

CURRICULUM VITAE

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Education

Ph.D.	1988	University of Wisconsin-Madison	Chemistry (emphasis on theoretical, physical, and inorganic chemistry)
B.S.	1982	Harvey Mudd College	Chemistry (emphasis on physical chemistry)

University Appointments

2010 – present	Associate Dean for Curriculum and Student Development, College of Arts and Sciences, Creighton University
2002 – 2010	Chair, Department of Chemistry, Creighton University
1995 - present	Associate Professor of Chemistry, Creighton University
1993 - 1998	Faculty member, Nebraska Metallobiochemistry Group (under a cooperative agreement with the University of Nebraska, Lincoln)
1990-1995	Clare Boothe Luce Professor of Science, Assistant Professor of Chemistry, Creighton University
1988-1990	Visiting Assistant Professor, Grinnell College
1988	Lecturer, Department of Chemistry, University of Wisconsin-Madison
1988	Staff Scientist, Department of Chemistry, University of Wisconsin-Madison

Academic Leadership Experience

Associate Dean for Curriculum and Student Development (August 2010 – present)

- Develop and oversee College-wide competitive undergraduate research scholarship program.
- Oversee processes for all curriculum changes within the College.
- Collaborate with Registrar and Department Chairs to insure the appropriate scheduling of courses for each semester.
- Collaborate with Admissions to enhance recruitment of new students (first-year, transfer, and international) to the College.
- Collaborate with our first- and second-year advising program, the Ratio Studiorum Program, to recruit and train faculty advisors for incoming freshmen.
- Oversee all activities related to academic policy issues, including student withdrawal and leave of absence requests, academic probation and dismissal, and academic honesty cases.
- Collaborate with Deans' offices from the other undergraduate colleges within the University to create and administer consistent policies for all undergraduate students.
- Serve as the Dean's office representative to several Faculty Senate committees.
- Prepare enrollment, staffing, and teaching load reports and collect data and prepare other institutional research-related reports.
- Supervise three professional staff members and two administrative assistants.

Co-Chair, Core Curriculum Revision Task Force (October 2010 – present)

- Helped to develop and lead a process by which the Creighton College of Arts and Sciences faculty revised the core curriculum. (We are currently in the implementation phase.)

- Developing and implementing an assessment plan for the new core curriculum.
- Collaborated with faculty and administrators from the other undergraduate colleges and schools within the University to adopt and implement a (first ever) University-wide undergraduate core curriculum.

Chair, Department of Chemistry (July 2002 – August 2010)

- Supervised 10 – 14 tenured or tenure track faculty, two laboratory instructors, three adjunct faculty, one permanent part-time faculty, and three staff members.
- Oversaw an equipment and supplies budget that ranged from \$100,000 - \$150,000.
- Oversaw the development and implementation of an American Chemical Society certified Biochemistry major.
- Managed the department through a building expansion and renovation.
- Successfully grew the tenure-track faculty from 10 to 14 positions.
- Successfully recruited six new junior faculty members (four new positions and two retirement/replacement positions) and two new laboratory instructors.
- Successfully mentored to tenure and promotion five junior faculty members.
- Successfully mentored to promotion to full professor one faculty member (only the third full professor in the past 30 years from the department).
- Oversaw the development of a faculty workload analysis rubric to address inequities (both real and perceived) in faculty teaching loads.
- Collaborated with faculty members to develop a faculty evaluation rubric to increase transparency in the evaluation process.
- Implemented assessment of written and oral communication within the major program.
- Revised criteria for offering undergraduate research credit.

Acting Chair, Department of Atmospheric Science (July 2013 – June 2014)

- Supervise three tenured faculty members, one full-time staff member, and one part-time staff member.
- Oversee the graduate (MS) program and the certified undergraduate program.
- Coordinate with other departments and interdisciplinary programs that make extensive use of ATS courses and resources.

Creighton College of Arts and Sciences Lead Academic Advisor (Summer 2006 – Summer 2010)

- Support ~40 faculty members serving as academic advisors to incoming freshmen.
- Assist in coordinating registration for 700 – 800 incoming freshmen during the summer.
- Coordinate the offering of placement exams in math, chemistry, and foreign languages.
- Serve as resource for students, faculty advisors, and Student Services during the summer prior to the freshman year.

Director, General Chemistry Division (August 1999 – July 2002)

- Determine the course schedule and teaching assignments for 8 – 12 sections of general chemistry lecture and laboratory each semester.
- Oversee the administration of the ACS standardized final exams and other assessment instruments in each semester.
- Work with the General Chemistry Laboratory Instructor to coordinate laboratory and lecture material across sections.
- Coordinate and promote faculty development opportunities for improved teaching effectiveness.
- Coordinate the textbook selection process.

Inaugural Clare Boothe Luce Professor for Women in Science (August 1990 – July 1995)

- Created the Women in Science Seminar
- Developed and administered the CBL Scholarship program for undergraduate women in science.
- Coordinated the first Women in Science symposium at Creighton (October 1992)

Additional College and University Service

2013 – present	University Assessment Committee
2011	University Strategic Planning – Undergraduate Education Task Force
2008 – 2010	Board of Undergraduate Studies (also 2004 – 2006), elected member
2008 – 2010	Faculty Senate, Executive Board, Vice President
2008 – 2009	Member, University Strategic Planning Task Force
2008	Internal member, Computer Science External Review team
2007 – 2008	Dean Search Committee, elected faculty representative
2007 – 2008	Faculty Senate, Executive Board, Senate Secretary
2007 – 2009	Council of Chairs Executive Committee
2005 – 2007	College Budget Committee, elected member
2005 – 2007	Workload task force, appointed member
2003 – 2005	Faculty Senate, Executive Board
2002 – 2004	Honors Advisory Board
2002 – 2003	First Year Experience advisory committee, appointed member
2002 – 2003	Women's and Gender Studies Board, appointed member
1999 – 2010	Faculty Senate, elected member 1999 – 2002, appointed 2002 - 2010
1997 – 2002	Honors Program Board, appointed member
1998	University Diversity Seminar on Gender and Pedagogy, co-leader
1997	Chair, Associate Dean Search Committee
1996 – 1997	National and International Scholarships committee, appointed member
1995 – 1996	Advisory Committee to the Vice President, Academic Affairs
1995 – 1996	Chair, Clare Boothe Luce Faculty Search Committee
1992 – 1994	University Academic Council, elected member

Additional Departmental Service

2001 – 2002	Chair, Physical Chemistry Search Committee
1999 – 2001	Curriculum revision committee member
1999 – 2000	Chair, Biochemistry Search Committee
1998 – 2002	Renovation committee member
1996 – 2001	Mentor, new faculty
1996	Acting Chair, Department of Chemistry, Creighton University
1993 – 1994	Chair, Analytical Chemistry Search Committee
1991 – 2010	Chemistry Field Day moderator (annual until 2000, bi-annual since)

Other Professional Service and Activities

1982 – present	American Chemical Society, member; divisions of Chemical Education, Inorganic Chemistry, and Physical Chemistry
1991 – present	Sigma Xi, member
1996 – present	Society for Biological Inorganic Chemistry, member
1997 – present	International Jesuit Association of Chemistry and Chemical Engineering Universities and Schools (ISJACem), founding member
2001 – 2010	ETS-GRE, Physical Chemistry Group, consultant
2002 – 2003	Pacific Northwest National Laboratory, Summer research programs, consultant, research ethics education
Reviewer	<i>Journal of Chemical Education</i> , <i>Organometallics</i> , <i>Inorganic Chemistry</i> , Houghton Mifflin, McGraw-Hill
Referee	The Petroleum Research Fund of the American Chemical Society, Research Corporation

Professional Leadership

1997 – 1999	Chair, American Chemical Society, Omaha Section
1996 – 1997, 2009 - present	President, Sigma Xi, Omaha Chapter
1994 – 1996, 2007 - 2009	Board member, Sigma Xi, Omaha Chapter

2010 – present	Associate Director, Multi-Institution Constituency Group, Sigma Xi (National)
2009 – 2012	National Nominating Committee (elected) Sigma Xi

Honors, Fellowships, and Awards

2010	Creighton College of Arts and Sciences Dean's Award for Professional Excellence – Freshman Advising
1998	Creighton College of Arts and Sciences Faculty Development (to develop a research ethics course)
1995	Omicron Delta Kappa <i>Teach for Tomorrow</i> Award nominee (again in 1997 and 2001)
1991	Nominated to membership, Sigma Xi, the Scientific Research Society
1990	Recipient of the first Clare Boothe Luce Endowed Chair for Women in Science, Creighton University
1986	Recipient of a Knapp Travel Grant, University of Wisconsin
1983	Recipient of a duPont Summer Research Assistantship

Research Interests

Electron transfer mechanisms in metallo-proteins; Small-molecule activation at transition metal centers; Theoretical methods; Kinetics and spectroscopy of metallo-enzymes; Factors that affect and predict success in General Chemistry.

Research Support and/or Fellowships for research

Principal Investigator (sole author):

1989	\$ 4,500	Grinnell College Grant Board
1990	\$ 7,000	Research Corporation
1991	\$ 18,000	American Chemical Society--The Petroleum Research Fund
2004	\$106,875	National Institutes of Health – <i>Applied for</i>

Co-Principle Investigator (multiple authors):

1990	\$102,600	National Science Foundation - REU Program - Grinnell College
1993	\$348,178	National Science Foundation - Teacher Enhancement Program - Creighton University
1993	\$ 54,501	National Science Foundation – EPSCoR

Publications and Presented Papers

A. Pertaining to chemical research or chemistry pedagogy.

Peer-reviewed publications:

Harris, H.A. and Raffaele, M. "A Theoretical Study of a Hydrogenase Model Complex: η^1 - vs. η^2 -Binding of H_2 to a Transition Metal Center". submitted to *Angew. Chem., Int. Ed.* manuscript in revision and resubmission phase.

Harris, H.A. "Fitting Physical Chemistry into a Crowded Curriculum" in *Advances in Teaching Physical Chemistry*, T.A. Schoolcraft and M.D. Ellison, eds.; ACS Symposium Series 973; American Chemical Society: Washington, DC, 2008.

Harris, H.A. and Andersen, L.E. "The Nature of the Si - Si Double Bond in a Series of Substituted Disilenes". *Main Group Metal Chemistry*, **1994**, 17, 403-408.

Harris, H.A.; Kanis, D.R.; Dahl, L.F. "A Comparative Theoretical Analysis of the Tetrathiolate- and Oxalate-bridged Ditungsten Series, $[(Cp_2Ti)_2(m-C_2X_4)]^n$ (where $X=S$, $n= +2, +1, 0, -1, -2$; $X=O$, $n= +2, 0, -2$): An Explanation of the Electron Delocalization from the Metal Centers Upon

- Replacement of the Oxalate Ligand with the Tetrathiolate Ligand" *J. Amer. Chem. Soc.* **1991**, *113*, 8602-8611.
- Edverson, G.M.; Gaines, D.F.; Harris, H.A.; Campana, C.F. "NMR and X-ray Studies of Penta- and Hexaborane Alkyl Derivatives Involving [3.3.1] and [3.3.2] Ring Systems". *Organometallics*, **1990**, *9*, 401-408.
- Wermer, J.G.; Gaines, D.F.; Harris, H.A. "Synthesis and Molecular Structure of Lithium Tris(tert-butyl)beryllium, Li[Be(tert-C₄H₉)₃]. *Organometallics*, **1988**, *7*, 2421-2422.
- Harris, H.A.; Rae, A.D.; Dahl, L.F. "The Synthesis, Structure, and Properties of [(η^5 -C₅H₅)₂Ti]₂(C₂S₄), the First Example of an Early Transition Metal Promoted Reductive Head-to-Head Dimerization of CS₂." *J. Amer. Chem. Soc.*, **1987**, *109*, 4739-4741.

Papers read:

- Harris, H.A. "Predicting (non)success in General Chemistry for first-year students". "Abstracts of Papers" 237th National Meeting of the American Chemical Society, Salt Lake City, UT. March, 2009. (invited contribution)
- Harris, H.A. "Fitting Physical Chemistry into a Crowded Curriculum". "Abstracts of Papers" 230th National Meeting of the American Chemical Society, Washington, DC. August, 2005. (invited contribution)
- Harris, H.A. "Teaching and Research at a Comprehensive University". "Abstracts of Papers" 225th National Meeting of the American Chemical Society, New Orleans, LA. March, 2003. (invited contribution)
- Harris, H.A.; Barrios, Z. X.; Grosely, R.; Tilleman, J. "Quantum Chemical Studies of the Ni-Fe Hydrogenase Active Site: A Comparative Analysis". "Abstracts of Papers" 219th National Meeting of the American Chemical Society, San Francisco, CA March, 2000.
- Harris, H.A.; Raffaele, M. "A Theoretical Study of a Hydrogenase Model Complex: η^1 - vs. η^2 - Binding of H₂ to a Transition Metal Center". Metals in Biology Gordon Conference, Ventura, CA January, 1998.
- Harris, H.A. "A Theoretical Analysis of a Series of Polyene-bridged Diferrocene Compounds". "Abstracts of Papers" 213th National Meeting of the American Chemical Society, San Francisco, CA April 1997.
- Harris, H.A.; Raffaele, M. "Molecular Orbital Analysis of a Hydrogenase Model Complex - Implications for Dihydrogen Binding to a Metal Site and Subsequent Deprotonation of the M-H₂ Complex" "Abstracts of Papers" 209th National Meeting of the American Chemical Society, Anaheim, CA April 1995.
- Harris, H.A.; Raffaele, M.; Cunningham, S.C.; Ollerich, J. "Molecular Orbital Analysis of a Series of Transition Metal-Hydride Complexes: An Investigation of the Mechanism of H⁻ Transfer" "Abstracts of Papers" 208th National Meeting of the American Chemical Society, Washington, D.C. August, 1994.
- Harris, H.A.; Crans, D.C.; Felty, R.F. "Electronic Structures of a Series of Oxovanadium (V) Alkoxides - Implications for Structure and Reactivity" "Abstracts of Papers" 206th National Meeting of the American Chemical Society, Chicago, IL August 1993.
- Harris, H.A.; Andersen, L.E. "A Theoretical Investigation of the Si - Si Double Bond in Substituted Disilenes" "Abstracts of Papers" 199th National Meeting of the American Chemical Society, Boston, MA. April, 1990.

North, T.E.; Spencer, B.; Harris, H.A.; Dahl, L.F. "Comparative Analysis of the Triply Bridging Thiocarbonyl vs Carbonyl Ligand in a Series of Triangular Nickel Clusters. "Abstracts of Papers" 196th National Meeting of the American Chemical Society, Los Angeles, CA, Sept. 1988.

Harris, H.A.; Dahl, L.F. "A Comparative Theoretical Analysis of the Tetrathiolate- and Oxalate-bridged Titanium Dimers, $[(\eta^5\text{-C}_5\text{H}_5)_2\text{Ti}]_2(\text{C}_2\text{S}_4)$ and $[(\eta^5\text{-C}_5\text{H}_5)_2\text{Ti}]_2(\text{C}_2\text{O}_4)$: An Explanation of the Apparent Electron Delocalization from the Metal Centers Upon Replacing the Oxalate Ligand with the Tetrathiolate Ligand" "Abstracts of Papers" 192nd National Meeting of the American Chemical Society, Anaheim, CA Sept. 1986.

Harris, H.A.; Dahl, L.F. "Titanium-Promoted Carbon-Carbon Bond Formation by Reductive Head-to-Head Coupling of CS_2 : A Comparative Analysis of the Electron Delocalized Tetrathiooxalate Dimer, $[(\eta^5\text{-C}_5\text{H}_5)_2\text{Ti}]_2(\text{C}_2\text{S}_4)$ with the Corresponding Electron Localized Oxalate and Carbodiimide Dimers" 190th National Meeting of the American Chemical Society, Chicago, IL Sept. 1985.

Englert, M.E.; Maj, J.J.; Rae, A.D.; Jordan, K.T.; Harris, H.A.; Dahl, L.F. "Transition Metal Promoted Carbon-Carbon Bond Formation by the Reductive Head-to-Head Coupling of CS_2 : Direct Synthesis of π -Delocalized bis (1,2) - dithiolene like Tetrathiooxalato Dimetal Complexes, $\text{LMC}_2\text{S}_4\text{ML}$, from CS_2 and Resulting Physicochemical Analysis" "Abstracts of Papers" 187th National Meeting of the American Chemical Society, St. Louis, MO April, 1984.

Other Publications

Physical Chemistry I Laboratory Manual, Thermodynamics and Kinetics - A Project Oriented Approach. Written in 1996 and revised each subsequent year.

General Chemistry I Laboratory Manual. Written in Spring, 2000.

General Chemistry II Laboratory Manual, Written in Fall, 2001

Invited Lectures:

Fall 1986	<i>X-ray crystallography and theoretical chemistry</i>	Beloit College Chemistry Department
Spring, 1987	<i>What can molecular orbital theory tell us about CO_2?</i>	Grinnell College Chemistry Department
Spring, 1990	<i>The Si-Si double bond – Can MO theory prove its existence?</i>	Creighton University Chemistry Department
Fall, 1994	<i>Mechanisms of H_2 activation and hydride transfer: an MO analysis</i>	University of Kansas Inorganic Chemistry Division
Fall, 1994	<i>The acidity of transition metal hydrides – An MO approach</i>	Xavier University Chemistry Department
Spring, 1998	<i>Models of dihydrogen activation at transition metal centers</i>	The Nitrogen Fixation Lab, The John Innes Center, Norwich, UK
Summer, 2002	Workshop on Research Ethics for undergraduate summer research students	Pacific Northwest National Laboratories
Summer, 2003	2 Workshops on Research Ethics, one for undergraduate summer research students, one for graduate students and post-docs.	Pacific Northwest National Laboratories
Fall, 2008	<i>Analysis, assessment, and adjustment:</i>	Missouri State University

	<i>maximizing the educational opportunities for students in Chemistry</i>	Chemistry Department
Fall, 2010	<i>A one-semester rigorous physical chemistry course</i>	University of Nebraska at Omaha Chemistry Department

B. Pertaining to research on women in science:

Publications:

Harris, H.A. "The Clare Boothe Luce Program for Women in Science at Creighton University", *Teaching the Majority: Science, Mathematics and Engineering that Attracts Women*. Sue V. Rosser, ed. Teachers College Press, 1995.

Invited Lectures:

March, 1992	<i>Women in science</i>	University of Nebraska – Omaha, Women’s Studies Series
March, 1992	<i>The history of women in science – is education the key?</i>	Creighton University Biology Department
April, 1992	<i>Women in science – perspectives from the field</i>	University of Nebraska – Omaha, History and Philosophy of Science group
May, 1992	<i>The impact of <u>Women’s Ways of Knowing</u> on classroom interactions</i>	Nebraska Faculty College
June, 1992	<i>A few comments on the history of women in science</i>	“Making Connections: Women’s Studies at Catholic Colleges” conference at Boston College
October, 1992	<i>“A Room of One’s Own” for women in science</i>	Creighton University, Clare Boothe Luce Inaugural Symposium
February, 1993	<i>Perspectives of women in science</i>	Creighton University Physics Department
May 1993	<i>Ellen Swallow Richards and Gertrude Elion: profiles in determination</i>	Creighton University – President’s Council of Women
April, 2003	<i>Balancing an academic career with personal and family life</i>	Meeting of the Clare Boothe Luce Faculty Chairs, sponsored by the Luce Foundation

References (more will be furnished upon request)

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