RICHARD V. PRIGODICH - CURRICULUM VITAE

EDUCATION
B.A. Chemistry, Lake Forest College, Lake Forest, IL, 1974
Ph.D. Chemistry, Wesleyan University, Middletown, CT, 1982
NIH Post-Doctoral Fellowship, Yale University, 1982-85

AWARDS AND FELLOWSHIPS
Adjunct Research Professor, University of Massachusetts, 1994
NIH Senior International Fellow, Oxford University, 1990
Visiting Scientist Award, Yale University, 1986
NIH Post-Doctoral Fellowship, Yale University, 1982-85
Petersson Fellowship, Wesleyan University, 1981
Phi Beta Kappa, Lake Forest College, 1974

PROFESSIONAL EXPERIENCE

2013-15	Dean of Academic Planning
2013	Interim Dean of the Faculty, Trinity College
2001-	Professor of Chemistry, Trinity College
1994-05	Chair, Chemistry Department, Trinity College
1992-01	Associate Professor of Chemistry, Trinity College
1985-91	Assistant Professor of Chemistry, Trinity College
1982-85	NIH Post-Doctoral Fellow, Yale University
1978-82	Ph.D. Chemistry, Wesleyan University
1976-77	Analytical Chemist, Colt Industries,
1975-76	Teacher, Marvelwood School
1974-75	Teacher, Perkins School for the Blind

TEACHING The teaching load at Trinity College is five three-semester hour courses per year. Professor Prigodich's teaching load is a variable combination of five of the following courses: Introductory Chemistry I and II, Introductory Chemistry I and II Laboratory, Physical Chemistry I and II, Physical Chemistry Laboratory, Physical Biochemistry, Physical Biochemistry Laboratory, Molecular Spectroscopy, Molecular Spectroscopy Laboratory, Magnetic Resonance, Magnetic Resonance Laboratory, Biological Chemistry, and First Year Seminars.

SCHOLARSHIP The physical biochemistry of protein-ligand interactions. The two major research projects currently being investigated focus on: the elucidation of the binding sites of a class of proteins involved in the replication, recombination and repair of DNA that bind single-stranded DNA, and the structure and binding sites of a small protein of unknown function found in high concentration in bone known as osteocalcin. Various physical techniques are used in these studies including: high resolution solution nuclear magnetic resonance (NMR), solid state NMR, circular dichroism, fluorimetry, x-ray powder diffraction, capillary zone electrophoresis, DNA synthesis, peptide synthesis, atomic force microscopy, ICP, mass spectrometry and infra-red spectroscopy.

SUMMARY OF TEACHING AND SERVICE ACCOMPLISHMENTS

New Courses Taught

Established two new laboratory courses:	CHEM 309L- Physical Chemistry I
	CHEM 316L- Physical Biochemistry
Established new upper level courses:	CHEM 418 - Magnetic Resonance
	CHEM 404 - Biochemical Evolution
	CHEM 404 - Protein Structure & Function
First Year Seminars:	AIDS: An Overview
	Origin of Life
	Three Themes from the Thirties
Sophomore year ISP seminar	Living with AIDS in the 21st Century

Contributions to Departmental Curriculum and Teaching

Twelve and one-half years as department chair. As chair helped initiate and direct department-wide discussions regarding the department's rededication to and revamping of the first year CHEM 111 - CHEM 112 sequence. Was involved in the original design of this lab-directed lecture course and has taught both sections several times. Inaugurated student research seminar program and departmental student advising sessions. Oversaw raising funds and endowments for purchase of major additions to departmental capital equipment inventory. Oversaw renovation plan for teaching laboratories. Supported the establishment of the Supplemental Instruction Program. Helped establish a vibrant and productive departmental summer research program for undergraduates.

Contributions to College's Science Curriculum

Served on the Science Alliance Steering Committee for six years and acted as interim director for one year. Participated in original discussions and planning that led to the establishment of ISP. Directed discussions among science faculty that led to the science departments' concerted effort to establish an Environmental Science Program.

Contributions to College Curriculum

Served on Curriculum Committee for eleven years and one year as chair. Served on many Curriculum Committee subcommittees.
Served on the Educational Policy Committee for four years and one year as chair.
Served on the college wide Curriculum Review Committee (2002).

Other Service to the College

Dean of Academic Planning (2013-15)
Interim Dean of the Faculty (2013)
Co-chair of the faculty/trustee Special Committee on Institutional Administration and Governance (2004).
Served on the Curriculum Committee for 13 years and one as chair.
Served on Faculty Research Committee for four years.
Served on the Educational Policy Committee for four years and one year as chair.

Served on the Appointments and Promotions Committee two years and as chair.
Was a founding member of the Math Center Advisory Committee.
Was a founding member of the MVP, Mentors for Violence Prevention Program.
Was a founding member of the TCCTR and Human Rights Program steering committees.
Has served on other *ad hoc* committees at the request of Presidents and Deans.

PEDAGOGICAL PUBLICATIONS

R. V. Prigodich,"A Stopped-Flow Kinetics Experiment for the Physical Chemistry Laboratory Using Noncorrosive Reagents", Journal of Chemical Education (2014), **91(12)**, 2200-2202.

M. Munowitz and R. V. Prigodich, Selected Solutions for Principles of Chemistry, W. W. Norton, Co., N. Y., 2000.

M. Munowitz and R. V. Prigodich, Complete Solutions for Principles of Chemistry, W. W. Norton, Co., N. Y., 2000.

RESEARCH PUBLICATIONS

Lindsay H. Oakley, Richard Prigodich, Matthew J. Collins, "Experimental Studies and the Computational Kinetic Modeling of the Aging and Decay of an Osteocalcin Model Peptide", manuscript in preparation.

R.V. Prigodich and A. Janiga*, "Determination of the Type I Collagen binding site on Osteocalcin", manuscript submitted.

M. Buckley, A. Walker, S. Y. W. Ho, Y. Yang, C. Smith, P. Ashton, J. T. Oates, E. Cappellini, H. Koon, K. Penkman, B. Elsworth, D. Ashford, C. Solazzo, P. Andrews, J. Strahler, B. Shapiro, P. Ostrom, H. Gandhi, W. Miller, B. Raney, M. I. Zylber, M. T. P. Gilbert, R. V. Prigodich, M. Ryan, K. F. Rijsdijk, A. Janoo, and M. J. Collins, "Comment on 'Protein Sequences from Mastodon and Tyrannosaurus rex Revealed by Mass Spectrometry" Science (2008) **319**, 33c.

C. I. Smith, O. E. Craig, R. V. Prigodich, C. M. Nielsen-Marsh, M. M. E. Jans, C. Vermeer, M. J. Collins, "Diagenesis and survival of osteocalcin in archaeological bone", Journal of Archaeological Science (2005), **32(1)**, 105-113.

M. J. Collins, C. Nielsen-Marsh, J. Hiller, C. I. Smith, J. P. Roberts, R. V. Prigodich, T. J. Wess, J. Csapo, A. R. Millard, G. Turner-Walker, "Bone Diagenesis: implications for heritage management", in The Future from the Past: Archaeolozoology in Wildlife Conservation and Heritage Management (R. C. G. M. Lauwerier and I. Plug, Eds.), Chapter 12, pp. 124-132, 2004.

M. J. Collins, C. Nielsen-Marsh, J. Hiller, C. Smith, J. Roberts, R. Prigodich, T. Wess, J. Csapo, A. Millard, G. Turner-Walker, “The Survival of Organic Matter in Bone: A Review”, Archaeometry (2002), **44(3)**, 383-394.

R. V. Prigodich and M. Vesely*, "Characterization of the Complex between Bovine Osteocalcin and Type I Collagen, Archives of Biochemistry and Biophysics (1997) **345**, 339-341.

R.V. Prigodich and M. Zager*, "Indexing Crystal Faces", Powder Diffraction, (1995) **10 (2)**, 127-128.

R.V. Prigodich and A. Sanaulla*, "Measurement of the Fluorescence Quenching Constants of 3-Nitrotyrosine with N-Acetyltryptophanamide", Journal of Chemical Research, (1991) **(3)**, 66-67.

R.V. Prigodich and C.T. Martin, "Reaction of Single-Stranded DNA with Hydroxyl Radical Generated by Iron(II)-Ethylenediaminetetraacetic Acid", Biochemistry (1990) **29**, 8017-8019.

J.E. Coleman, K.R. Williams, G.C. King, R.V. Prigodich, Y. Shamoo and W.H. Konigsberg, "Mapping the Functional Domains in the ssDNA Binding Proteins Gene 5 and Gene 32", in Protein Engineering (D.L. Oxender and C.F. Fox, Eds.), chapter 30, pp. 323-336, 1987.

R.V. Prigodich, Y. Shamoo, K.R. Williams, J.W. Chase, W.H. Konigsberg and J.E. Coleman,"^{1}H NMR (500 MHz) Identification of Aromatic Residues of Gene 32 Protein Involved in DNA Binding by the Use of Protein Containing Perdeuterated Aromatic Residues and by Site-Directed Mutagenesis", Biochemistry (1986) **25**, 3666-3672.

J.E. Coleman, K.R. Williams, G.C. King, R.V. Prigodich, Y. Shamoo and W.H. Konigsberg, "Protein Chemistry-Nuclear Magnetic Resonance Approach to Mapping Functional Domains in Single-Stranded DNA Binding Proteins", Journal of Cellular Biochemistry (1986) **32**, 305-326.

R.V. Prigodich and P. Haake, "Association of Cations to Nucleoside Di- and Triphosphates as Studied by 31-Phosphorus NMR," Inorganic Chemistry (1985) **24**, 88-93.

R.V. Prigodich, T. O'Connor and J.E. Coleman,"^{1}H, ^{113}Cd and ^{31}P NMR of Osteocalcin (Bovine γ-Carboxyglutamic Acid Containing Protein)", Biochemistry (1985) **24**, 6291-6298.

P. Haake and R.V. Prigodich, "Method for the Determination of Phosphate Anion - Cation Association Constants from 31-Phosphorus Chemical Shifts", Inorganic Chemistry (1984) **23(4)**, 457-462.

R.V. Prigodich, K.R. Williams, J. Casas-Finet, W. Konigsberg and J.E. Coleman,"^{1}H-NMR (500 MHz) of Gene 32 Protein - Oligonucleotide Complexes", Biochemistry (1984) **23(3)**, 522-529.

R.V. Prigodich and P. Haake,"The Effect of Cations on the Rates of Phosphate Transfer by the Metaphosphate Mechanism. The Implications for the Mechanism of Action of Kinases", Journal of Organic Chemistry (1984) **49**, 2090-2093.

INVITED LECTURES

"Osteocalcin and the Molecular Structure of Bone Tissue"
University of Newcastle – 2000

"Studies on the Molecular Structure of Bone Tissue"
SUNY Stony Brook – 1999

"Interactions of Osteocalcin with Bone Tissue Macromolecules"
University of Connecticut – 1997

"Footprinting Single-Stranded DNA Binding Proteins"
Lake Forest College – 1995

"Towards a Solution Structure of Osteocalcin"
Rhode Island College - 1991

"Solid State NMR Studies of Cadmium Analogs of Hydroxyapatite"
Oxford University - 1990

"Reactions of Single-Stranded DNA with Hydroxyl Radical"
Northeast Regional Meeting of the American Chemical Society
University of Massachusetts, Amherst - 1989

"^{1}H, ^{31}P and ^{113}Cd Solution NMR Studies of Osteocalcin"
Wesleyan University – 1986

ABSTRACTS OF POSTER PRESENTATIONS AT CONFERENCES

"Experimental Studies and the Computational Kinetic Modeling of the Aging and Decay of an Osteocalcin Model Peptide"
Lindsay H. Oakley, Richard Prigodich, Matthew J. Collins,
Ancient Proteins – Copenhagen – August 2018

“Identification of the type I collagen binding site on osteocalcin”
Andrew Janiga* and Richard V. Prigodich
British Society for Matrix Biology – Oxford – March 2015

“Binding Study of N-terminal Osteocalcin Peptides with Type I Collagen”
Andrew Janiga* and Richard V. Prigodich
American Chemical Society National Meeting – March 2009

“Using NMR to determine the Conformation of Capsaicin in Solvents of Varying Polarity”
Bryce Valeries* and Richard V. Prigodich
American Chemical Society National Meeting – March 2009

“Footprinting DNA Binding Sites Using MALDI-TOF MS”
Madeleine Light* and Richard V. Prigodich
American Chemical Society National Meeting – March 2009

“Imaging the Osteocalcin Binding Site on Collagen”
Piper Klemm*, Ann Lehman and Richard V. Prigodich
American Chemical Society National Meeting – 2008

“Degradation of intra-crystalline proteins: molecular clocks?”
Mike Buckley, Enrico Cappellini, Jane Thomas-Oates, Peggy Ostrom, Kirsty Penkman, Richard Prigodich, Matthew Collins*
Gordon Research Conference – Biomineralization – 2006

"Synthesis of 5-5'-di-tert-butyl-N-(9-fluorenylmethyloxycarbonyl)-4-carboxyglutamate”
Frank Mieles* and Nicholas Callahan* and Richard V. Prigodich
American Chemical Society National Meeting – 2006

"FT-IR analysis of Osteocalcin Secondary Structure”
William Roux* and Richard V. Prigodich
American Chemical Society National Meeting – 2005

"Binding Studies of N-terminal Osteocalcin Peptides to type I Collagen"
Anthony Belanger* and Richard V. Prigodich
American Chemical Society National Meeting – 2003

"Footprinting *Eco*SSB bound to Fluorescently-labeled ssDNA via
LIF Capillary Electrophoresis"
R. V. Prigodich and E. Derbyshire*
3rd European Biophysics Congress - 2000

"Evidence for the Preferential Depletion of the Metal(II) Site
in Non-Stoichiometric Apatites"
Richard V. Prigodich and Peter Chupas*
XXVIth European Symposium on Calcified Tissue – 1999

"Footprinting Single-Stranded DNA / SSB Complexes via Capillary Electrophoresis"
Richard V. Prigodich and Sayura Aoyagi*
Northeast Regional Meeting of the American Chemical Society - 1997

"Characterizing the Complex of Bovine Osteocalcin and Type I Collagen"
Richard V. Prigodich and Mark Vesely*
Arthritis Foundation Biennial Conference - 1995

"Solution Strucuture of Osteocalcin"
Richard V. Prigodich and Douglas Macdonald*
Arthritis Foundation Biennial Conference – 1993

"Footprinting the Complex of E. coli SSB and ssDNA"
Richard V. Prigodich and Craig T. Martin
11th International Biophysics Congress – 1993

"The Binding of Bovine Osteocalcin to Type I Collagen"
Richard V. Prigodich and Mark Vesely*
Gordon Research Conference on Bones and Teeth - 1993

"The Binding of Bovine Osteocalcin to Type I Collagen"
Richard V. Prigodich and Mark Vesely*
Gordon Research Conference on Calcium Phosphates - 1992

"Reaction of ssDNA with Hydroxyl Radical"
Richard V. Prigodich and Craig T. Martin
20th Meeting of the Federation of European Biochemical Societies - 1990

"Solid State NMR Studies of Cadmium Analogs of Hydroxyapatite"
Richard V. Prigodich
20th Meeting of the Federation of European Biochemical Societies - 1990

"Site-specific mutagenesis of T4 gene 32 - The role of aromatic-amino-acids in protein-nucleic acid interactions "
Yousif Shamoo, William Roberts, Richard Prigodich, Kenneth Williams, John Chase, Joseph Coleman and William Konigsberg
UCLA Symposium on Molecular and Cellular Biology -
Protein Structure and Design - April 1987

"Solution Structure of Osteocalcin: ^{1}H, ^{31}P and ^{113} Cd NMR Studies"
Richard V. Prigodich, Thomas O'Connor and Joseph Coleman
Gordon Research Conference on Proteins – 1985

"Solution Structure of Osteocalcin: ^{1}H, ^{31}P and ^{113}Cd NMR Studies"
Richard V. Prigodich, Thomas O'Connor and Joseph Coleman
Federation of American Societies for Experimental Biology - 1984

"Aromatic Residues in the DNA Binding Grooves of Gene 5 and Gene 32 Proteins, 500 MHz ^{1}H NMR"
Richard V. Prigodich and Joseph Coleman
Gordon Research Conference on Proteins - 1983

RESEARCH GRANTS

Trinity College Faculty Research – Two-Year Grant
"Imaging the Osteocalcin Binding Site on type I collagen using TEM"
Grant Active 7/08 to 6/10 - $12,000

NSF Shared Instrumentation Grant
“Acquisition of a 400 MHz NMR Spectrometer”
Grant Active 1/07 – $308,000
Co-PI’s: Timothy Curran and Richard Prigodich

Raether Faculty Development Grant
Kinetics of Racemization of Asx amino acids in Human Osteocalcin
Grant Active 6/06 - $5000

Howard Hughes Medical Institute Faculty Development Grant
MALDI-MS Study of Osteocalcin
Grant Active 4/06 - $1660

Howard Hughes Medical Institute Faculty Development Grant
MALDI-MS Study of Osteocalcin
Grant Active 6/06 - $3745

Howard Hughes Medical Institute Faculty Development Grant
Mass Spectrometric Study of Osteocalcin
Grant Active 8/05 - $3950

Howard Hughes Medical Institute Faculty Development Grant
Mass Spectrometric Study of Osteocalcin
Grant Active 4/05 - $3995

Trinity College Faculty Research – Three-Year Grant
"Structure and Function of the Bone Protein Osteocalcin"
Grant Active 7/99 to 6/2002 - $12,000

National Institutes of Health-Academic Research Enhancement Award (AREA)
"Footprinting Protein Complexes with Single-Stranded DNA".
Grant Active 7/95 to 6/99 - $108,300.

Trinity College Faculty Research - Student Assistantship
"Indexing the Crystallographic Faces of Hydroxyapatite"
Grant Active 6/94-8/94 - $2000

Pew Foundation - NECUSE
"Summer Undergraduate Research Fellowships"
Five separate Fellowships at $2500 each
Grant Active 6/88-8/94 - $12,500 Total

Trinity College Faculty Research Leave
"The Structure of Hyroxyapatite and Osteocalcin"
Grant Active 9/93 to 1/94

Perkin-Elmer
"Ultra-Violet Optical Rotation Studies of Peptides"
Grant Active 8/93 - $1000

Pew Foundation - NECUSE
"Computational Chemistry in the Chemistry Curriculum"
Grant Active 7/93-6/94 - $10,000

Tektronix Company - CAChe Scientific
"Computational Chemistry in the Chemistry Curriculum"
Grant Active 8/93 - $16,500

Arthritis Foundation
"Structure of Hydroxyapatite and Osteocalcin:
Grant Active 6/92 - 5/95 - $75,000

Research Corporation
"Structure of Hydroxyapatite and Osteocalcin
Grant approved but funding withheld due to receipt of Arthritis Foundation award (see above)

Pew Foundation - NECUSE
"Integrated Physical Chemistry and Biochemistry Laboratories"
Grant Active 6/91 - $15,000

National Institutes of Health - Senior International Fellowship -
Fogarty International Center
"Solution and Solid-State NMR Studies on Bovine Osteocalcin"
Grant Active 1/90 - 12/90 - $32,700

Trinity College Faculty Research Leave
"Solution and Solid State NMR Studies on Bovine Osteocalcin"
Grant Active 1/90 to 12/20/90

National Institutes of Health-Academic Research Enhancement Award (AREA)
"Solution and Solid State Structure and Function of Osteocalcin".
Grant Active 9/86 to 9/88 - $63,176.00.

Research Corporation
"Chemical Modification of E. coli SSB"
Grant approved but funding withheld due to receipt of NIH-AREA award (see above)

Ira W. DeCamp Foundation
"Undergraduate Instruction in NMR"
Grant Active 8/87 - $25,000

National Science Foundation - College Science Instrumentation Program
"Undergraduate Instruction in NMR"
Grant Active 6/87 - $50,000

SHARED INSTRUMENTATION GRANTS WITH OTHER INSTITUTIONS ON WHICH RICHARD PRIGODICH IS A CONTRIBUTOR AND PARTICIPANT

Elias Howe Public College and University Grant
"Advanced Computing Resources for Biomolecular Design and Biopolymer Modeling"
P.I.: James G. Henkel – UCONN
James R. Knox – UCONN
Grant Active: 7/95 - $84,849

National Science Foundation Shared Instrumentation Program
"High Resolution 500 MHz Biological NMR Facility"
P.I.: Dr. Irina Russu - Wesleyan University
Dr. Philip Bolton - Wesleyan University
Grant Active: 9/95 - $300,000

National Science Foundation Shared Instrumentation Program
"Solid State NMR Facility"
P.I.: Dr. Lynmarie Thompson - University of Massachusetts
Grant Active 10/92 - $250,000

National Science Foundation Shared Instrumentation Program
"High Resolution 400 MHz Biological NMR Facility"
P.I.: Dr. Irina Russu - Wesleyan University
Dr. Philip Bolton - Wesleyan University
Grant Active: 6/88 - $300,000