



Bryan A. Hanson, Ph.D.
Professor of Chemistry & Biochemistry

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Education & Positions Held

Professor of Chemistry, DePauw University	August 2000 to present
Julian Professor of Chemistry in Honor of Jack Cook (endowed chair)	August 2001 to June 2006
Visiting Scholar, Purdue University Dept. of Chemistry (Raftery Lab)	September 2007 to December 2007
Associate Professor of Chemistry, DePauw University	August 1992 to August 2000
Assistant Professor of Chemistry, DePauw University	September 1986 to August 1992
Postdoctoral Associate w/James D. White Oregon State University	Sept. 1984 to Aug. 1986
Ph.D., Chemistry University of California Los Angeles, California	September 1984 Ph.D. Thesis (Director: Wayne J. Thompson): Studies Directed Toward the Synthesis of Paxilline Analogs: Synthesis of 2,3 Disubstituted Indoles and Vicinal Quaternary Carbon Moieties
B.S., Biochemistry (with honors) California State Univ. Los Angeles, California	October 1981 Bachelor's Thesis (Director: Stanley H. Pine): Titanium-Mediated Methylenation Reactions. Kinetic Studies as a Mechanistic Probe

Professional Activities

Publications and Presentations:

"The Calabar Bean: Percy L. Julian & the Synthesis of Physostigmine. An Interesting Twist on African Ethnobotany in the Americas" Presented at the 50th Annual Meeting of the Society for Economic Botany, May 31- June 4, 2009, College of Charleston.

"Chemical and Other Excursions Among Medicinal Plants" Talk presented to the Wabash Valley Section of the American Chemical Society, October 15th, 2008, Indiana State University.

"Assessing *Serenoa repens* (Arecaceae) Quality at the Retail Level Using Spectroscopic and Chemometric Methods" Bryan A. Hanson, Tao Ye, M. Daniel Raftery. Presented at the 49th Annual Meeting of the Society for Economic Botany, June 1-5, 2008, Duke University.

"A Chemist's View of Medicinal Plants" Presentation at the 16th Annual Hobbit Gardens Herb Festival Sept. 9th, 2007.

"The Materia Medica of Dr. William D. Hutchings" Presentation to the John Shaw Billings Society at the Indiana Medical History Museum, September 2006.

"The Prescribing Habits and Materia Medica of Dr. William D. Hutchings" Ashley Paschal, Justin McNabney and Bryan Hanson. *Pharmacy in History* Vol 47(3) (2005) 94-111.

Understanding Medicinal Plants: Their Chemistry and Therapeutic Action Haworth Herbal Press, July 2005.

"The Materia Medica and Prescribing Habits of Dr. William D. Hutchings" Ashley Paschal, Justin McNabney and Bryan Hanson. 120th Annual Meeting Indiana Academy of Science, October 28-29 2004, Hanover Indiana.

"A Chemist's Perspective on 19th Century Medicine" presentation to the Historic Madison Indiana docents. August 2003.

"Medicinal Plants for Poets: Scientific and Cultural Concepts for Non-Majors" 225th National American Chemical Society Meeting, New Orleans, March 2003. Abstract 161.

"The New Chemistry Curriculum at DePauw University: An Overview" 225th National American Chemical Society Meeting, New Orleans, March 2003. Abstract 648.

"A Chemist's Perspective on 19th Century Medicine" Faculty Forum presentation at DePauw University, September 13th, 2001.

“Designing a Comprehensive Faculty Development Program via a Case Study of the Program at DePauw University” Bryan A. Hanson and four others. Eighth National Conference of the Council on Undergraduate Research, Wooster OH, June 2-24, 2000.

“Development of a New Protecting Group for Hydroxylamine” Bryan A. Hanson,* and Richard Pilston. Thirty-fourth National Organic Symposium, American Chemical Society, Organic Division, Williamsburg, VA, June 11–15, 1995, Poster 104.

“Molecular Mechanics Investigation of Novel DNA Base–Pair Mismatches” Bryan A. Hanson,* Katherine E. Garrett, Kristina L. Thomas, and Cassandra L. Martien. Thirty-Second National Organic Chemistry Symposium, American Chemical Society, Organic Division, Minneapolis, MN, June 16–20, 1991, Poster A–40.

“Molecular Mechanics Investigation of Novel DNA Base–Pair Mismatches” Bryan A. Hanson,* Katherine E. Garrett, Kristina L. Thomas, and Cassandra L. Martien. 1991 Joint Central – Great Lakes Regional Meeting, American Chemical Society, Indianapolis, IN, May 29–31, 1991, Abstract 355.

“Molecular Mechanics Investigation of an RNA Pseudoknot” B. A. Hanson,* G. R. Dieckmann and B. T. Sanderson. Twenty-first Central Regional Meeting, American Chemical Society, Cleveland, OH, May 31–June 2, 1989, Abstract 162.

“Conformational Analysis of the Pyrrolizidine Alkaloid Senecionine Using Molecular Mechanics” Bryan A. Hanson,* and James D. White, Third Chemical Congress of North America, June 5–10, 1988, Abstract ORGN 188.

“A Molecular Mechanics Study of the Pyrrolizidine Alkaloid Jacobine” Bryan A. Hanson,* and James D. White, Fourth-First Northwest Regional Meeting, American Chemical Society, June 16–18, 1986. Abstract 191.

“Conformational Analysis of the Pyrrolizidine Alkaloid Senecionine Using Molecular Mechanics” Bryan A. Hanson* and James D. White. *Journal of the American Chemical Society*, **1988**, *110*, 6314.

“An Inexpensive, Foolproof Apparatus for Flash Chromatography” Bryan A. Hanson and Wayne. J. Thompson. *The Journal of Chemical Education* **1984**, *61*, 645.

Professional Presentations By Students Under My Supervision:

“Preliminary Metabolomic Profiling of Swallowtail Larval Host Plants: Possible Insight into the Evolution of Phenotypic Plasticity” Jessica Boyer* and Bryan Hanson. Presented at the 6th Annual Indiana Local Section American Chemical Society Poster Session, Indianapolis, October 10th, 2005.

“The Materia Medica and Prescribing Habits of Dr. William D. Hutchings” Ashley Paschal*, Justin McNabney and Bryan Hanson. Presented at the 5th Annual Indiana Local Section American Chemical Society Poster Session, DePauw University, October 11th, 2004.

“Chemical and Bioinformatic Approaches to Obtaining the Sequence of Pupal Melanizing Reducing Factor (PMRF)” Peter Hogg* and Bryan Hanson. Presented at the 5th Annual Indiana Local Section American Chemical Society Poster Session, DePauw University, October 11th, 2004.

“Attempted Isolation of Pupal Melanization Reducing Factor (PMRF) in the Spicebush Swallowtail, *Papilo glaucus*” Kyle Danforth and Bryan Hanson, Fourth Annual Indiana Local Section American Chemical Society Poster Session, Indianapolis, IN October 8th 2003.

“Analysis of the Chemical Constituents Found in the Stonecrop Plants and Apollo Butterflies of the Rocky Mountains” Tyler Green*, Bryan A. Hanson and Dana Garrigan, Indiana Academy of Science, November 3, 2000.

“Dr. Hutching’s 19th Century Prescriptions: Chemical, Botanical, Pharmacological and Historical Perspectives” Justin McNabney*, Bryan A. Hanson and Michael A. Flannery, Indiana Academy of Science, November 3, 2000.

“Analysis of the Chemical Constituents Found in the Stonecrop Plants and Apollo Butterflies of the Rocky Mountains” Tyler Green*, Bryan A. Hanson and Dana Garrigan, 1st Annual Indiana Local Section American Chemical Society Poster Session, Indianapolis, October 9th, 2000.

“Dr. Hutching’s 19th Century Prescriptions: Chemical, Botanical, Pharmacological and Historical Perspectives” Justin McNabney*, Bryan A. Hanson and Michael A. Flannery, 1st Annual Indiana Local Section American Chemical Society Poster Session, Indianapolis, October 9th, 2000.

“The Role of Chemical Attractants in the Pollination of Selected Indiana Orchid Species” Dawn M. Ahlgren*, Bryan A. Hanson and Michael A. Homoya, Indiana Academy of Science, October 31, 1997.

“Biologically Active Components of *Asarum canadense*” Valerie K. Turan*, Dawn M. Ahlgren, Sara E. Peters, and Bryan A. Hanson, Indiana Academy of Science, October 31, 1997.

“Insights into the Native American Practice of Smudging Plants” Megan L. Hamilton* and Bryan A. Hanson, Butler Undergraduate Research Conference, April 11, 1997.

“A Linear Free Energy/Mass Spectroscopy Experiment for the Organic Lab” Rebecca A. Achterhof* and Bryan A. Hanson, Butler Undergraduate Research Conference, April 11, 1997.

“How to Catch the Scent of an Orchid” Sara E. Peters*, Valerie K. Turan, Michael A. Homoya and Bryan A. Hanson, Indiana Academy of Science, November 8, 1996.

“The Scent of an Orchid” Valerie K. Turan*, Sara E. Peters, Michael A. Homoya and Bryan A. Hanson, Indiana Academy of Science, November 8, 1996.

“Native American Smudging: GC–MS Investigation of Smudged Medicinal Plants” Brian E. Hulsebus* and Bryan A. Hanson, Butler University Undergraduate Research Conference, April 12, 1996.

“Investigations into Medicinal Plants Native to Indiana” Jennifer Emley* and Bryan A. Hanson, Butler University Undergraduate Research Conference, April 7, 1995.

“Computational Investigation of DNA Base Pair Analogs” Cassandra L. Martien* and Bryan A. Hanson, Butler University Undergraduate Research Conference, April 19, 1991.

“Inverse Electron Demand Diels–Alder Reactions of Imidazoles” Scott Osborne* and Bryan Hanson, Butler University Undergraduate Research Conference, April 20, 1990.

“Molecular Mechanics Investigation of Novel DNA Structures” Kristina Thomas* and Bryan Hanson, Butler University Undergraduate Research Conference, April 20, 1990.

“Molecular Mechanics Investigation of Enforced Base Pair Mismatches in DNA – Preliminary Results” K. E. Garrett* and B. A. Hanson, Twenty–first Central Regional Meeting, American Chemical Society, Cleveland, OH, May 31–June 2, 1989, Abstract 161.

“The Effect of Covalent Cross–Linking on DNA Conformation – A Molecular Mechanics Study” Katherine E. Garrett* and Bryan A. Hanson, Butler University Undergraduate Research Conference, April 21, 1989.

Students & Senior Theses Supervised:

John A. Rigdon '87 Thesis: “A Novel Method for the Synthesis of Alpha-Keto Acids and Esters”	M.S. Chemistry - Eastern Illinois Assistant Quality Control Officer ATEC Associates (water treatment company)
Gregg R. Dieckmann '88 Thesis:	Ph.D. - University of Michigan Professor of Chemistry, University of Texas
Jennifer Turner Stanek '88 Thesis: “Preliminary Studies on the Synthesis of a Novel Enzyme Inhibitor”	Director, Pharmacia
Katherine E. Garrett '89 Thesis: “Structural Effects of the Substitution of Four Covalent Cross Sections into the B-DNA Dodecamer CGCGAATTCGCG”	M.S. - University of Michigan Currently owns her own science supplies business

Scott E. Osborne '90	Ph.D. - University of Michigan Proctor and Gamble
Kristina L. Thomas Trinkle '90 Thesis: "Analysis of the Structural Effects of Substitution of Covalent Cross Sections into the B-DNA Dodecamer CGCGAATTCGCG"	Chemical Information Specialist Lilly Laboratories
Belinda Michelle Howe Pereira '91	Great Lakes Chemical Company
Cassandra Lynn Martien Coffey '92 Thesis: "Computational Investigation of Novel DNA Mismatched Base Pair Analogs"	Ph.D. – University of Wisconsin
Mary Joyce Reilly Kaufmann '93	Physician, Case Western Reserve
Michael J. Lalich '94	Physician, University of Michigan
Christine Martin Cleveland '94	Analytical Chemist, Lilly Laboratories
Johari Miller '94 Thesis: "Investigating Correlations of Structural Parameters in B-DNA by Factor Analysis and Other Methods"	Physician, West Lafayette Indiana
Richard Pilston '95 Thesis: "Investigations into the Synthesis of Suicide Inhibitors: The Development of a Novel Protecting Group for Hydroxylamine"	Ph.D - Carnegie Mellon Managing Director, Plexus Consulting
M. Jennifer Emley '96	Environmental Scientist, SIECO Inc.
Andy Fraley '96	Ph.D. - Boston College
Carla Goodnight '97	
Rebecca Achterhof '98	Physician
Megan Hamilton Hartzell '98	Physician
Lindsay Honholt '98	
Brian Eugene Hulsebus '98	M.S. Chemistry - University of Michigan

Sara Elizabeth Peters Luckhaupt '98	Account Representative, Fisher Scientific Physician
Valerie Turan Politano '98 Thesis: "Biologically Active Components of <i>Asarum canadense</i> Rhizomes"	
Teri Kruezman '99	Physician
Clint Sheets '99 Thesis: "Investigations in Smudging"	Physician
Dawn Marie Ahlgren Chapman '00 Thesis: "Optimizing Smudging Experiments"	Ph.D. – University of California at Davis Sensory Scientist, The National Food Laboratory
Betsy Hambidge Seitz '00	High School Teacher Central Gwinett High School
Sarah Batterton '02	Medical Student
Tyler Green '02	Medical Student
Justin McNabney '02	MS – Stanford University– Educational Policy
Kyle Danforth '05	Assistant Director of Winter Term, DePauw University
Peter Hogg '05	Medical Student
Ashley Paschal '06	Dental Student, Temple University
Jessica Boyer '08	Dental Student, Indiana University

Grants and Fellowships:

Senior Personnel with Prof. Wade Hazel on NSF Proposal No: 0217028 Theoretical and Empirical Studies of a Conditional Strategy: Environmentally Cued Pupal Color in Swallowtail Butterflies. 2003-2005.

Percy L. Julian Professor of Chemistry, Fall 2001 to June 2006.

Summer Stipend for Course Renewal: "Chemistry 120: Structure and Properties of Organic Molecules" \$2,500 Faculty Development Committee, DePauw University, May 2001.

“Geographic and Genetic Variation in Chemical Defenses of Yellow Stonecrop and Apollo Butterflies” Joint project with Dana Garrigan \$3,000 Faculty Development Committee, DePauw University, May 1999.

“A Glimpse into 19th Century Indiana Medicine: The Prescribing Habits of Dr. William D. Hutchings, 1876-1903.” \$1,500 Indiana Historical Society, March 1999 (Co-principal investigator).

“Sedum vs. Parnasius” Joint project with Dana Garrigan, \$843.81, Faculty Development Committee, DePauw University, October 1998.

“Chemical Ecology of Indiana's Orchids” \$741.50 Indiana Academy of Science, 1996.

“Chemical Ecology of Indiana’s Orchids” \$333.20 DePauw Faculty Development Committee, 1996.

“Separations and Structure Throughout the Chemistry Curriculum” \$27,816 NSF ILI Program, 1995 (Co-Principal Investigator)

“Instructional Excellence: FT-NMR Across the Curriculum” \$90,000 William M. Keck Foundation, 1990 (Principal Investigator).

Summer Research Fellowship, \$4,000 Petroleum Research Fund, Sponsored by Professor Ken Lipkowitz, IUPUI, Summer 1990.

“Course Renewal: Organic Chemistry, Biochemistry and Spectroscopy” \$2,500, Faculty Development Committee, DePauw University

Conferences Attended:

50th Annual Meeting of the Society for Economic Botany, May 31- June 4, 2009, College of Charleston.

49th Annual Meeting of the Society for Economic Botany, June 1-5, 2008, Duke University.

Realizing Nature’s Potential: The Once and Future King of Drug Discovery, Missouri Botanical Garden, November 10-11, 2006.

Structural Bioinformatics Workshop, DePauw University, January 11-14, 2005. Local Organizer.

International Congress on Natural Products Research, Phoenix, AZ, July 31-August 4, 2004 (45th Annual Meeting of the American Society of Pharmacognosy).

Hands-on Teaching of Bioinformatics, Midwest Instructional Technology Center, Hope College MI, May 13-15 2004.

44th Annual Meeting, American Society of Pharmacognosy, Chapel Hill NC, July 12-16, 2003.

National Organic Symposium, Bloomington IN June 8-12th, 2003.

225th National American Chemical Society Meeting, New Orleans, March 2003.

Indiana Genomics Proteomics Symposium, Indianapolis IN November 15, 2002.

42nd Annual Meeting of the American Society of Pharmacognosy, Oaxaca, Mexico, July 14-18, 2001.

Midwest Association of Chemistry Teachers in Liberal Arts Colleges (MACTLAC), Upland Indiana, October 20-21, 2000.

Eighth National Conference of the Council on Undergraduate Research, Wooster OH, June 2-24, 2000.

Thirty-Sixth National Organic Symposium, American Chemical Society, Organic Division, Madison, WI, June 13-17, 1999.

217th American Chemical Society National Meeting, Anaheim, CA, March 21-25, 1999"

Indiana Academy of Science, 114th Annual Meeting, Indianapolis, IN, October 30, 1998 (also October 31, 1997; November 8, 1996; November 3, 1995).

Thirty-fifth National Organic Symposium, American Chemical Society, Organic Division, San Antonio, TX, June 22-26, 1997

Butler University Undergraduate Research Conference, April 11, 1997 (also April 12, 1996; April 7, 1995; April 19, 1991; April 20, 1990; April 21, 1989)

Thirty-fourth National Organic Symposium, American Chemical Society, Organic Division, Williamsburg, VA, June 11-15, 1995

Thirty-Third National Organic Chemistry Symposium, American Chemical Society, Organic Division, Bozeman, MT, June 13-17, 1993.

High Performance Computing and Grand Challenges in Structural Biology, Florida State University, Tallahassee, FL, January 24-27, 1992.

Thirty-Second National Organic Chemistry Symposium, American Chemical Society, Organic Division, Minneapolis, MN, June 16-20, 1991.

1991 Joint Central - Great Lakes Regional Meeting, American Chemical Society, Indianapolis, IN, May 29-31, 1991.

Twenty–first Central Regional Meeting, American Chemical Society, Cleveland, OH, May 31–June 2, 1989.

Science Education at the Crossroads, Indiana Academy of Science, December 3, 1988.

Third Chemical Congress of North America, June 5–10, 1988.

Fourty–First Northwest Regional Meeting, American Chemical Society, June 16–18, 1986.

Workshops & Courses:

Taxonomy of California Plants (Bio 531), San Diego State University, Spring 2008. Part of sabbatical.

NSF Day, Butler University, October 5th 2007 (overview of NSF programs).

Tropical Dendrology (offered by The Tropical Science Center) June 25 – July 7th 2007. Various locations in Costa Rica. Funded by DePauw’s Faculty Development Committee

Presenting Data and Information (The Tufte Course), October 5th 2006. Indianapolis, IN. Funded by DePauw’s Faculty Development Committee.

Wetland Flora (plant identification workshop) Institute for Botanical Training, June 6-9, 2006. Indianapolis, IN. Funded by DePauw’s Faculty Development Committee.

Midwest Upland Flora (plant identification workshop) Institute for Botanical Training, May 16-19, 2006. Indianapolis, IN. Funded by DePauw’s Faculty Development Committee.

Toxicology: Principles and Practice, presented by the American Chemical Society, December 5-6, 2000, Washington DC. Funded by DePauw’s Faculty Development Committee.

Chemical Mechanisms in Toxicology, presented by the American Chemical Society, December 7-8, 2000, Washington DC. Funded by DePauw’s Faculty Development Committee.

Pharmacology for Chemists, presented by the American Chemical Society, March 21–23, 1996, New Orleans, LA. Funded by DePauw’s Faculty Development Committee.

Professional memberships:

Americal Botanical Council
American Chemical Society
American Society for Pharmacognosy
Indiana Section, American Chemical Society
Indiana Native Plant and Wildflower Society
Society for Economic Botany

Miscellaneous:

Reviewer, *Economic Botany*, 2009 –

Chair, Chemistry Section, Indiana Academy of Science, 1996, 1998

Vice-Chair, Chemistry Section, Indiana Academy of Science, 1995, 1997

Presiding Officer, Division of Organic Chemistry, Indianapolis American Chemical Society Meeting, May 1991

Reviewer, *Biochemistry* 1991–1998

Reviewer, Petroleum Research Foundation, 1992, 1997

Review Panelist, National Science Foundation Instrumentation for Laboratory Improvement Program, Washington D.C., February 1993, January 1994, January 1997.

Review Panelist, National Science Foundation Major Research Instrumentation, Washington D.C., May 2001.

Teaching Activities

On Sabbatical, May 2007 to August 2008 (Project: Plant Metabolomics)
On Sabbatical, May 2000 to January 2001 (Project: *Understanding Medicinal Plants*)
On Sabbatical, May 1994 to January 1995 (Project: Medicinal Plants of Indiana)

Courses taught:

Principles of Chemistry I, II	Intro. to Organic Chemistry
Intermediate Organic Chemistry	Biochemistry
Spectroscopy	Modern NMR Methods
Medicinal Plants for Poets	Medicinal Plants
Structure and Properties of Organic Molecules	
Organic Mechanisms and Reactions	
Metabolism	
Structure & Function of Biomolecules	
Enzyme Mechanisms	
Stoichiometric Calculations	

Winter Term courses offered:

Molecular Modeling
Biomolecular Recognition
Programming Applications
Internship sponsor, multiple years
WT Core
Medicinal Plants and Tropical Ecology (trip to Peruvian Amazon)
Medicinal Plants and Traditional Healing in Costa Rica (offered twice)

Adjunct Faculty, Natural Products Chemistry for the Budding Ethnobiologist (part of the Organization for Tropical Studies Ethnobiology Course). Las Cruces Biological Research Station/Wilson Botanical Gardens, Costa Rica. July, 2004; July 2005, July 2006, July 2007.

Options instructor: 1987, 1989, 1991–1995

W and Q certified

Developed new biochemistry course with laboratory (1986–1988)

Supervise student research during the academic year, winter term and summer

Honorable Mention, Outstanding Professor Award, 1991

Special Recognition, Senior Gift Drive, May 2000

University and Department Service

Goldwater Scholarship Representative 2003 – 2007

Member, Petitions Committee August 2006 – May 2007, August 2008 - May 2009

Member, Biochemistry Steering Committee, creation through December 2006; Spring 2009

Handbook Revision Task Force, 2002 – 2005

Chair, Dept. of Chemistry, 1 January 2001 – 30 June 2006
Academic Computing Advisory Committee, 1986–1991
 Chair, Fall 1989–Spring 1991
Faculty Development Committee, Fall 1991– Spring 1994, Fall 1996–Spring 1999
 Chair, 1997–1999, 1993–1994
Resource Allocation Subcommittee ??–1999
Library Advisory Committee (ad hoc to the Provost, 1991–1994)
Library Automation Study Committees (assorted)
Search Committees: Library Director, Science Librarian, Hughes Molecular Biology Fellow,
 Botany (1998), Spanish (2000), Molecular Biology (2002), Microbial & Molecular Biology
 (2003)
Board of Visitors Panelist, 1991
Student Marshall, 1990–1994
Options Instructor: 1987, 1989, 1991–1995
Organizer, Burkett Lecture Series 1994 – present
Organizer, Chemistry Department Seminar Series 2003 – present
Instrument Maintenance Technician for IR, NMR, GC-MS instruments
Science Fair Judge, West Central Regional Science Fair, March 2004

Guest Lecturer:

 “A Perspective on Medicinal Plants in Developing Cultures” for Jon Macy’s Public Health
 Class, Nov. 1999
 “Amazonian Ethnomedicine” for Lakshmi Fjord’s Health, Medicine and Culture class,
 Nov. 2000 and Nov. 2001

Significant Posts Outside the University

President, Greencastle Plan Commission (January 2002 – January 2007)