

January 20, 2020

CURRICULUM VITAE

NAME: Andrew Coop

TITLE: Professor
Associate Dean for Academic Affairs
Department of Pharmaceutical Sciences
University of Maryland School of Pharmacy
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Chief Scientific Officer and co-Founder
ALT Pharmaceuticals, LLC
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Baltimore, Maryland, 21201
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RESIDENCE STATUS: USA Permanent Resident

EDUCATION: B.A., M.A. St. Catherine's College,
University of Oxford,
Oxford, England, 1987-1991.
Thesis: *The Chemistry of Organolead Compounds*.
Supervisor: Dr. M. G. Moloney

Ph.D. School of Chemistry,
University of Bristol,
Bristol, England, 1991-1994.
Thesis: *Ring Constrained Analogues of Buprenorphine*.
Supervisor: Dr. J. W. Lewis.

PROFESSIONAL EXPERIENCE: 1994-1995 Postdoctoral Position:
School of Chemistry, University of Bristol,
Bristol, England.
Design of Delta Selective PET Ligands.

1995-1998 Fogarty Fellow:
Sponsor: Dr. K. C. Rice;
Laboratory of Medicinal Chemistry, NIDDK, NIH,
Bethesda, Maryland, USA.
Design and Synthesis of Delta Opioid Selective Ligands.

1999-2003 Assistant Professor:
Department of Pharmaceutical Sciences
University of Maryland School of Pharmacy
Baltimore, Maryland, USA.

2003-2008 Associate Professor:
Department of Pharmaceutical Sciences
University of Maryland School of Pharmacy
Baltimore, Maryland, USA.

ADMINISTRATIVE ROLES:	<p>2008- Professor: Department of Pharmaceutical Sciences University of Maryland School of Pharmacy Baltimore, Maryland, USA.</p> <p>2006-2007 Vice Chair of Academic Affairs: Department of Pharmaceutical Sciences University of Maryland School of Pharmacy Baltimore, Maryland, USA.</p> <p>2007-2015 Chair: Department of Pharmaceutical Sciences University of Maryland School of Pharmacy Baltimore, Maryland, USA.</p> <p>2016- Associate Dean for Academic Affairs: University of Maryland School of Pharmacy Baltimore, Maryland, USA.</p>
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TEACHING EXPERIENCE:

UNIVERSITY OF MARYLAND:

Postdoctoral Fellows

Dr. Dean Meada
 Dr. Amina Kausar
 Dr. Weibin Chen
 Dr. Huifang Wu
 Dr. Rohit Kolhatkar
 Dr. Sucheta Kudrimoti
 Dr. Padmavani Bezawada
 Dr. William Motel
 Dr. Imran Ansari

Graduate students

Marco Bennett
 Linn Thatcher
 Matthew Metcalf
 Christopher Cunningham
 Susan Mercer
 Trudy Smith
 Marilyn Matthews
 Lidiya Stavitskaya
 Jessica Harker (MS)
 Chad Johnson

Technicians

Abby Foster
 Xiaowen Yang

Undergraduate and high school students

Nick Zink
 Elizabeth Kenez
 Christopher Berry
 Maura O'Neill
 Megan Pierson
 Deepti Patel
 Sami Karkar
 Hannah Campbell

Graduate (MS)	2014-2019	REGS 614	Drug and Biologics Discovery (Course manager 2015 - 2016) (Module manager 2014 -)
Graduate (MS)	2019 - 2019	MCST602	PDA and Cannabis Pharmacology (Course manager 2019 -)
Graduate (MS)	2020 -	MCST603	Cannabis Chemistry & Drug Delivery (Course manager 2020 -) <i>(Course under development)</i>
Professional	2018-2019	PHMY 5008	Advanced Communication Strategies (Co-coursemanager 2018 -)
Professional	2020 -	PHMY 5023	Cannabis Pharmacology and Therapeutics (Course manager 2020 -)
Professional	2016-2019	PHAR 5019	Abilities Laboratory VI (Co-coursemanager 2016 - 2019)
Professional	2014-2019	PHAR 5001	Applied Science and Therapeutics 1
Professional	2014-2019	PHAR 5002	Applied Science and Therapeutics 2
Professional	2014-2018	PHAR 5000	General Patient Management
Professional	2011-2015	PHAR 568	Applied Pharmaceutical Sciences (Coursemanager 2011 - 2015)
Professional	2003-2010	PHAR 533	Medicinal Chemistry I (Coursemaster 2003 - 2009)
Professional	2004-2019	PHAR 543	Medicinal Chemistry II (Coursemaster 2004 - 2010)
Professional	2005-2009	PHAR 531	Pharmaceutical Chemistry
Professional	2000-2006	PHAR 516	Principles of Pharmacy Education
Professional	2000-2007	PHEX 559A	Research Elective (Coursemaster 2006 - 2007)
Professional	2000-2019	PHMY 539	Special Projects (Coursemaster 2006 - 2007)
Professional	1999-2011	PHMY 551	Recent Advances in Pharmacology and Toxicology
Professional	2003-2006	PHMY 526	High Impact Presentations
Professional	2000-2003	PHAR 513	Drug Chemistry (Coursemaster 2000 - 2003)
Professional	2001-2003	PHAR 536	Pharmacology II
Professional	1999-2003	PHAR 544	Medicinal Chemistry (Coursemaster 2000 - 2003)

Professional	1999-2005	PHAR 581	Senior Colloquium (Co-coursemaster 2002 - 2003)
Graduate (PhD)	1999-2019	PHAR 600	Principles of Drug Design and Development (Module manager 2001 - 2016)
Graduate (PhD)	2000-2006	PHAR 751	Drug Design
Graduate (PhD)	1999-2007	PHAR 628	Bioanalytical Methods (Co-coursemaster 1999)

EDUCATIONAL WORKSHOPS at UMB

The New Pharmacy Resident and Faculty Guide to Teaching, University of Maryland School of Pharmacy, Baltimore, 8/16/05.
Topic: Difficult Subjects made Palatable.

The New Pharmacy Resident and Faculty Guide to Teaching, University of Maryland School of Pharmacy, Baltimore, 8/23/06.
Topic: Time Management: Balancing Teaching with Life

The New Pharmacy Resident and Faculty Guide to Teaching, University of Maryland School of Pharmacy, Baltimore, 7/23/07.
Topic: Time Management: Balancing Teaching with Life

UNIVERSITY OF MARYLAND SERVICE

UNIVERSITY OF MARYLAND, BALTIMORE

Education, Accreditation and Assessment Committee (2018 -)
Accreditation Coordinating Team (2017 - 2019)
Advisory Committee for Expanding Resources for Faculty Teaching and Learning with Technology (2016 - 2018)
UMB Academic Affairs Advisory Committee (2016 - 2018)
Faculty Advisor: UMB Toastmasters (2014 -)
Campus Inquiry Committee (2013 - 2014)
"Responsible and Enduring Financial Model" Workgroup
University of Maryland Strategic Plan (2011)

UNIVERSITY OF MARYLAND GRADUATE SCHOOL, BALTIMORE

Chair: New Courses Committee, UMGSB Graduate Council (2006 - 07)
UMGSB Graduate Council (2005 - 2007)
New Courses Committee, UMGSB Graduate Council (2005 - 2006)
Chair: Graduate School Ad Hoc Grade Hearing Committee (2005)

SCHOOL OF PHARMACY

Chair: MS in Medical Cannabis Science and Therapeutics, Instructor Search Committee (2019 - 2020)
MS in Medical Cannabis Science and Therapeutics, Admissions Committee (2019 -)
MS in Medical Cannabis Science and Therapeutics, Steering Committee (2019 -)
Faculty Advisor: AAPS, Maryland Student Chapter (2018 - 2019)
Associate Dean for Academic Affairs (2016 -)
Chair: Curriculum Committee (2016 - 2018)
Co-Chair: Faculty Affairs Committee (2015 - 2016)
Administrative Board (2011 – 2015; 2016 -)
ACPE Self Study Steering Committee (2011 - 2012)

Executive Council (2007 – 2015; 2016 -)
Faculty Advisor: Phi Lambda Sigma (2013 - 2018)
Pharmacy Hall Addition Research Subcommittee (2007 - 2009)
Pharmacy Hall Addition Steering Committee (2007 - 2010)
Shady Grove Steering Committee (2007 - 2010)
Assistant Dean Search Committee (2007)
Curriculum Committee (*Ex-officio*) (2006 - 2007)
Faculty Retreat Program Planning Committee (2006)
Student Affairs Committee (2005 - 2009)
Faculty Advisor: Class of 2009 (2005 - 2009)
Strategic Committee on Program Delivery (2005 - 2006)
Recruitment, Admissions, Tracking Committee (2005 - 2006)
Faculty Affairs Committee (2004 - 2006)
ACPE Self Study Task Force for Accreditation (2004 - 2006)
Chair: ACPE Self Study Sub-committee for Students (2004 - 2006)
Staff Appreciation Committee (2003)
Chair: Student Affairs Committee (2002 - 2004)
Executive Council (2002 - 2004)
Admissions Sub-committee (2000 - 2002)
Faculty Advisor: Phi Delta Chi (2000 - 2006)

DEPARTMENT OF PHARMACEUTICAL SCIENCES (PSC)

Department Strategic Planning Group (2015)
Department Chair (2007 - 2015)
PSC Executive Committee (2007 - 2015)
Chair: Chemistry/Biochemistry Faculty Search Committee (2007)
Vice-Chair of Academic Affairs (2006 - 2007)
Faculty Search Committee (Chemistry, X-Ray Crystallography,
Proteomics, Molecular Pharmacology) (2005 - 2006)
Steering Committee on "PSC Faculty Needs and the Future of PSC
Research" (2005)
Pharmacology Faculty Search Committee (2004 - 2005)
Chair: Chemistry Faculty Search Committee (2001 - 2004)
Chair: Drug Design Research Focus Group (2001 - 2002)

AWARDS:

Maryland Chemist of the Year, **2019**
Fellow: American Association of Pharmaceutical Scientists (AAPS) **2016**
Fellow: College on Problems of Drug Dependence (CPDD) **2014**
James E. Wynn Memorial Award, American Association of Colleges of
Pharmacy (AACP), Chemistry Section, **2014**
Joseph Cochin Young Investigator Award, College on Problems of Drug
Dependence, **2003**.
Teacher of the Year, University of Maryland School of Pharmacy, **2001**.
Fogarty Fellowship (National Institutes of Health); April, **1995** -
December, **1998**.
Second and Third Year Organic Chemistry Practical Prize, **1990**, Dyson-
Perrins Laboratory, University of Oxford, Oxford, England

SERVICE TO NATIONAL ORGANIZATIONS:

Council of Sections Strategic Planning Committee, AACP (2019 -)
Nominations Committee, Graduate Education SIG, AACP (2019 -)
Volwiler Research Achievement Award Committee, AACP (2019 - 2020)
Chair: Nominations Committee, Chemistry Section, AACP (2018 - 2019)
Chair: New Investigator Awards Committee, Chemistry Section, AACP
(2018 - 2019)
Chair-elect, Chair, past-Chair of Chemistry Section, AACP (2016 - 2019)
Chair: Awards Committee, CPDD (2017 - 2020)
Chair: Programming Committee, Chemistry Section, AACP (2016 - 2017)

Awards Committee, CPDD (2015 - 2017)
Membership Strategic Oversight Committee, AAPS (2014 - 2016)
Industry, Academia, and Government Relations Committee, CPDD
(2014 - 2017)
Awards Committee, AACP Chemistry Section (2014 - 2015)
Rules and Regulations Committee, AACP (2013 - 2014)
Board of Directors, CPDD (2010 - 2014)
Credentials Committee, CPDD (2012 - 2015)
New Investigator Program/Award Grants Reviewer, AACP (2013-2015)
Member Survey Review Committee, Chemistry Section, AACP (2012-
2013)
Recruitment, Admissions, Pipeline Ad Hoc Committee, Graduate
Education Special Interest Group, AACP (2012-2013)
Publications Committee, AAPS (2008 - 2012)
Nominations Committee, CPDD (2011-2012; 2013-2014; 2015-2016;
2017-2018)
Secretary/Treasurer, DDD Section, AAPS (2007 - 2009)
Student and Post-Doc Outreach Committee, AAPS (2007)
Membership Committee, CPDD (2005 - 2008)
Electronic Communications Committee, CPDD (2002 - 2005)
Biological Coordinator: Drug Evaluation Committee, CPDD (2000 -
2007)

JOURNAL EDITORIAL BOARDS:

Drug and Alcohol Dependence (2017 -)
Drug Target Insights (2006 -)
Current Medicinal Chemistry - CNS Agents (2001 - 2003)
Mini-Reviews in Medicinal Chemistry (2001 - 2002)

CONFERENCES ORGANIZED:

“Drug Development Processes and Regulatory Approaches”.
University of Maryland, Baltimore, May 19-23, **2008**.

“Biology, Behavior, and Chemistry: Translation Research in Addiction”
Member, Organizing Committee, **2009 - 2010**.

SYMPOSIA CHAIRED:

Biology, Behavior, and Chemistry: Translation Research in Addiction, TX
March **2017**. The opioid epidemic: history, formulations,
regulations, and emergencies.

The College on Problems of Drug Dependence, San Juan, PR, June 19,
2014. Demystifying Medicinal Chemistry and Drug Design.

WORKSHOPS CHAIRED:

“Novel Techniques and Technologies in Chemistry and Pharmacology”.
College on Problems of Drug Dependence, San Juan, PR June
15, **2004**.

CONSULTING:

Expert Witness, US Department of Justice
(US v. Mobashar Tahir, 13, cr-269-T-27CPT)
Expert Witness, Maryland Office of the Attorney General
(State of Maryland vs. James Careton, C02CR18001572)
Expert witness, US Department of Justice
(US vs. Douglas Jason Way, Case No. 1:14-cr-00101 DAD)
Expert witness, US Department of Justice
(US vs. Charles Burton Ritchie, Criminal No. 4:15-cr-18)
Office of Statewide Prosecution, Florida
Expert witness, US Department of Justice
(US vs. Thomas Vigliatura, Criminal No. 4:05cr40033-FDS)
Expert witness, US Department of Justice – did not go to trial.
(US vs. Michael J. Gilbert, Criminal No. 03-693 (JEI))

Expert witness, US Department of Justice
(US vs. David W. Linder, Criminal No. 4:02cr191)
Janssen Pharmaceutical Products
Darby and Darby Professional Corporation
Heenan Blaikie LLP
Actavis Mid Atlantic, LLC
Bingham McCutchen LLP

ADVISORY BOARDS: Stevenson University Chemistry Advisory Board (2007-2013)

SITE VISITS: BioMolecular Sciences Graduate Program Review, University of Mississippi School of Pharmacy. October 22-24, **2019**.

GOVERNMENTAL TESTIMONY: US Senate "Health, Pensions, Education, and Labor" (HELP) committee. "Managing Pain During the Opioid Crisis". February 12, **2019**.

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

College on Problems of Drug Dependence (CPDD)
American Chemical Society (ACS)
International Narcotics Research Conference (INRC)
American Association of Pharmaceutical Scientists (AAPS)
American Association of Colleges of Pharmacy (AACP)
Society of Physician Entrepreneurs (SOPE)
Rho-Chi Honor Society
Phi Lambda Sigma Pharmacy Leadership Society

MANUSCRIPT REVIEWER:

Journal of Medicinal Chemistry
Journal of Organic Chemistry
Journal of the American Chemical Society
Organic Letters
Journal of Pharmacology and Experimental Therapeutics
Drug and Alcohol Dependence
New England Journal of Medicine
Proceedings of the National Academy of Sciences, USA
Bioorganic and Medicinal Chemistry
Bioorganic and Medicinal Chemistry Letters
Tetrahedron
Tetrahedron Asymmetry
Tetrahedron Letters
SYNLETT
Drug Target Insights
Synapse
Pharmacology, Biochemistry, and Behavior
Pharmaceutical Research
Brain Research
Organic Process Research & Development
European Journal of Medicinal Chemistry
Organic and Biomolecular Chemistry
BMC - Bioinformatics
Chirality
Medicinal Chemistry Research
Current Medicinal Chemistry - CNS Agents
Mini-Reviews in Medicinal Chemistry
Brain, Behavior, and Immunity
Monatshefte fur Chemie - Chemical Monthly
Journal of Labeled Compounds and Radiopharmaceuticals

AD HOC STUDY SECTIONS:

National Institutes of Health RCMI Site Visit, College of Pharmacy,
Florida A&M University 10/6/02-10/8/02
National Institutes of Health RCMI Review Committee 11/7/02
National Cancer Institute, Special Emphasis Panel, ZCA1 SRRB-K J1
10/25/04-10/27/04
National Institute on Drug Abuse Medication Development Research
Review Subcommittee (NIDA-L) 6/6/05.
National Institute on Drug Abuse Medication Development Research
Review Subcommittee (NIDA-L) 10/5/05.
Canadian Institutes of Health Research. Drug Development Initiative –
Pilot Project Grants Committee. 1/12/06.
National Institute on Drug Abuse Medication Development Research
Review Subcommittee (NIDA-L) 3/7/06 and 3/21/06
National Institutes of Health, Special Emphasis Panel, ZRR1 BT-8 01
Interdisciplinary Research Consortium review – 8/12/06
National Institutes on Drug Abuse Rodent Locomotor and Discriminative
Stimulus Contract Review. 4/25/07.
National Cancer Institute, SBIR contract review. Development of
Anticancer Agents. 3/7/08.
National Institute of Mental Health “NIMH Chemical Synthesis and Drug
Supply Program” Contract Review. 6/25/08.
National Institutes of Health, SBIR Phase II, Design and Synthesis of
Treatment Agents N44DA-9-8874. 7/31/09
National Institutes of Health, National Cooperative Drug Discovery and
Development Groups (NCDDDG). ZMH1 ERB-C 03S, 3/1/10
National Institutes of Health, National Cooperative Drug Discovery and
Development Groups (NCDDDG). ZMH1 ERB-C 03S, 3/13/12
National Institutes of Health, National Cooperative Drug Discovery and
Development Groups (NCDDDG). ZMH1 ERB C 01 S, 11/15/12
National Institutes of Health. Therapeutics for Rare and Neglected
Diseases. NCATS 2/28/13-3/1/13
National Institutes of Health “NIMH Chemical Synthesis and Drug Supply
Program” Contract Review. 6/20/13
National Institutes of Health “Program Project: Pain and Drug Abuse
ZRG1 IFCN-B (40) P. 9/16/14
National Institutes of Health “Special Emphasis Panel” ZRG1 MDCN-
B(05). 7/21/15.
National Institutes of Health “Special Emphasis Panel” ZRG1 MDCN-
B(40) P. 11/17/15.
National Institutes of Health “Special Emphasis Panel” ZRG1 DKUS-P
(55) 2/19/16.
Chair: National Institutes of Health “Special Emphasis Panel” ZRG1
MDCN-B(05) 3/15/16
National Institutes of Health “Special Emphasis Panel” ZRG1 MDCN-B
(40) P. 9/8/16
National Institutes of Health “Special Emphasis Panel” ZNS1 SRB T (22)
BPN. 11/4/16
National Institutes of Health, Blueprint Neurotherapeutics Network (BPN)
Small Molecule Drug Discovery and Development. ZNS1 SRB-T
25. 6/5/17
National Institutes of Health “Countermeasures Against Chemical
Threats (CounterACT) Research Centers of Excellence (U54)”
ZRG1 MDCN-B (54). 3/8/18
National Institutes of Health “Using Rodent Behavioral Models to Identify
Substance Abuse Pharmacotherapies” N01DA-18-8936. 5/24/18
National Institutes of Health “Countermeasures Against Chemical
Threats (CounterACT) Research Centers of Excellence (U54)”
ZRG1 MDCN-B (54). 3/21/19

National Institutes of Health "Countermeasures Against Chemical Threats (CounterACT)" ZRG1 MDCN-B (50) R. 3/22/19

AD HOC GRANT REVIEWER:

National Science Foundation (NSF POWRE)
Austrian Science Fund (FWF)
National Institute on Drug Abuse (NIDA, CEBRA)
NIGMS Minority Biomedical Research Support - Support for Continuous Research Excellence Program (MBRS-SCORE)
NIMH Psychoactive Drug Screening Program
U.S. Civilian Research and Development Foundation (CRDF)
NIDA SBIR Concept Review
AACP New Investigator Program
Quebec-Flanders Bilateral Research Cooperation Program

BOOK REVIEWER:

Institute of Physics Publishing Ltd
John Wiley and Sons

RESEARCH FUNDING

1. Maryland Industrial Partnerships (MIPS). A Combination Test for the Detection of Illicit Drugs. 2/1/00-1/31/01. \$29,421 (Total Costs). Principle Investigator.
2. National Institute on Drug Abuse (NIDA, R01, DA 13583). Opioids with Delta Antagonist and Mu Agonist Activity. 2/1/01-1/31/13. Principle Investigator.
3. National Institute on Drug Abuse (NIDA, R01, DA 14986). GHB Abuse: Chemistry and Neurobiology. 9/26/01-7/31/04. \$199,870 (Total Costs). Co-Investigator - PI: Dr. Charles France, University of Texas Health Science Center at San Antonio.
4. National Institute on Drug Abuse (NIDA, R01, DA 13978). Development of Novel Agents with Anti-Cocaine Properties. 9/30/01-6/30/12. Co-Investigator - PI: Dr. Rae Matsumoto, University of Oklahoma, University of Mississippi, University of West Virginia).
5. Unihart, Inc. Synthesis of Analogs of Xenaldial. 11/1/04-10/31/05. \$29,200 (Total Costs). Principle Investigator.
6. Neuronascent, Inc. The Synthesis of Novel Neurogenic Agents. 7/1/05-2/28/06. \$8,000 (Total costs). Principle Investigator.
7. National Cancer Institute (NCI, R01 CA 107331). Restoration of Tumor Suppression Activity in Malignant Melanoma. 7/1/06-6/30/15. \$83,739 (Total costs). Co-Investigator - PI: Dr. David Weber, University of Maryland School of Medicine.
8. Samuel Waxman Foundation. Transcriptional Targeting in Translational Therapy. 7/1/06-6/30/09. Co-Investigator - PI: Dr. A. Melnick, Albert Einstein School of Medicine Yeshiva University.
9. Neuronascent, Inc. Further optimization of Neurogenic Agents. 4/1/07-12/31/07. \$11,500 (Total costs). Principle Investigator.
10. Maryland Department of Health and Mental Hygiene Opioid Analgesics for Cancer Pain with Reduced Tolerance.. 11/1/13-6/30/14. Principle Investigator.
11. University of Maryland Center of Excellence in Regulatory Science and Innovation (FDA, U01F004320). 09/15/11-09/14/14. Co-Investigator
12. Maryland Technology Development Corporation. UMB425: A unique opioid analgesic with reduced tolerance. 4/23/14-4/23/15. Principle Investigator.
13. National Institute of Mental Health (NIMH, R01, MH 107499). Preclinical identification of better antimuscarinic antidepressants. Co-Investigator – PI: Dr. James Woods, University of Michigan
14. Helen Pumphrey Denit Charitable Trust. Non-addicting Opioid Analgesics. Principle Investigator. (provisionally approved).

CAREER ADVANCEMENT AWARDS

1. National Institute on Drug Abuse (K02, DA 019634). Reversing the Toxic Effects of Drugs of Abuse. 5/1/05-4/30/10. \$527,695 (Total Costs). Principle Investigator.

FELLOWSHIPS FOR GRADUATE STUDENTS AND POSTDOCTORAL RESEARCHERS

1. Linn N. Thatcher: National Research Service Award (NRSA). National Institute on Drug Abuse (NIDA F31, DA 15586). Opioids with a Reduced Potential to Produce Tolerance. 7/1/02-6/30/04. \$49,424 (Total Costs).

2. Matthew M. Metcalf: Slama Departmental Fellowship. Department of Pharmaceutical Sciences, University of Maryland School of Pharmacy. 9/1/04-4/30/05.
3. Matthew M. Metcalf: Ruth L. Kirschstein National Research Service Award (NRSA) (F31, DA 18025). National Institute on Drug Abuse (NIDA). Kappa Opioids Antagonists with a Shortened Duration of Action. 5/1/05-4/30/07. \$42,722 (Total costs).
4. Trudy Smith: University of Maryland Baltimore, Enrichment Fellowship. 8/1/05-7/31/07. \$38,000 (Total costs).
5. Christopher W. Cunningham: Ruth L. Kirschstein National Research Service Award (NRSA) (F31, DA 21049). National Institute on Drug Abuse (NIDA). Opioid Analgesics with Reduced Constipation. 8/1/06-9/30/08.
6. Susan L. Mercer: PSC Departmental Fellowship. Department of Pharmaceutical Sciences, University of Maryland School of Pharmacy. 9/1/07-6/30/08.
7. Trudy Smith: PSC Departmental Fellowship. Department of Pharmaceutical Sciences, University of Maryland School of Pharmacy. 9/1/08-6/30/09.

INVITED LECTURES AND CONFERENCE SEMINARS

1. School of Chemistry, University of Bristol, Bristol, UK. August 7, **1996**.
(Topic: L-Selectride as a General O-Demethylating Agent for Opium Alkaloids and Derivatives).
2. Colgate University NIH Student Program, National Institutes of Health. October 19, **1998**.
(Topic: The Development and Application of Novel Methodology to Opioid Synthesis).
3. Laboratory of Medicinal Chemistry, National Institutes of Health, Bethesda. December 7, **2000**.
(Topic: The Development and Application of Novel Methodology to Opioid Synthesis).
4. The College on Problems of Drug Dependence, Quebec City, Quebec. June 11, **2002**. Symposium VII: "GHB: Chemical Biochemical, and Behavioral Effects". (Topic: The Chemistry of GHB Agonists and Antagonists).
5. University of Maryland Greenbaum Cancer Center, Baltimore, October 1, **2002**. (Topic: Drug Discovery and Development: From Protein Targets to Therapeutic Agents).
6. Department of Pharmacology, University of Texas Health Science Center at San Antonio, San Antonio. January 15, **2003** (Topic: The Symbiosis of Pharmacology and Chemistry in the Study of Biological Systems Involved in Drug Abuse).
7. National Institute on Drug Abuse, Intramural Research Program, Baltimore, MD. February 26, **2003** (Topic: Chemical Approaches Towards Opioids with Reduced Potential for Tolerance).
8. Department of Chemistry and Biochemistry, Duquesne University, Pittsburgh, PA. April 4, **2003** (Topic: The Chemistry of Drugs of Abuse: Opioids and Gamma-Hydroxybutyrate).
9. Food and Drug Law Institute, Washington, DC, April 14, **2003**. Pharmaceutical Science: The Scientific Basis of Today's Drug Regulations (Topic: The Chemistry of Drug Design and Development).
10. University of Maryland Program in Oncology, Experimental Therapeutics Retreat, Baltimore, MD. May 22, **2003**. (Topic: Drug Lead Optimization).
11. The College on Problems of Drug Dependence, Bal Harbour, Florida. June 16, **2003**. Chemistry to Pharmacology - Pharmacology to Chemistry Workshop: (Topic: Opioids, Cocaine, and GHB: Examples of Synergism Between Pharmacologists and Chemists).
12. Department of Chemistry and Biochemistry, University of Maryland Baltimore County, Baltimore, MD. November 25, **2003** (Topic: The Chemistry of Drug Abuse: Opioids and Gamma-Hydroxybutyrate (GHB)).
13. The College on Problems of Drug Dependence, San Juan, PR. June 16, **2004**. Symposium XI: "Sigma Receptors: Evolution of an Enigma to a Therapeutic Target for Drugs of Abuse". (Topic: Sigma Receptors: From Promiscuous Ligands to Subtype Selective Agonists and Antagonists).
14. Pharmacists' Education and Assistance Committee Conference, Clarksville, MD. October 21, **2004**. "Crossing the Line": When Prescription Drug Use Becomes Abuse and Addiction. (Topic: Opioid Pharmacology).
15. American Chemical Society, Maryland Section, University of Maryland, Baltimore, MD. November 18, **2004**. (Topic: Synthetic Studies Towards Opioids Lacking Constipation as a Side-effect).
16. Division of Medicinal and Natural Products Chemistry, University of Iowa College of Pharmacy, Iowa City. March 8, **2005**. (Topic: Opioid Analgesia Without Constipation: Synthetic Approaches Towards Opioids with Novel Pharmacological Profiles).
17. University of Maryland Baltimore, Baltimore, MD. March 21, **2005**. Drug Development Processes and Regulatory Approaches Program. (Topic: Review of the Chemistry Section of the IND).

18. University of Maryland Baltimore, Baltimore, MD. May 22, **2006**. Drug Development Processes and Regulatory Approaches. II. (Topic: Review of the Chemistry Section of the IND).
19. College of Pharmacy University of Kentucky, Lexington, KY. September 8, **2006**. (Topic: Synthetic Studies Towards Opioids with a Mixed Pharmacological Profile).
20. College of Pharmacy University of Mississippi, University, MS. February 20, **2007**. (Topic: Adventures in Opioid Chemistry).
21. International Narcotics Research Conference, Berlin, Germany. July 10, **2007**. Symposium IV: "Medicinal Chemistry". (Topic: Kappa Opioid Antagonists).
22. Department of Chemistry, Brown University, Providence, RI. November 27, **2007**. (Topic: Synthetic Studies Towards Opioid Analgesics Lacking Tolerance).
23. School of Pharmacy, Howard University, Washington, DC. January 29, **2009**. (Topic: Towards Opioid Analgesics with Reduced Tolerance)
24. Biology, Behavior, and Chemistry, San Antonio, March 21-22, **2009**. (Topic: Therapeutics to Prevent Methamphetamine Neurotoxicity).
25. American Association of Pharmaceutical Sciences, Annual Meeting, Los Angeles, CA, November 11, **2009**. (Topic: Opioid, P-glycoprotein, and the Blood-Brain Barrier)
26. West Virginia University School of Pharmacy Research Day, Morgantown, WV. February 19, **2010**. (Keynote Speaker - Careers in Academia).
27. Department of Chemistry and Biochemistry, University of Maryland College Park. September 9, **2010**.
28. Lipscomb College of Pharmacy, Nashville, TN. October 19, **2010**. (Topic: The Symbiosis of Pharmacology and Chemistry in the Study of Biological Systems Involved in Drug Abuse)
29. Department of Chemistry, Franklin & Marshall College, PA. February 1, **2011**. (Topic: Chemistry and Biology - Partners in the Study of Drug Abuse)
30. Universities at Shady Grove, Rockville, MD. Fourth Annual Biomedical Sciences Day, November 15, **2012**. (Topic: New and Evolving Therapeutics – A Collaborative Approach)
31. Biology, Behavior, and Chemistry, San Antonio, March 9-10, **2013**. (Topic: Medicinal chemistry of mu opioid agonists).
32. The College on Problems of Drug Dependence, San Diego, CA. June 16, **2013**. "Late-Breaking Research". (Topic: UMB425: A dual profile mu agonist/delta antagonist opioid with reduced antinociceptive tolerance).
33. Johns Hopkins Alliance for Science and Technology Development, Baltimore, MD February 18, 2014. (Topic: UMB425: An Opioid Analgesic with less Tolerance than Morphine).
34. The College on Problems of Drug Dependence, San Juan, PR, June 15, **2014**. President's Lecture. (Topic: The Harrison Act at 100. Past, present and future science behind the search for new opioid Analgesics)
35. The College on Problems of Drug Dependence, San Juan, PR, June 18, **2014**. Drug Evaluation History Forum. The Drug Evaluation program of the CPDD: History and Scope. Role: Discussant.
36. The College on Problems of Drug Dependence, San Juan, PR, June 19, **2014**. Demystifying Medicinal Chemistry and Drug Design Symposium (Topic: Fundamental Principles of Drug Design).

37. University of Maryland School of Pharmacy, Computer-Aided Drug Design Symposium, Baltimore, MD, June 24, **2014**. (Topic: Next Generation Opioid Analgesics).
38. Biology, Behavior, and Chemistry, San Antonio, March 14-15, **2015**. After Dinner Lecture. Role: After Dinner Speaker on Alternate Careers for Graduate Students.
39. Concordia University School of Pharmacy, Mequon, WI, April 15, **2015**. (Topic: UMB425: A Unique Opioid Analgesic with Lower Tolerance).
40. International Narcotics Research Conference, Phoenix, AZ. June 16, **2015**. Advances in Therapeutic Design (Topic: UMB425: A Unique Opioid Analgesic with Lower Tolerance).
41. Department of Chemistry, University of Notre Dame of Maryland, Baltimore, MD October 15, **2015**. (Topic: Reduction of prescription opioid abuse through new opioid analgesics lacking tolerance and dependence).
42. The College on Problems of Drug Dependence, Palm Springs, CA, June 13, **2016**. Town Hall Industry/Academia Forum. New Challenges and Opportunities from the Collaborative Environment (Topic: Start-ups from an Academic View).
43. MdAIR, Baltimore, MD, November 11, **2016** (Topic: A Collaborative Process to Measure Faculty Workload)
44. University of Maryland Center to Advance Chronic Pain Research, Baltimore, MD. November 17, **2016**. Chronic Pain Management and Opioid Abuse: We Need a "Fix". (Topic: Solving prescription opioid abuse: New drugs or new formulations?)
45. Biology, Behavior, and Chemistry, San Antonio, TX. March, 4-5, **2017**. (Topic: Beyond formulations: Solving the opioid epidemic with new chemical entities)
46. AACP Webinar, June 8, **2017** (Topic: A Collaborative Process to Measure Faculty Workload)
47. The College on Problems of Drug Dependence, Montreal, Canada, June 20, **2017**. Town Hall Industry/Academia Forum. Industry, government, and academia as a collaborative environment for development of a product for the treatment of substance use disorders. Role: Discussant.
48. The College on Problems of Drug Dependence, Montreal, Canada, June 22, **2017**. La Chimie: Drug Development Strategies. (Topic: UMB 426: A pyranomorphinan with a profile of mu agonism/delta antagonism)
49. University of Florida College of Pharmacy, Gainesville, FL. October 24, **2017**. (Topic: Beyond formulations: Solving the opioid epidemic with new chemical entities).
50. Maryland Patient Safety Conference, Ellicott City, MD. November 2, **2017**. Maryland's Opioid Epidemic: Addressing Addiction and Seeking Solutions. (Topic: Developing a Non-Addictive opioid pain killer).
51. American Association of Colleges of Pharmacy Interim Meeting, Long Beach, CA. February 24-27, **2018**. (Topic: Altmetrics: Measuring true impact)
52. American Association of Colleges of Pharmacy Interim Meeting. Long Beach, CA. February 24-27, **2018**. Leading from the Lab: 2018 Research Symposium (Topic: Accelerating Healthcare Solutions Through Collaboration)
53. American Association of Colleges of Pharmacy National Meeting, Boston, MA. July 21-25, **2018**. Joint session with S. L. Mercer. (Topic: Beyond Formulations: How Basic Scientists Aim to Solve the Opioid Crisis)
54. School of Public Health, APHA Student Assembly Talk. University of Maryland College Park, College Park, MD. March 13, **2019**. (Topic: How Synthetic Opioids Could Offer Pain Relief Without Addiction)

55. Middle Atlantic Regional Meeting of the American Chemical Society (MARM), University of Maryland Baltimore County, Baltimore, MD. May 31, **2019**. (Topic: How to recognize different types of opioids from quite a long way away).
56. American College of Clinical Pharmacology (ACCP), Chicago, IL, September 16, **2019**. (Topic: Current therapies for opioid use disorder, and new safer analgesics under development).

EDUCATIONAL PRESENTATIONS TO THE PUBLIC

1. University of Maryland Baltimore Opioid Panel. Homestead Gardens, MD. April 18, **2018**. Solutions to Confronting our Local Opioid Epidemic. Panel Discussion
2. University of Maryland Baltimore Opioid Panel. Columbia, MD. September 27, **2018**. Targeting Solutions to the Opioid Crisis. Panel Discussion
3. University of Maryland Baltimore Opioid Panel. Columbia, MD. October 11, **2018**. Targeting Solutions to the Opioid Crisis. Panel Discussion
4. Opioid presentation at La Posta Restaurant, Severna Park, MD. February 21, **2019**.
5. Invited Speaker at Annapolis Rotary Club, Annapolis Yacht Club, Annapolis, MD. September 12, **2019**.
6. Invited Speaker at Columbia Rotary Club, Columbia, MD. November 22, **2019**.

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1. L. Lebovitz, A. Coop, M. R. de Bittner, I. H. Zuckerman: *Applied Pharmaceutical Sciences: An Innovative, Interdisciplinary Approach to Educating Both Students and Faculty.* **2013** <http://www.ajpe.org/doi/full/10.5688/ajpe775109> (School Poster)
2. L. Lebovitz, N. D. Eddington, M. R. de Bittner, A. Coop, W. J. Cooper, C. D. Mullins: *One Hundred Eighty Thousand Minutes or Two Thousand Hours; How Do You Measure a Year.* **2014** <http://www.ajpe.org/doi/full/10.5688/ajpe785111>
3. J. E. Polli, P. Shapiro, A. Coop: *Design and Implementation of an Online MS in Regulatory Science Degree Program for Working Professionals.* **2015** <http://www.ajpe.org/doi/full/10.5688/ajpe795S4>
4. A. Coop, M. R. de Bittner: *Dueling Professors: Integrated Education and Faculty Development through "Double Acts."* **2015** <http://www.ajpe.org/doi/full/10.5688/ajpe795S4>
5. L. Lebovitz, R. N. Dalby, C. Layson-Wolf, A. Coop, S. R. Tucker, J. Mattingly, N. J. Brandt: *Pharmacy Curriculum Outcomes Assessment (PCOA). Love it or Hate it, It's Required!* **2015** <http://www.ajpe.org/doi/full/10.5688/ajpe795S4>
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