Michael Courlander
Public Affairs Officer
U.S. Sentencing Commission

Re: Sentencing guidelines for methylenedioxymethamphetamine (MDMA)

Dear Mr. Courlander:

I received word today that the Commission proposes to equate 1 g of MDMA, MDA, and MDEA to 1 kg of marijuana, rather than 35 g, 50 g and 30 g of marijuana, respectively. I also understand that 1 gram of mescaline is presently equated to 10 grams of marijuana, 1 gram of powder cocaine equated to 200 g of marijuana, and 1 gram of methamphetamine to 2 kg of marijuana.

One basis for this reconsideration is the assertion that ecstasy... is similar in its hallucinogenic effect on the user to mescaline. This statement is simply incorrect. Extensive literature published on this subject, some of it from my own laboratory and listed later, clearly shows that MDMA is in no way comparable to mescaline in its effect. MDMA does not act by the same pharmacological mechanism as does mescaline, nor does it have the ability to produce the profound sensory disruptions and hallucinations that are characteristic of mescaline. Similarly, while high doses of mescaline can provoke psychosis in labile individuals, there is no evidence that MDMA has similar potential. Whereas MDMA does have a stimulant effect, it is approximately only one-tenth that of methamphetamine, based on human dosage.

Based on reported human dosages I estimate that MDMA has roughly twice the psychoactive potency by weight of mescaline. Thus, based on human dosage, the equivalency for one gram of MDMA should then be equal to 20 g of marijuana.

MDMA has only about 1/25th (doses: 5 mg heroin vs 125 mg MDMA) the potency of heroin. There is no basis either through potency considerations or through risk assessment to equate the harm of one gram of MDMA with one gram of heroin.

In my professional opinion, based on my own 25 years of research into the action of psychoactive drugs of abuse, and extensive reading of the literature, one gram of MDMA can in no way be equated to one gram of heroin, either based on dosage, or upon the degree of harm that can result from use of these two very different substances. Heroin is highly addictive, and in overdose leads directly to death; MDMA is not. The degree of toxicity of heroin and MDMA is not comparable by any standard. Heroin is used by intravenous injection, accompanied by risks of infection with a variety of microorganisms and viruses, whereas MDMA is taken orally with none of those risks. One gram of pure heroin would be a sufficient quantity to lead to overdose death in perhaps as many as 20 drug-naïve individuals, whereas one gram of MDMA taken orally might be sufficient to cause fatality of one drug-naïve person.
Whereas I do understand the concern regarding large numbers of adolescents who are apparently abusing ecstasy, and support reasonable attempts to discourage this use, I am adamantly opposed to regulations that are not based on facts or science. If the guidelines are to be arbitrary, and based on political whims, then the sentencing commission should so state, but should not attempt to justify the guidelines by misrepresentation of the facts or the science so as to create the public impression that the dangers of MDMA are actually comparable to those of heroin when they demonstrably are not. That is, there is absolutely no medical or scientific basis upon which to support guidelines that would purport to equate one gram of MDMA with one gram of heroin.

Sincerely,

David E. Nichols, Ph.D.
Professor of Medicinal Chemistry
And Molecular Pharmacology

Relevant Scientific Literature Published by My Laboratory.


CURRICULUM VITAE

Name and Title: David Earl Nichols
Professor of Medicinal Chemistry and
Professor of Pharmacology.

Addresses:

Home
4740 North 225 West
W. Lafayette, Indiana 47906
Phone: 765-497-2320

Office
Department of Medicinal Chemistry and Molecular Pharmacology
School of Pharmacy and Pharmacal Sciences
Purdue University
West Lafayette, Indiana 47907
Phone: (765)-494-1461; FAX (765)-494-1414
email: drdave@pharmacy.purdue.edu

Birthplace and Date: December 23, 1944, Covington, Kentucky

Degrees Held: B.S. Chemistry, University of Cincinnati, 1969
Ph.D. Medicinal Chemistry, University of Iowa, 1973
Postdoctoral Fellow, Pharmacology, Univ. of Iowa 1973, 1974

Appointments:

Founder and Co-chair, Scientific Advisory Board, DarPharma, Inc.
Interim Head, Dept. of Medicinal Chemistry and Molecular Pharmacology, 7/1/96-10/1/96
Interim Head, Depts. of Medicinal Chemistry and Pharmacognosy, and Pharmacology and Toxicology, 7/1/95-6/30/96
Interim Head, Dept. of Medicinal Chemistry and Pharmacognosy 9/1/94-6/30/95
President, Heffter Research Institute, Inc., 1993-present
Professor of Pharmacology
Purdue University 1985-present
Professor of Medicinal Chemistry,
Purdue University 1984-present
Associate Professor of Medicinal Chemistry,
Purdue University 1979-1984
Assistant Professor of Medicinal Chemistry,
Purdue University 1974-1979
Teaching Assistant, 1972, University of Iowa
NDEA IV Fellow, 1969-1972, University of Iowa
Memberships:

Sigma Xi Scientific Honorary
Phi Lambda Upsilon Chemistry Honorary
Rho Chi Pharmacy Honorary
American Chemical Society
Division of Medicinal Chemistry, ACS
American Association for the Advancement of Science
American Association of Pharmaceutical Scientists
Kappa Psi (Pharmacy fraternity)
Society for Neuroscience
American Society for Pharmacology and Experimental Therapeutics
Purdue University Neuroscience Program
American College of Neuropsychopharmacology, elected to membership 1996

Awards or Honors:

NDEA IV Predoctoral Fellow
Henry Heine Best Teacher Award, School of Pharmacy and Pharmacal Sciences, Purdue University 1981.
Fellow, Academy of Pharmaceutical Sciences, 1985
Fellow, American Association of Pharmaceutical Scientists
Keynote speaker, Annual MIKI Graduate Student Meeting, Iowa City, March 30, 1996

Refereed Publications:


\[42\]


Publications Submitted or "In Press":


**Book Chapters and Monographs**


**Published Symposium Proceedings**


U.S. Patents:


Letters to the Editor


Abstracts
1. C.F. Barfknecht, D.E. Nichols, B. Olesen and J.A. Engelbrecht, "Analog of Psychotomimetic Phenylisopropylamines: 2-Amino-5,8-dimethoxy-1,2,3,4-tetrahydro-
5. J.D. Kohli, D.E. Nichols, P.H. Volkman and L.I. Goldberg, "Action of 2-Amino-6,7-
Disubstituted analogs of Dopamine and 2-Amino-6,7-dihydroxy-tetralin", 7th Int.
8. H.Y. Meitzler, M. Simonovic, D.E. Nichols, R.J. Miller, J. McDermed and V.S. Fang,
"Relative Potencies of Dopamine Agonists on Prolactin Secretion in Rats", IV Int.
9. J.Z. Ginos, J. Stevens and D.E. Nichols, "N-Substituted Dopamine and 2-Amino-6,7-
dihydroxy-1,2,3,4-tetrahydronaphthalene Analogs: Behavioral Effects in Mice", Division of Medicinal Chemistry, ACS/CSJ Chemical Congress, Honolulu, Hawaii, April 1979.


22. L.L. Truex, M.M. Foreman, R.M. Riggs, and D.E. Nichols, "Effects of Modification of the 4-(3,4-dihydroxyphenyl)-1,2,3,4-Tetrahydroisoquinoline Structure on Dopamine Sensitive Rat Retinal Adenylate Cyclase Activity." 15th Annual Meeting of the Society for Neuroscience, Dallas, TX, October 1985. Abs. 315.16.


110. E.G. Arrington, B.L. Blake, D.E. Nichols, R.B. Mailman and C.P. Lawler, “Functional selectivity of dihydrexidine at dopamine D₂ receptors is not predicted by binding to the high affinity receptor state or stimulation of GTPγS binding.” Society for Neuroscience, Miami, FL, October 1999.


Invited Seminars:

- "Probing the Hallucinogen Receptor", Indiana University School of Medicine, Northwest Cancer for Medical Education, Gary, IN, March 24, 1977.
- "Progress in Understanding Hallucinogens", Center in Toxicology, Vanderbilt University School of Medicine, Nashville, TN, July 14, 1978.
- "Chemical Probes of Hallucinogen Receptors", Dept. of Biological Sciences, Chicago State University, Chicago, IL, October 16, 1980.
- "Chemical Probes of the Hallucinogen Receptor(s)", Dept. of Chemistry, IUPUI, Indianapolis, IN, January 12, 1981.
- "Hallucinogens", Department of Pharmacology, University of Toronto, Toronto, Canada, August 16, 1984.
- "Use of Hallucinogen Analogs to Study Serotonin Receptors", Eli Lilly and Co., Indianapolis, IN, November 19, 1984.
- "Research and Social Impact of LSD", 360 House, Sponsored by Alcohol Issues Committee, Purdue University, West Lafayette, IN, November 20, 1984.
• "Mechanism of Action of MDMA ('Ecstasy') and Related Compounds," Dept. of Psychiatry, University of New Mexico School of Medicine, Albuquerque, NM, July 21, 1989.

• "The Design of Novel Molecules With Selective Dopamine \( D_1 \) Agonist Action," Northeast Wisconsin ACS Section, February 14, 1990.

• "Design and Synthesis of Novel Dopamine \( D_1 \) Agonists," College of Pharmacy, University of Toledo, March 6, 1990.

• "Design of Novel Molecules With Selective Dopamine \( D_1 \) Agonist Activity," Upjohn Pharmaceuticals, Kalamazoo, MI, January 15, 1991.

• "Hallucinogens: What Are They and How Do They Work?" Olivet Nazarene College, Kankakee, IL, January 30, 1991.


• "Design of Novel Molecules With Selective Dopamine \( D_1 \) Agonist Activity," College of Pharmacy, University of Cincinnati, February 28, 1991.


• "Medicinal Chemistry of Hallucinogenic Agents," School of Pharmacy, University of North Carolina, Chapel Hill, NC, September 9, 1991.

• "The Development of Dihydrexidine, a Novel Full-Efficacy Dopamine \( D_1 \) Agonist," College of Pharmacy, University of Tennessee, Memphis, TN, December 12, 1991.

• "The Development of Novel Dopamine Agonists," School of Pharmacy, University of Illinois at Chicago, February 26, 1993.

• "Medicinal Chemistry and Pharmacology of Serotonin Releasing Agents," Department of Pharmacology, University of Pennsylvania Medical School, April 29, 1993.

• "Design of Novel Serotonin Releasing Agents," School of Pharmacy, University Of North Carolina, Chapel Hill, NC, June 11, 1993.

• "Non Neurotoxic Selective Serotonin-Releasing Agents," Dept of Pharmaceutical Sciences, College of Pharmacy, Wayne State University, Detroit MI, September 15, 1993.


• "Graduate Studies in Medicinal Chemistry in the U.S.A.," Faculty of Pharmaceutical Science, Khon Kaen University, Thailand, March 14, 1994.

• "Dihydrexidine and other Benzo[a]phenanthridines: important new dopamine receptor agonists," Faculty of Pharmaceutical Science, Chulalongkorn University, Bangkok, Thailand, March 15, 1994.

• "Design of Novel Serotonin Releasing Drugs," Faculty of Pharmaceutical Science, Mahidol University, Bangkok, Thailand, March 16, 1994.

• "The Development of Novel Dopamine \( D_1 \) Agonists, Dept of Pharmacology and Toxicology," Purdue University, March 29, 1995.

• “Designing Novel Dopamine D₁ Agonist molecules: potential therapy for late stage Parkinson's Disease,” Keynote Address, Annual MIKI Graduate Student Meeting, University of Iowa, March 30, 1996.


• “The Design and Development of Novel Dopamine D₁ Agonists,” Northwestern Drug Discovery Program, Chicago, IL, September 11, 1996.


• Serotonin Releasing Agents,” Southern Summer School in Neuroscience, Punta del Este, Uruguay, March 22, 1997.


• “Continuing Studies of the Structure-Activity Relationships of Hallucinogenic Agents,” Dept. of Behavioral Neuroscience, Oregon Health Sciences University, April 17, 1998.

• “From Eleusis to PET scans: the mysteries of psychedelics,” Serotonin Club Dinner, Society for Neuroscience meeting, Los Angeles, November 10, 1998.


• “Psychedelics: Historical perspectives and structure-activity studies,” Brookhaven National Laboratory, Long Island, NY, May 4, 2000

• “MDMA (Ecstasy): Mechanism of Action and Studies of its Neurotoxic Effects,” Chairman’s Grand Rounds, Wayne State School of Medicine, Detroit, MI, May 31, 2000

• “Psychedelics: Historical perspectives and structure-activity studies,” University of Kentucky, College of Medicine, October 9, 2000.

Invited Speaker at National or International Symposia


"The Development of Novel Dopamine Agonists", Symposium on dopamine receptors, 184th National meeting of the American Chemical Society, September 14, 1982.

"Behavioral Techniques in the Study of Neuroreceptors", Minisymposium on Neuroreceptors, Indiana Univ. School of Medicine, Terre Haute Center for Medical Education, Terre Haute, Ind. September 25, 1982.

"Use of Chemical Approaches to Probe the Serotonin Receptor Topography", VIIIth International Symposium on Medicinal Chemistry, Uppsala, Sweden, August 30, 1984.


"Contemporary Approaches to Drug Development: Bridging the Gap," Invited Participant in joint Indo-U.S. Workshop on Traditional Medicine, Bangalore, India, October 13-17, 1996, sponsored by NIMH.


Research Interests:

- Structure-activity relationships of centrally active drugs; drug design
- The use of rigid analogs to probe neurotransmitter receptors
- Development of pharmacological tools to study CNS function
- Structure-activity relationships of dopaminergic agents
- The structures of G protein-coupled receptors
- Development of novel psychoactive agents
- Hallucinogens/Psychedelics

Research Grants/Contracts Funded: D.E. Nichols, Principal Investigator

- Synthesis of Allyl Benzene Derivatives as Potential Tumor Growth Inhibitors, 1/1/75-12/31/77, $5,920, Indiana Elks.
- Synthesis of Dopaminergic Agents, 6/1/76-7/31/77, $2959, University of Chicago.
- Biomedical Research Support Grants, 4/1/76-3/31/83, $20,000.
- Haptens to Produce Active Immunity Against Potential Endogenous Psychotogens, 2 years, 9/1/78-8/31/80, $8940, Purdue University, David Ross Grant.
- Rotameric Modes of Binding at Serotonin Receptors, 2 years, 4/1/82-3/31/84, $13,200, Purdue University, David Ross Grant.
- 2-Amino-3,4-Dihydroquinazolines as Dopamine Agonists, 4/1/79-5/31/81, total direct costs $50,061 for two years, Total costs $74,524, USPHS.
- 2-Amino-3,4-Dihydroquinazolines as Dopamine Agonists, supplemental request, 4/1/81-5/31/81, $3552 total direct costs, USPHS.
- Hallucinogen Analogues: 1,2-Dihydro-2-Naphthylamines, 6/1/78-5/31/81, Total direct costs $95,100 for three years, Total costs $141,808, USPHS.
- Synthesis of Isotryptamines and Related Compounds as Potential Dopamine Agonists, 6/1/80-5/31/88, co-p.i. with J.M. Cassady, Total direct costs $174,156 for eight years, Total costs $231,886, Eli Lilly and Co.
- Conformational Analysis of Biological Molecules, 1/1/79-12/31/81, H.J.R. Weintraub, p.i., 5% effort, Total costs $101,978 for three years.
- Predoctoral Training in Chemical Pharmacology, 7/1/80-6/30/85, R.P. Maickel, p.i., 2% effort, $307,008 direct costs for the three year period 7/1/81- 6/30/84, USPHS.
- N-(2-chloroethyl)-norLSD, a Potential New Neurotoxin for Mapping Neurotransmitter Receptor Distribution and Function, 4/1/85-3/31/87, $13,200, Purdue University, David Ross Grant.
- Development of Selective Dopamine D-1 Agonists and Antagonists, 1/1/88-12/31/88, one year direct costs $45,086, Total costs $59,291, Eli Lilly and Co.
- Development of Selective Dopamine D-1 Agonists and Antagonists, 2/15/89-5/31/89, Total costs $15,000, Eli Lillyand Co.
- Development of a Functional Correlation between Phosphoinositide Turnover and Affinity for the Serotonin 5-HT2 Receptor, 4/1/88-3/31/90, $15,960, Purdue University, David Ross Grant.
- Structure-Activity Studies of MDMA-Like Substances, 8/1/88-8/31/95, $673,473 Total direct costs for six years, Total costs $997,071, USPHS.
- ADAMHA Small Instrumentation Grant, $5,000, 1989.
- Research on Psychoactive Compounds, 1/1/93-12/31/93, Total cost $57,841, Neurobiological Technologies, Inc.
- Tryptamine Hallucinogens-Human Neuropsychopharmacology, Subcontract to the University of New Mexico (P.I. Dr. Rick Strassman) 3/1/93-2/28/94 Total costs $24,205, USPHS.
- Stereochemical Aspects of Hallucinogenesis, 8/1/79-5/31/99, Total direct costs $1,092,704 for eighteen years, Total costs $1,560,217 USPHS.
- Basic Research in Dopamine Drug Discovery, (R.B. Mailman, PI), 1/1/95-12/31/95, Total direct costs $47,455, Hoechst Roussel Pharmaceuticals, Inc.
- Development of Potentially Selective Dopamine Agonists, 4/1/84-3/31/96, $947,372 total direct costs for twelve years, Total costs $1,359,221, USPHS.
- BMS/UNC/Purdue Research Collaboration, 12/15/97-9/4/99, $252,320 2 year total costs, Bristol-Myers Squibb Company.
- **Active.** Novel Serotonin Releasing Agents, 9/30/95-8/31/00; $138,057 9th year direct costs, USPHS.
- **Active.** Stereochemical Aspects of Hallucinogenesis, 6/1/99-5/31/03, $186,959 19th year direct costs, USPHS.
- **Active.** Development of Potentially Selective Dopamine Agonists, 4/1/96-3/31/01, $130,215 15th year direct costs, USPHS.
- **Active.** Receptor Profiles of Lysergamides. 7/1/99-6/30/01, $27,000 direct costs, Heftter Research Institute.
- **Active.** Mapping the functional topography of the serotonin 2A receptor. 6/1/00-5/31/02, $25,292, Purdue Research Foundation Grant.
Service Related Functions:
Regional Science Fair Judge, 1975-present
Executive Committee Member, Student Science Training (SST) program, 1980
MARC Supervisor, 1982-1986, 1988-present
AAPS MNPC 1991 Program Committee
AAPS MNPC Fellows Selection Committee, 1992-1994
CIC.GE Predoctoral Fellowships Selection Committee 1996

Contract or Grant Review:
NIMH Extramural Contract Review Panel, July 8, 1980
Small Business Innovation Research Grant Program, ADAMHA Special Review Committee, November 14, 1984
Small Business Innovation Research Grant Program, PHS Special Review Committee, October 11, 1985
Grant Awards for Pharmacy Schools (GAPS) Peer Review Panel (Chmn.) March 7, 1986.
Small Business Innovation Research Grant Program, ADAMHA Special Review Committee, November 18, 1986.
Pharmacology Study Section, February 21, 1990 (Ad Hoc).
Reviewer, The Medical Research Council of New Zealand, 1990-
Neurological Sciences Study Section, Subcommittee 2, NIH, February 9, 1991 (Ad Hoc).
Neuropharmacology and Neurochemistry Review Committee, NIMH, Permanent Member February 1992-1995
NIDA Concept Review Panel, January 4, 1994
NIMH SBIR (MHSB) Review Panel, October 29-30, 1995
NIMH Psychotherapeutic Drug Discovery and Development Program Panel, Nov 11, 1995
Board of Scientific Counselors, ad hoc member, review of NIDDK Laboratory, May 1-2, 1996.
Neuropharmacology and Neurochemistry Review Committee, ad hoc reviewer, June 12, 1996.
Neuropharmacology and Neurochemistry Review Committee, ad hoc reviewer, June 27, 1997.
Consultancies and Advisory Functions:

Consultant, Marion Merrell Dow Pharmaceuticals, Cincinnati, OH, 1993.
Editorial Advisory Board, Drugs and the Pharmaceutical Sciences, Marcel Dekker, 1993-present.

Departmental Functions:

Department Space Resources Committee, 1976-1985
Graduate Student Advisory Committee, 1975-78, 1983-1985, 1997-
Graduate Student Admissions Committee, 1978-1994 (chmn 1980-1985), 1997-
Faculty Search Committee, Chairman, 1977 (Prof. Loudon)
Faculty Search Committee, 1979 (Prof. Weinkam)
Faculty Search Committee, 1981 (Prof. Geahlen)
Curriculum Committee, 1984-1989
Honors Program (MDCH 490) Coordinator, 1984
Editor, Alumni Newsletter, 1986-1994; 1996
Faculty Sponsor, Annual Graduate Student Meeting, 1977-83, 1988, 1989, 1997
Faculty Search Committee, Chairman, 1988 (Professor Davisson)
Executive Committee, 1993-
Faculty Search Committee, Mass Spectrometry, 1994-95
Faculty Search Committee, Neuropharmacology, 1995
Liaison Committee, Purdue Cancer Center, 1996
Liaison Committee, Purdue University Neuroscience Program, 1996-
PRF Grant Review Committee, 1996
Faculty Search Committee, Cancer Pharmacology and Neuropharmacology, 1997 (Dr. Barker)
Faculty Search Committee, Neuropharmacology, 1997 (Dr. Watts, Dr. Hockerman)
Committee to evaluate the Department Head, 1998
Faculty evaluator, Glenn L. Jenkins nominations 1998
Ad hoc committee to revise the Departmental Undergraduate Curriculum 1998-1999
MCMP Teaching Evaluation Committee, 1999
Faculty Search Committee, Chmn., 1999
Faculty Search Committee, 2000

School Functions:

Library Committee, 1976-77; 1977-78
Judge, Glenn L. Jenkins Award, 1978
Undergraduate Counselor, 1975-present
David Ross Grant Review Committee, 1975, 1980 (chmn), 1985
Grievance Committee, 1979 (chmn), 1987-88, 1998 (steering committee)
Recruitment and Retention of students, 1979-80
Grade Appeals Committee, 1979-81
Committee to Review David Ross evaluation procedures, 1981 (cmhn)
ACPE Accreditation (1985) Physical Facilities Committee (cmhn)
Curriculum Committee, 1984-1989; 1998-present
ACPE Accreditation (1992) Student Services Committee
School Executive Committee, 1994-1996
Committee to develop school standards for University Faculty Scholars 1998

University Functions:

Purdue Animal Care and Use Committee, 1988-1997
Purdue University Neuroscience Program, Liaison committee, 1995-present
Purdue University Neuroscience Program, Executive committee, 1996-present
Purdue University Reinvestment Program Reviewer, 1996

Teaching Responsibilities:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Lecture Type</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Fall Semester</th>
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<tr>
<td>MDCH 204-205</td>
<td>Organic Chemistry</td>
<td>3 Cr. Lecture</td>
<td>1 Cr. Lab</td>
<td>33-55%</td>
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<tr>
<td>PCTX 642</td>
<td>Neuropharmacology</td>
<td>3 Cr.</td>
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<td>1975-1976</td>
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<tr>
<td>MDCH 490</td>
<td>Introduction to Research</td>
<td>2 lectures</td>
<td></td>
<td>1975</td>
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<td>PSYCH 535</td>
<td>One lecture taught</td>
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<td>1995</td>
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<tr>
<td>MDCH 553</td>
<td>Intermediate Medicinal Chemistry</td>
<td>3 Cr.</td>
<td></td>
<td>1976-1994</td>
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<tr>
<td>MDCH 600</td>
<td>Advanced Medicinal Chemistry</td>
<td>1 Cr.</td>
<td></td>
<td>1977, 1979, 1981</td>
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<tr>
<td>MCMP 407</td>
<td>Medicinal Chemistry and Pharmacognosy I</td>
<td>3 Cr.</td>
<td></td>
<td>1978, 1979, 1980</td>
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<td>MCMP 408</td>
<td>Medicinal Chemistry and Pharmacognosy II</td>
<td>2 Cr.</td>
<td></td>
<td>1979</td>
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<tr>
<td>PHRM 401</td>
<td>Integrated Laboratory III</td>
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</table>

MDCH 204-205: Organic Chemistry, 3 Cr. Lecture, 1 Cr. Lab, 33-55% of lecture and labs; spring 1975-1978.


MDCH 490: Introduction to Research, variable credit, training undergraduates in research techniques; 100 students supervised 1975-present.


MDCH 553: Intermediate Medicinal Chemistry, 3 Cr., 33% taught each fall; 1976-1984; 1 Cr. taught 1985-1996.


MCMP 408: Medicinal Chemistry and Pharmacognosy II, 2 Cr., taught 30% of course spring 1979 - 1997, taught 37% in 1998 & course coordinator.


Teaching Related Talks and Publications:

Talks:


Laboratory Manual:

Laboratory Experiments, Medicinal Chemistry 204-205
John M. Cassady and David E. Nichols, 8th edition, 1975
John M. Cassady, Michael Crider and David E. Nichols, 9th, 10th editions, 1976, 1977

Course Development:

Reorganization of the laboratory portion of MDCH 204-205 in 1975 with the introduction of four new experiments:

a. Identification of Drugs by Elemental Analysis and Thin-Layer Chromatography, 3-week sequence
b. Synthesis of mefenesin
c. Preparation of estradiol
d. Preparation and properties of benzalkonium chloride

MDCH 600, Advanced Medicinal Chemistry. Titled: Principles of Drug Design, Designed and structured from "scratch" to cover a variety of contemporary methods used in drug design and to analyze structure-activity relationships. Restructured Spring 1990 and team-taught as a two credit-hour course titled "Chemical Pharmacology," to include pharmacokinetics, prodrugs, metabolism, and several contemporary topics in drug design, as a required course for graduate students receiving support from the Chemical Pharmacology Training Grant. In 1997 elements of this course were integrated into a new course, MCMP 570.

MCMP 570, Principles of Pharmacology. Participated in the development of this new course for the merged department, to provide a basic understanding of principles of drug action to new graduate students with diverse backgrounds. Taught six lectures on QSAR.

MCMP 407, Medicinal Chemistry and Pharmacology I: The nervous system. Participated in the design and development of this course, integrating both medicinal chemistry and pharmacology into a coherent one semester course that covers drugs affecting the central nervous system. First taught in the Fall 1999 semester.
Graduate Students Supervised:

Roy A. Buzdor, M.S. 1977
John E. Toth, M.S. 1977
Bruce A. Hathaway, Ph.D. 1980
John A. Groso, Ph.D. 1980
Ming C. Yeung, M.S. 1984
David H. Lloyd, Ph.D. 1985
Robert M. Riggs, Ph.D. 1986
Andrew J. Hoffman, Ph.D. 1987
Sumon Sakolchay, Ph.D. 1987
David A. Boyles, Ph.D. 1988
Robert Oberlender, Ph.D. 1989
W.K. Brewster, Ph.D. 1991
Michael P. Johnson, Ph.D. 1991 (PCTX)
Satish Kallam, M.S. 1991
Scott E. Snyder, Ph.D. 1993
Felix Aviles-Garay, M.S. 1993
Nicholas V. Cozzi, Ph.D. 1994 (co-major with faculty at U.Wisconsin)
Xue-Mei Huang, Ph.D. 1994 (PCTX)
Timm A. Knoerzer, Ph.D. 1994
Suwanna Vangveravong, Ph.D. 1994
Kitaw Negash, Ph.D. 1994
Jon E. Sprague, Ph.D. 1994 (PCTX)
Aaron P. Monte, Ph.D. 1995
Joseph B. Blair, Ph.D. 1997
Matthew A. Parker, Ph.D. 1998
Sunkyung Lee, Ph.D. 1998
Madina Gerasimov, M.S. 1998
Amjad Qandil, Ph.D. 1998
Russell Grubbs, Ph.D. 2000
Arthi Kanhasamy, Ph.D. 2000
Deborah Kurusch-Orbaugh, Ph.D. candidate
James Chambers, Ph.D. candidate
Uros Laban, Ph.D. candidate
Karla Cuevas-Licea, Ph.D. candidate
Jennifer Selken, Ph.D. candidate (PUN)
Tom McLean, Ph.D. candidate
Michael Whitesides, Ph.D. candidate

Postdoctorals, Sabbatical Fellows, and Visiting Professors:

Ralph Lagally, 1978-1979
Paresh J. Kothari, 1979-1981
James N. Jacob, 1979-1981
Kiran P. Jadhav, 1981-1982
Ratna Chakraborti, 1988-89
Zbigniew Bonza-Tomaszewski, 1989-1990
Danuta Marona-Lewicka, 1990-1994
Mary Troconis, 1991
David Klopotek, 1995
Eun-Sook Ma, 1996-1997
Martin Doll, 1996-1997
Gianfabio Giorgini, 1996-1997
Tim Sattelkau, 1998-1999
Douglas Armstrong 2000

Summer Minority Faculty Fellow:
John Emmett Simmons, 1990

Visiting Scholars:
Miguel Reyes, Montevideo, Uruguay, 1994
David Vonlanthen, Bern, Switzerland, 1995
Tommy Huijbers, Groningen, The Netherlands, 1997
Alejandra Gallardo, Fulbright Scholar, University of Chile, Santiago, 1999-2000.
Member of Thesis Advisory Committee:

Master's Degree:

F. W. Dekow G. P. Migliaccio D. Wainscott (PCTX)
S. Evans J. Koren (PCTX) A. Thomson (CHEM)
K-c. Lin S. P. Foltis Q. Bi (PCTX)
E. A. Kelly A. Vazquez C. Bissantz
H. S. Burhls T. Steele (PCTX) D. Jones
J. M. Fox J. Helfrich
D. Shimp L.V. Morales

Ph.D. Degree:

G. Jones J.-K. Chen E. Lee
R. Mata W. Conroy (PCTX) I. Lim
D. L. Darling D.A. Patrick S. Firestone
R. J. Clay H. Patel Q. Bi (PCTX)
B. N. Meyer M. Rieser Y.F. Yong (Chem)
W. Pfister (PCTX) R. Peoples (PCTX) E. Kogut (Chem)
D. R. Tocco (PCTX) M. Whitelaw (F&N) W.T. Johnson
D. P. McFadden (PCTX) C. Chan K. Hauer
P. Persons I. Jacobsen F. Tian
D. Foltis T. Steele (PCTX) A. Casimiro-Garcia
B. Meyer M. Patel (Chem) L. Rogers
S. Pummangura R. Peoples (PCTX) K. Hauer
F. M. Cretella M. Whitelaw (F&N) J. Mihalic
P. Toren C. Chan M. Micklatcher
M. P. Kolec M. N. Patel (PCTX) Brian Fox
M. Holsapple (PCTX) H.-S. Choi Hui Liu
D. S. S. Ng (PCTX) W. Ma D. Roman
P. Mohan G. Cauchon (PUB) G. Rodriguez
W.-C. Wong W. Corbett (Chem) T. Vortherms
J. Stimmel R. Menezes (Chem) J. Chen
J. P. Mayer C.-W. Yang (PCTX) A. Edsall
D. W. Kessler P. Sun (PCTX)
S. E. Klohr G. Pavlakovic (PCTX)