning in Physical Science, Fall 1999

California State Fullerton, Fullerton, California

Workshop on Basic Microscale Techniques for Organic Chemistry, Summer 1998  
Santa Rosa Junior College, Santa Rosa, California

Small-scale Chemistry Workshop, June 1998  
Fullerton College, Fullerton, California

Cypress College New Faculty Seminar Series, Fall 1997 and Spring 1998

Computers in the Laboratory Summer Workshop, Summer 1997  
Montana State University, Bozeman, Montana

Good Laboratory Practices for Study Directors, International Center for Health and  
Environmental Education, Summer 1993  
San Diego, California

Basic Radiation Safety and Management Seminar, Stan A. Huber consultants, Inc.,  
Spring 1994, Irvine, California

### **Professional Activities**

Orange County Section of the American Chemical Society Education Committee,  
College Coordinator, 1999-2005

Alternate Councilor for the Orange County Section of the American Chemical Society,  
2000-2005

Cypress College Chemistry Department Faculty Hiring Committee Chair, Spring 2004

Cypress College Science, Engineering, and Math Division, Division Manager Hiring  
Committee, Fall 2003

Science, Engineering, and Math Representative for KinderCaminita at Cypress College,  
2001-2004

Cypress College National Chemistry Week Coordinator, 2000-2004

Cypress College Instructional Quality Assessment Committee, 1998-2002

Cypress College Chemistry Department Faculty Hiring Committee, Spring 1998

Cypress College Chemistry Department Stockroom Manager Hiring Committee, Fall  
1997

Kids & Chemistry National Chemistry Week Event Chairperson, 1994-1999.

Kids & Chemistry Program, ACS Outreach Program, 1994.

UCI Chemistry Outreach Program 1992-1993

## **Publications**

Mechanistic studies of DNA oxidation and nicking by perhydroxyl, peroxy, and hydroxyl radicals. (1993) T. A. Dix, K. M. Hess, M. A. Medina, S. L. Tilly, and R. W. Sullivan. in *Biological Oxidants and Antioxidants: New Developments in Research and Health Effects*, P. Hochstein and E. Cadenas, eds., Hippokrates Verlag.

Evaluation of N-Hydroxy-2-thiopyridone as a nonmetal dependent source of the hydroxyl radical in aqueous systems. (1992) K. M. Hess, and T. A. Dix, *Anal. Biochem.*, 206, 309-314.

Mechanism of activation of Agrobacterium virulence genes: Identification of phenol-binding proteins. (1992) K. Lee, M. W. Dudley, K. M. Hess, D. G. Lynn, R. D. Joerger, and A. N. Binns, *Proc. Nat. Acad. Sci., USA* , **89**, 8666-8670.

The initiation of lipid peroxidation. (1992) T. A. Dix, J. Aikens, and K. M. Hess, in *Biological Free Radical Oxidations and Antioxidants*, pp 2-7, Cleup Press, Padova.

Mechanism of phenolic activation of Agrobacterium virulence genes: development of a specific inhibitor of bacterial sensor/response systems. (1991) K. M. Hess, M. W. Dudley, D. G. Lynn, R. D. Joerger, and A. N. Binns, *Proc. Nat. Acad. Sci., USA*, **88**, 7854-7858.

Monitoring alterations in the cellular lipid pool by Fast Atom Bombardment Mass Spectrometry: Implications for Byssinosis. (1988) K. M. Hess, S. R. Kalberg, T. M. Logan, D. G. Lynn, W. S. Lynn, J. Reddish, and J. Barclay, Proceedings of the 12<sup>th</sup> Cotton Dust Research Conference, p. 130-134.

Identification and quantitation of alterations in the cellular lipid pool by Fast Atom Bombardment Mass Spectrometry: Implications for Byssinosis. (1987) T. M. Logan, K. M. Hess, W. S. Lynn, J. Barclay, and D. G. Lynn, Proceedings of the 11<sup>th</sup> Cotton Dust Research Conference, p. 66-70.

## **Presentations**

Evaluation and application of N-Hydroxy-2-thiopyridone as a non-metal dependent source of the hydroxyl radical. K. M. Hess, and T. A. Dix, 204<sup>th</sup> National Meeting of the American Chemical Society, San Francisco, CA, April 1992.

Non-metal dependent DNA cleavage by superoxide/hydrodioxyl radical generating system. K. M. Hess, M. Medina, J. Aikens, and T.A. Dix, 204<sup>th</sup> National Meeting of the American Chemical Society, San Francisco, CA, April 1992.

Mechanism of phenolic activation of vir expression in *A. tumefaciens*: Development of specific inhibitors. K. M. Hess, M. W. Dudley, D. G. Lynn, R. D. Joerger, and A. N. Binns, *J. Cell. Biochem.*, Supplement 15A, 20<sup>th</sup> Annual Keystone Symposia, January 1991.