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Alexander (Leggy) Arnold, PhD

Curriculum Vitae

PERSONAL DETAILS

Date of Birth: 24/10/70

Nationality: German and American

EDUCATION

1998-2002 Ph.D., *Organic Chemistry*, University of Groningen, Groningen, The Netherlands
1996-1998 M.S., *Organic Chemistry*, University of Groningen, Groningen, The Netherlands
1995 ERASMUS Scholarship for Research Projects: *Organometallic Chemistry and Biotechnology*, University of Groningen, Groningen, The Netherlands
1991-1994 Vordiplom, *Inorganic and Organic Chemistry*, Rheinische-Westfälische Technische Hochschule Aachen, Aachen, Germany

WORK EXPERIENCE

2020- Professor, *Chemistry and Biochemistry*, University of Wisconsin Milwaukee, Milwaukee, WI, United States
2015- 2020 Associate Professor, *Chemistry and Biochemistry*, University of Wisconsin Milwaukee, Milwaukee, WI, United States
2009-2015 Assistant Professor, *Chemistry and Biochemistry*, University of Wisconsin Milwaukee, Milwaukee, WI, United States
2007-2009 Staff Scientist, *Chemical Biology & Therapeutics*, St. Jude Children's Research Hospital, Memphis, TN, United States
2006-2007 Research Laboratory Specialist, *Chemical Biology & Therapeutics*, St. Jude Children's Research Hospital, Memphis, TN, United States
2005-2006 Senior Research Technologist, *Chemical Biology & Therapeutics*, St. Jude Children's Research Hospital, Memphis, TN, United States
2005 Associate Specialist, *Pharmaceutical Chemistry*, UC San Francisco, CA, United States
2002-2005 Postdoctoral Researcher, *Pharmaceutical Chemistry*, UC San Francisco, CA, United States

MEMBERSHIPS AND POSITIONS

2002-present Member of the American Chemical Society
2009-2014 Member of the Society for Laboratory Automation and Screening
2010-present Founding Member of the Advisory Board of the Milwaukee Institute of Drug Discovery
2011-present Member of the Clinical and Translational Science Institute at the Medical College of Wisconsin
2013-present Associate Editor of Nuclear Receptor Research
2013-present Associate Editor of Biomolecular Research & Therapeutics
2014-present Member of the Council on Undergraduate Research
2014-present Member of the Advisory Board of Bridges and Cures
2014-present PI Scientist of the Shimadzu Laboratory for Advanced & Applied Analytical Chemistry at UWM
2017-present Vice President and Chief Scientific Officer at Pantherics Incorporated
2019-2020 Consultant for Neurocycle Therapeutics

2019-present	Consultant for Valis Pharma Incorporated
2020-present	Consultant for Function Therapeutics
2020-present	Consultant for Estrigenix
2020-present	Board member at Gabaderm Incorporated
2021-present	Director of the Milwaukee Institute for Drug Discovery
2022-present	Director of Chemistry for Sanacor

HONORS AND AWARDS

2022	Patent Award (UWM Research Foundation)
2021	Start-up Award (UWM Research Foundation)
2019	Length of Service Award (UWM)
2019	Patent Award (UWM Research Foundation)
2018	Patent Award (UWM Research Foundation)
2017	Technology Licensing Award (UWM Research Foundation)
2017	Patent Award (UWM Research Foundation)
2014	UWM Foundation Research Award (UWM Office of Research)
2014	Technology Licensing Award (UWM Research Foundation)
2013	Young Investigator Award (16 th Workshop on Vitamin D)
2010	Graduate Research Fellow (GWSW/UWM)
2009	Travel award for NIH workshop "Chemical Approaches to Nuclear Receptor and Metabolism"
2006	Employee of the Quarter, St. Jude Children's Research Hospital, Memphis, TN, United States
2001	Lecture Award NCCC II Leiden, The Netherlands
1998-2002	Ubbo Emmius Ph.D. Scholarship
1998-2002	EET-Grant (Economy, Ecology, Technology) from the Dutch Ministry of Economic Affairs.
1997	Nomination for the Organon prize for undergraduate research
1996-1997	ERASMUS Scholarship

TEACHING AND SUPERVISION

2009-present *University of Wisconsin-Milwaukee, Milwaukee, WI, United States*

Teaching Spring 2023 (course buyout MIDD director)

CHEM 691, Senior Research (independent study), 2 enrolled, 4.0 credit hours, Undergraduate.
 CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
 CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
 CHEM 934, Advanced Seminar in Organic Chemistry; 3 enrolled, 3.0 credit hours, Graduate, Seminar.
 CHEM 990, Research Organic Chemistry; 3 enrolled, 12.0 credit hours, Graduate, Independent Study.
 CHEM 993, Research Analytical; 1 enrolled, 4.0 credit hours, Graduate, Independent Study.
 CHEM 996, Research Biochemistry; 1 enrolled, 3.0 credit hours, Graduate, Independent Study

Teaching Fall 2022 (course buyout MIDD director)

CHEM 640, Advanced Survey of Organic Chemistry, 10 enrolled, 30 credit hours, Graduate/Undergraduate Lecture
 CHEM 691, Senior Research (independent study), 1 enrolled, 3 credit hours, Undergraduate.
 CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
 CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
 CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
 CHEM 990, Research Organic Chemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.
 CHEM 993, Research Analytical; 1 enrolled, 4.0 credit hours, Graduate, Independent Study.
 CHEM 996, Research Biochemistry; 1 enrolled, 6.0 credit hours, Graduate, Independent Study

Teaching Spring 2022 (course buyout MIDD director)

CHEM 647, Physical Methods in Organic Chemistry; 2 enrolled, 6.0 credit hours, Undergrad/Graduate, Lecture.
 CHEM 691, Senior Research (independent study), 2 enrolled, 4.0 credit hours, Undergraduate.
 CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
 CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 990, Research Organic Chemistry; 2 enrolled, 7.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study

Teaching Fall 2021 (course buyout MIDD director)

CHEM 691, Senior Research (independent study), 1 enrolled, 3 credit hours, Undergraduate.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 1 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 5.0 credit hours, Graduate, Independent Study

Teaching Spring 2021

CHEM 343, Physical Methods of Organic Chemistry; 1 enrolled, 3.0 credit hours, Undergraduate, Lecture.
CHEM 691, Senior Research (independent study), 1 enrolled, 2 credit hours, Undergraduate.
CHEM 692, Senior Thesis (independent study), 1 enrolled, 2 credit hours, Undergraduate.
CHEM 744, Medicinal Chemistry II, 5 enrolled, 15 credit hours, graduate.
CHEM 931, Advanced Seminar in Analytical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 2 enrolled, 4.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 2.0 credit hours, Graduate, Independent Study

Teaching Fall 2020

CHEM 343, Organic Chemistry; 151 enrolled, 453.0 credit hours, Undergraduate, Lecture.
CHEM 691, Senior Research (independent study), 1 enrolled, 3 credit hours, Undergraduate.
CHEM 692, Senior Thesis (independent study), 2 enrolled, 4 credit hours, Undergraduate.
CHEM 931, Advanced Seminar in Analytical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 2 enrolled, 4.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 2.0 credit hours, Graduate, Independent Study

Teaching Spring 2020 (course buyout RGI funding)

CHEM 647, Physical Methods in Organic Chemistry; 7 enrolled, 21.0 credit hours, Undergrad/Graduate, Lecture.
CHEM 748, Topics in organic Chemistry, Classics in Total Synthesis, 4 enrolled, 12 credit hours, Graduate
CHEM 931, Advanced Seminar in Analytical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 2 enrolled, 4.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 9.0 credit hours, Graduate, Independent Study

Teaching Fall 2019

CHEM 647, Physical Methods in Organic Chemistry; 12 enrolled, 36.0 credit hours, Undergrad/Graduate, Lecture.
CHEM 748, Physical Organic Chemistry, Co-teaching with Dr. Scott Gronert, 4 enrolled, 12 credit hours, Graduate
CHEM 931, Advanced Seminar in Analytical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 2 enrolled, 4.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 11.0 credit hours, Graduate, Independent Study

Teaching Summer 2019

CHEM 691, Senior Research; 2 enrolled, 2 credit hours, Undergraduate, Independent Study.

Teaching Spring 2019

CHEM 345, Organic Chemistry; 126 enrolled, 378.0 credit hours, Upper Division, Undergraduate, Lecture.

CHEM 599, Senior Research; 1 enrolled, 2 credit hours, Undergraduate, Independent Study.

CHEM 691, Senior Research; 1 enrolled, 2 credit hours, Undergraduate, Independent Study.

CHEM 744, Medicinal Chemistry II; 17 enrolled, 51.0 credit hours, Upper Division, Graduate Lecture

CHEM 931, Advanced Seminar in Analytical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 990, Research Organic Chemistry; 2 enrolled, 11.0 credit hours, Graduate, Independent Study.

CHEM 993, Research Analytical; 2 enrolled, 20.0 credit hours, Graduate, Independent Study.

CHEM 996, Research Biochemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study

Teaching Fall 2018 (sabbatical)

CHEM 691, Senior Research; 2 enrolled, 4 credit hours, Undergraduate, Independent Study.

CHEM 931, Advanced Seminar in Analytical Chemistry; 3 enrolled, 3.0 credit hours, Graduate, Seminar.

CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 990, Research Organic Chemistry; 2 enrolled, 11.0 credit hours, Graduate, Independent Study.

CHEM 993, Research Analytical; 3 enrolled, 20.0 credit hours, Graduate, Independent Study.

CHEM 996, Research Biochemistry; 2 enrolled, 5.0 credit hours, Graduate, Independent Study.

Teaching Spring 2018

CHEM 691, Senior Research; 2 enrolled, 5 credit hours, Undergraduate, Independent Study.

CHEM 692, Senior Research; 1 enrolled, 2 credit hours, Undergraduate, Independent Study.

CHEM 744, Medicinal Chemistry II; 17 enrolled, 51.0 credit hours, Upper Division, Graduate Lecture

CHEM 912, Graduate Seminar; 69 enrolled, 69.0 credit hours, Graduate, Seminar.

CHEM 931, Advanced Seminar in Analytical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.

CHEM 990, Research Organic Chemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

CHEM 993, Research Analytical; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Fall 2017

CHEM 691, Senior Research; 2 enrolled, 6 credit hours, Undergraduate, Independent Study.

CHEM 748, Physical Organic Chemistry; 12 enrolled, 36.0 credit hours, Upper Division, Graduate Lecture.

CHEM 912, Graduate Seminar; 69 enrolled, 69.0 credit hours, Graduate, Seminar.

CHEM 931, Advanced Seminar in Analytical Chemistry; 3 enrolled, 1.0 credit hours, Graduate, Seminar.

CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 1.0 credit hours, Graduate, Seminar.

CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 1.0 credit hours, Graduate, Seminar.

CHEM 990, Research Organic Chemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

CHEM 993, Research Analytical; 3 enrolled, 10.0 credit hours, Graduate, Independent Study.

CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Summer 2017

CHEM488, Advanced Analytical Techniques, 7 enrolled, 2 credit hours, Undergraduate Seminar and Lab

Teaching Spring 2017

CHEM 345, Organic Chemistry; 126 enrolled, 378.0 credit hours, Upper Division, Undergraduate, Lecture.

CHEM 691, Senior Research; 2 enrolled, 6 credit hours, Undergraduate, Independent Study.

CHEM 931, Advanced Seminar in Analytical Chemistry; 3 enrolled, 1.0 credit hours, Graduate, Seminar.

CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 1.0 credit hours, Graduate, Seminar.

CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 3 enrolled, 10.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Fall 2016

CHEM 343, Organic Chemistry; 157 enrolled, 471.0 credit hours, Upper Division, Undergraduate, Lecture.
CHEM 691, Senior Research; 2 enrolled, 4 credit hours, Undergraduate, Independent Study.
CHEM 692, Senior Thesis; 1 enrolled, 3 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 1 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.

Teaching Spring 2016

CHEM 691, Senior Research; 3 enrolled, 4 credit hours, Undergraduate, Independent Study.
CHEM 744, Medicinal Chemistry II; 9 enrolled, 27.0 credit hours, Upper Division, Graduate Lecture.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 1 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 9.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Fall 2015

CHEM 541, Bioprocess Chemical Engineering; 2 enrolled, 3.0 credit hours, Undergraduate, Lecture.
CHEM 692, Senior Research; 2 enrolled, 5 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 9.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 7.0 credit hours, Graduate, Independent Study.

Teaching Spring 2015

CHEM 647, Physical Methods in Organic Chemistry; 16 enrolled, 48.0 credit hours, Undergrad/Graduate, Lecture.
CHEM 691, Senior Research; 2 enrolled, 3 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 5.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.

Teaching Fall 2014

CHEM 345, Organic Chemistry; 109 enrolled, 327.0 credit hours, Upper Division, Undergraduate, Lecture.
CHEM 691, Senior Research; 5 enrolled, 2-5 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 5.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.

Teaching Spring 2014

CHEM 343, Organic Chemistry; 173 enrolled, 465.0 credit hours, Upper Division, Undergraduate, Lecture.
CHEM 741, Topics in Organic Chemistry; 8 enrolled, 16.0 credit hours, Graduate, Lecture
CHEM 692, Senior Research; 1 enrolled, 2.0 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 4 enrolled, 4.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 4 enrolled, 13.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 3.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 5.0 credit hours, Graduate, Independent Study.

Teaching Fall 2013

CHEM 647, Physical Methods in Organic Chemistry; 16 enrolled, 48.0 credit hours, Undergrad/Graduate, Lecture.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 8.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 4.0 credit hours, Graduate, Independent Study.

Teaching Spring 2013

CHEM 691, Senior Research; 1 enrolled, 2.0 credit hours, Undergraduate, Independent Study.
CHEM 748, Physical Organic Chemistry; 12 enrolled, 36.0 credit hours, Upper Division, Graduate Lecture.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.

Teaching Fall 2012

CHEM 343, Organic Chemistry; 161 enrolled, 483.0 credit hours, Upper Division, Undergraduate, Lecture.
CHEM 691, Senior Research; 2 enrolled, 7.0 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 2.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 5.0 credit hours, Graduate, Independent Study.

Teaching Summer 2012

CHEM 691, Senior Research; 2 enrolled, 5.0 credit hours, Undergraduate, Independent Study.

Teaching Spring 2012

CHEM 599, Special Projects in Chemistry; 1 enrolled, 5.0 credit hours, Upper Division, Undergraduate, Independent Study.
CHEM 691, Senior Research; 1 enrolled, 3.0 credit hours, Undergraduate, Independent Study.
CHEM 741, Topics in Organic Chemistry; 9 enrolled, 18.0 credit hours, Graduate, Lecture
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 2 enrolled, 7.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 3.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 11.0 credit hours, Graduate, Independent Study.

Teaching Fall 2011

CHEM 343, Organic Chemistry; 155 enrolled, 465.0 credit hours, Upper Division, Undergraduate, Lecture.
CHEM 647, Physical Methods in Organic Chemistry; 13 enrolled, 39.0 credit hours, Undergrad/Graduate, Lecture.

CHEM 691, Senior Research; 1 enrolled, 4.0 credit hours, Undergraduate, Independent Study.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 1 enrolled, 4.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 3.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Summer 2011

CHEM 993, Research Analytical; 1 enrolled, 6.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 1 enrolled, 3.0 credit hours, Graduate, Independent Study.

Teaching Spring 2011

CHEM 748, Physical Organic Chemistry; 10 enrolled, 30.0 credit hours, Upper Division, Graduate Lecture.
CHEM 912, Graduate Seminar; 45 enrolled, 45.0 credit hours, Graduate, Seminar.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 934, Advanced Seminar in Organic Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 990, Research Organic Chemistry; 1 enrolled, 4.0 credit hours, Graduate, Independent Study.
CHEM 993, Research Analytical; 1 enrolled, 8.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 11.0 credit hours, Graduate, Independent Study.

Teaching Fall 2010

CHEM 691, Senior Research; 1 enrolled, 3.0 credit hours, Upper Division, Undergraduate, Independent Studies.
CHEM 912, Graduate Seminar; 56 enrolled, 56.0 credit hours, Graduate, Seminar.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 993, Research Analytical; 1 enrolled, 5.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Summer 2010

CHEM 691, Senior Research; 2 enrolled, 5.0 credit hours, Upper Division, Undergraduate, Independent Studies.

Teaching Spring 2010

CHEM 691, Senior Research; 1 enrolled, 4.0 credit hours, Upper Division, Undergraduate, Independent Studies.
CHEM 931, Advanced Seminar in Analytical Chemistry; 1 enrolled, 1.0 credit hours, Graduate, Seminar.
CHEM 932, Advanced Seminar in Biochemical Chemistry; 2 enrolled, 2.0 credit hours, Graduate, Seminar.
CHEM 993, Research Analytical; 1 enrolled, 5.0 credit hours, Graduate, Independent Study.
CHEM 996, Research Biochemistry; 2 enrolled, 10.0 credit hours, Graduate, Independent Study.

Teaching Fall 2009

CHEM 647, Physical Methods of Organic Chemistry; 11 enrolled, 33.0 credit hours, Upper Division, Undergrad/Graduate, Lecture.
CHEM 691, Senior Research; 2 enrolled, 4.0 credit hours, Upper Division, Undergraduate, Independent Studies.

Current and Past Arnold Group Members

1. Hannah Dunst, Undergraduate Student, "Evaluation of a PI301 formulation in rats" **January 2023 – current.**
2. Taif Al-Dulaini, Undergraduate Student, "Evaluation of a PI301 formulation in rats" **January 2023 – current.**
3. Eden Pinheiro-Smith, Undergraduate Student, "Evaluation of a PI301 formulation in rats" **January 2023 – current.**
4. Ethan Kowalczyk, Graduate Student, "Synthesis and evaluation of novel ligands for the transporter protein TSPO" **January 2023 – current.**
5. Kayode Michelle Medubi, Graduate Student, "Quantification of novel GABA(A) receptor ligands developed for atopic dermatitis in tissues and fluids" **June 2022 – current.**
6. Ahmad Kamal Masoud, Undergraduate Student, "Synthesis of novel GABAAR ligands", **June 2022 – current**

7. Sarah Swartwout, Undergraduate Student, "Synthesis of novel GABAAR ligands", **January 2022 – current.**
8. Molly Kiley, Undergraduate Student, "Determination of cellular toxicity of new drug candidates", **January 2022 – current.**
9. Maija Lee, Graduate Student, "Synthesis of pegylated GABA(A) receptor ligands for Crohn's Disease" **September 2021 – current**
10. Michelle Jean Meyer, Graduate Student, "identification of new treatment for atopic dermatitis targeting the peripheral GABA_A receptor" **September 2021 – current.**
11. Julia Vogt, Undergraduate Student, "Video analysis of scratching behavior for atopic dermatitis", **June 2021 – June 2022.**
12. Anika Tylek, Undergraduate Student, "Preclinical Evaluation of new therapies for neurological disorders", neuropathic pain", **June 2021 – August 2022.**
13. Gabby Haskins, Undergraduate Student, "Midazolam in Anesthesiology", **January 2021 – May 2021.**
14. Brittany MacPherson, Undergraduate Student, "Identification of novel treatments for asthma", **December 2020 – May 2021.**
15. Michelle Jean Meyer, Undergraduate Student, "Preclinical Evaluation of new therapies for neuropathic pain", **December 2020 – May 2021.**
16. Madeline Sandvik, Undergraduate Student, "Novel therapies for neuropathic pain" **September 2020 – December 2020.**
17. Jesus Rodriguez, Undergraduate Student, "Current therapeutic approaches for COVID-19", **September 2020- December 2020.**
18. Daniel Webb, Graduate Student, "Synthesis of vitamin D phase II metabolites" **September 2019 – current.**
19. Taylor Wilcox, Undergraduate Student, "Development of new agents to treat neuropathic pain" **August 2019 – current.**
20. Noorjot Kaur, Undergraduate Student, "Evaluation of cellular and gene toxicity of new imidazodiazepines" **August 2019 – October 2019.**
21. Nicholas Martinez, Undergraduate Student, "Characterization of new imidazodiazepines for Dravet Syndrome" **June 2019 – August 2019.**
22. Brandon Mikulsky, Assistant Scientist at Pantherics Incorporation," Preclinical Development of small molecule asthma treatment MIDD0301" **May 2019 – November 2020.**
23. Dylan Hoffman, Undergraduate Student, "Evaluation of cellular and gene toxicity of new imidazodiazepines and synthesis of fluorescent ligand for VDR" **January 2019 – December 2020.**
24. Ian W. Luecke, Undergraduate Student, "Investigation of CNS effects of novel imidazobenzodiazepines" **January 2019 – May 2019.**
25. Alex Kehoe, Undergraduate Student, "Investigation of CNS effects of novel imidazobenzodiazepines" **June 2018 – August 2019.**
26. Daniel Webb, Undergraduate Student, "Synthesis of an intrinsic fluorescent VDR ligand" **September 2018 – May 2019.**
27. Kelly Pauly, Graduate Student, "Proposal To Validate Groups Of Materials, Rather Than Individual Materials, For USP <233> Elemental Impurities Analysis By ICP-MS" **August 2019 – December 2019.**
28. Mae Stepanski, Undergraduate Student, "Effect of novel imidazobenzodiazepine to reduce airway hyperresponsiveness in ova s/c mice" **January 2018 – December 2018.**
29. Brandon Mikulsky, Undergraduate Student, "Investigating anti-inflammatory properties of novel imidazobenzodiazepines" **January 2018- May 2019.**
30. Nicholas Zahn, Graduate Student, "Investigation of new treatment for pain, asthma and epilepsy" **January 2018 – May 2022.**
31. Porta Montgomery, Undergraduate Student, "Using rotarod studies to determine sedation of new drug candidates" **January 2017- May 2017.**
32. Melissa Schussman, Undergraduate Student, "Analysis of behavioral changes of imidazobenzodiazepine treated mice" **September 2017- May 2018.**
33. Anthony Garcia, Undergraduate Student, "Immunohistochemistry of GABA_AR α 5 subunit in mouse lung and brain" **September 2017- December 2017.**
34. Labina Petrovska "Undergraduate Student, "Development of inhibitors for ExoU- a type III secretion system of Pseudomonas aeruginosa" **June 2017- December 2017.**
35. Jon Gould, "Undergraduate Student, "Synthesis of new pepsin inhibitors" **June 2017 – December 2017.**

36. Alec T. Huber, Undergraduate Student, "Investigation of CNS effects of novel imidazobenzodiazepines" **January 2017- August 2018.**
37. Alessandra Ebben, Undergraduate Student, "Synthesis of calcitroic acid" **January 2017- August 2017.**
38. Ted Harris, Graduate Student, "Asthma and Inflammation" **January 2017 – September 2017.**
39. Tania Mutchie, Graduate Student, "Synthesis of VDR ligands and inhibitor of VDR-coregulator interactions" **January 2017 – May 2021.**
40. Rashid Roni Graduate Student, "Preclinical evaluation using LCMS/MS" **January 2017 – December 2021.**
41. Elliot DeMilo Graduate Student, "Biological investigation of calcitroic acid and its metabolites in vitro and in vivo" **January 2017 – May 2021.**
42. Zakari Saad Agherrabi, Undergraduate Student, "Identification of Novel Pepsin Inhibitors for Target Drugs to Treat Laryngopharyngeal Reflux Disease" **January 2017 – April 2017.**
43. Erica Lutz Undergraduate Student, "Investigation of new drug candidates for asthma" **January 2017 – April 2017.**
44. Victoriia Senych, Undergraduate Student, "Synthesis of calcitroic acid" **June 2016-June 2017.**
45. Rodrigo Rafael Ramos Hernandez, Graduate Student from the University of Veracruzana, "Synthesis of a new intrinsic fluorescent VDR ligand" **January 2016- January 2017.**
46. Ramos Morales Fernando Rafael visiting scholar from the University of Veracruzana, "Synthesis of a new intrinsic fluorescent VDR ligand". **January 2016- January 2017.**
47. Ivette Bravo, graduate student for the University of Veracruzana, "Evaluation of new asthma compounds using microsomal stability studies and rotarod" **May 2016- December 2016.**
48. Owen Philip John Dinauer, Undergraduate Student, "Synthesis of new VDR modulators" **January 2016- April 2016.**
49. Leah Marie Radde, Undergraduate Student, "Identification of new pepsin inhibitors as new treatment for laryngopharyngeal reflux disease (LPRD)" **January 2016 – December 2016.**
50. Benjamin Hartzler, Undergraduate Student, "Determination of GABA(A) receptor subunit in the mouse lung" **September 2015 – December 2016.**
51. Dana Shannon, Undergraduate Student, "Evaluation of small molecule microsomal stability using mass spectrometry" **September 2015 – December 2016.**
52. Nicholas Zahn, Research Intern, "Evaluation of small molecule microsomal stability using mass spectrometry" **June 2015 – December 2017.**
53. Dr. Gloria S. Forkuo, Postdoctoral Associate, "Development of new drugs for asthma by targeting GABA(A) receptors in the lung" **March 2015- October 2017.**
54. Charles Strangl, Undergraduate Student, "Synthesis of VDR-Coregulator Inhibitors" **January 2015-December 2015.**
55. Amanda N. Nieman, Graduate Student, "Targeting gamma aminobutyric acid A receptor to alleviate inflammation for asthma and neuropathic pain" **January 2015 – December 2019.**
56. Olivia B. Yu, Graduate Student, "Modulators of the vitamin D receptor and mucous production in asthma" **January 2015 – May 2019.**
57. Nicholas Zahn, Undergraduate Student, "Pharmacokinetics of novel asthma drugs" **January 2015 – June 2015.**
58. Revathi Kodali, Research Associate, "Evaluation of small molecule microsomal stability using mass spectrometry" **January 2015- December 2019.**
59. DeMarco Dejuan Jones, Undergraduate Student, "The most common superbug: MRSA" **January 2015 – May 2015.**
60. Marina Sidorko, Undergraduate Student, "Quantification of drug candidates in different mouse tissue" **September 2014 – May 2015.**
61. Alexandra Dzubinski, Undergraduate Student, "Development of an in vivo model for laryngopharyngeal reflux disease (LPRD)" **September 2014 – Summer 2015.**
62. Gino Scuncio, Undergraduate Student, "Development of new assays to characterize pepsin inhibitors as new treatment for laryngopharyngeal reflux disease (LPRD)" **September 2014 – May 2016**
63. Chris Goetz, Undergraduate Student, "Identification of novel therapeutics for laryngopharyngeal reflux disease (LPRD)" **May 2014 – September 2015.**
64. Skylar Gabel-Eissens, Undergraduate Student, "Synthesis of VDR-Coregulator inhibitors" **May 2014 – August 2014**
65. Revathi Kodali, Research Intern, "Evaluation of small molecule microsomal stability using mass spectrometry" **January 2014- December 2014.**

66. Kodjo Amedome, Undergraduate Student, "Recent examples of the Buchwald- Hartwig reactions" **January 2014 – May 2014.**
67. Nishita Yvas, Graduate Student, "Development of vitamin D receptor-corepressor inhibitors as novel vitamin D receptor agonists" **January 2013 – May 2014.**
68. Grant Fernstrum, Graduate Student, "Development of reversible vitamin D receptor-coactivator inhibitors" **January 2014 – June 2016.**
69. Luis Sanchez, Undergraduate Student, "Synthesis of non-secosteroidal vitamin D receptor antagonists" **January 2014 – May 2015.**
70. Joshua Victor Preston, Undergraduate Student, "Sequencing of nuclear receptor vectors to establish a plasmid data base" **June 2013 – January 2015.**
71. Jonathan Bogart, Undergraduate Student, "Synthesis of VDR-coactivator inhibitors based on the GW0742 scaffold" **June 2013 – June 2014.**
72. Margaret L. Guthrie, Graduate Student, "Development of pre-clinical high throughput screening assays" **January 2013 – December 2017.**
73. Nicholas Nassif, Undergraduate Student, "Expression and Purification of vitamin D receptor and determination of inhibitor binding modes" **September 2012 – May 2013.**
74. Dr. Preetpal Singh Sidhu, Postdoctoral Researcher, "Development of selective vitamin D receptor-coregulator inhibitors" **August 2012 – May 2014.**
75. Belaynesh Feleke, Graduate Student "Development of non-secosteroidal ligands for the vitamin D receptor" **May 2012 – August 2014.**
76. Jonathan Temmer, Undergraduate Student, "Synthesis of a fluorescent probe for the detection of promiscuous inhibitors" **May 2012 – December 2012.**
77. Nicholas Talerico, Undergraduate Student, "Synthesis of Imines for the parallel synthesis of vitamin D receptor-coactivator inhibitors" **May 2012 – August 2012.**
78. Cynthia Henderson, Undergraduate Student, "Expression and Purification of vitamin D receptor protein" **May 2012 – August 2012.**
79. Robin Goy, Undergraduate Student, "Expression and Purification of retinoid X receptor protein" **May 2012 – May 2014.**
80. Angela Zivkovic, Undergraduate Student, "Synthesis of a Novel Non-secosteroidal Vitamin D Receptor Agonist." **January 2012 – May 2012.**
81. Nina Yina Yuan, Graduate Student, "Development of Cellular High Throughput Assays to Determine the Electrophysiological Profile of GABA(A) Receptor Modulators for Neurology and Immunology" **December 2011 – August 2016.**
82. Chinedum Kevin, Undergraduate Student, "Binding mode identification of small molecule inhibitors of the vitamin D receptor-coactivator interaction" **August 2011 – May 2012.**
83. Nina Yina Yuan, Undergraduate Student, "Development of an automated patch-clamp assay for GABA_A receptor subtype-selective modulators" **May 2011 – August 2011.**
84. Nicholas Talerico, Undergraduate Student, "Synthesis of Coregulator Binding Inhibitors for the Vitamin D Receptor" **May 2011 – August 2011.**
85. Nina Yina Yuan, Undergraduate Student, "An automated subtype-selective GABA_A receptor patch-clamp assay using transiently transfected HEK293T cells" **January 2011 – June 2011.**
86. Kelly A. Teske, Graduate Student, " Part I. The Development of Non-secosteroidal Vitamin D Receptor Modulators Part II. The Development of a Universal GTP-ase Assay" **December 2010 – August 2015.**
87. Dana Pearson, Undergraduate Student, "Large scale expression of the vitamin D receptor ligand binding domain". **August 2010 – December 2010.**
88. Dr. Premchendar Nandhikonda, Postdoctoral Researcher, "Development of a dual vitamin D receptor fluorescence polarization assay and the development of selective vitamin D receptor-coregulator inhibitors" **August 2010 – June 2013.**
89. Travis Russell Dove, Undergraduate Student, "Development of a fluorescently labeled ligand for the vitamin D receptor" **May 2010 – August 2010.**
90. Nina Yina Yuan, Undergraduate Student, "Identification of binding modes of vitamin D receptor-coactivator inhibitors" **May 2010 – August 2010.**
91. Travis Russell Dove, Undergraduate Student, "Determination of cytotoxicity of vitamin D receptor-coactivator inhibitors" **January 2010 – May 2010.**

92. Dr. Wen Zhang, Postdoctoral Researcher, "Development of selective vitamin D receptor-coregulator inhibitors" **January 2010 – August 2010.**
93. Tahniyath Ara, Graduate Student, "Expression, Purification and Crystallization of the vitamin D receptor ligand binding domain" **January 2010 – April 2013.**
94. Athena Baranowski, Graduate Student, "Evaluation of vitamin D receptor-coactivator inhibitors using cell based assays" **January 2010 – August 2013.**
95. Mikola Zhmendak, Undergraduate Student, "Establishment of a chemical inventory system for the Department of Chemistry and Biochemistry" **August 2009 – December 2010.**
96. Nickolas Eric Tadeo, Undergraduate Student, "Theoretical concepts of measuring toxicity in cells" **August 2009 – December 2010.**
97. Megan McCallum, Graduate Student, "High-Throughput Approaches for the Assessment of Factors Influencing Bioavailability of Small Molecules in Pre-Clinical Drug Development" **August 2009 – May 2013.**

2005-2009 *St. Jude Children's Research Hospital, Memphis, TN, United States*

Supervision

1. Priya Velusamy, Research Technologist, **2008-2009**, "Synthesis of ATM kinase inhibitors as chemotherapeutic reagents".
2. Thiaz Rivera Vargas, Student, University Denis Diderot Paris, **2008**, "Identification of natural promoters for T3 regulated genes mediated by thyroid receptors"
3. Cindy Choy, Research Technologist, **2007-2009**, "Parallel synthesis of acridine based anti-malaria drugs"
4. Richard Miskimins, Student, Brigham Young University of Idaho, **2007**, "Assembly of a FDA approved drugs library for HST purpose and HTS screening for glucocorticoid receptor agonists using a specific bioactive compound library" (Second best POE 2007 Basic Science Papers)
5. Florent Ubelmann, Student, University Denis Diderot Paris, **2007**, "Development of a thyroid cancer cell line that stably expressed an T3 responsive luciferase reporter"
6. Min Lu, Senior Research Technologist, **2007-2008**, "Synthesis of small molecule libraries"
7. Patricia Ranaivo, Research Technologist, **2006-2007**, "Synthesis of BODIPY-labeled colchicine"
8. Aaron Kosinski, Research Technologist, **2006-2008**, "Expression of nuclear receptor proteins"
9. Christina Roels, PharmD Student, Wingate University NC, **2006** "Synthesis of Alpha-Helical Proteomimetics Targeting Kaposi's Sarcoma-Associated Herpes Virus (KSHV)". (Second best POE 2006 Basic Science Papers)

2002-2005 *UC San Francisco, San Francisco, CA, United States*

Supervision

1. Gerlof Kruidhof, Student, University of Groningen, **2003** "Synthesis of indole derivatives as potential inhibitors of the nuclear hormone receptor coactivator binding"
2. Dave Smithson, Student, UCSF, **2004** "Synthesis of adenosine analogs as potential inhibitors of purine nucleoside phosphorylases"
3. Lillian Seu, Student, Bernard College, **2004** "Synthesis of biarylethers as ion channel modulators"
4. Andrea C. McReynolds, Research Technologist, **2004-2005** "Expression of the thyroid and androgen hormone receptor proteins"

University of Groningen, Groningen, The Netherlands

Assistant

1. Tutorials for organic chemistry I and II for undergraduate students
2. Organic chemistry lab (I-V) for biologists, chemists, and medical undergraduate students
3. Organometallic chemistry lab for undergraduate chemists

Supervision (Master (Graduate) research project)

1. Hinke Malda, Student, University of Groningen, **1999-2001**, "Copper catalyzed enantioselective allylic alkylation with diorganozinc compounds using phosphoramidite ligands".
2. Anthoni W. van Zijl, Student, University of Groningen, **2000-2002**, "Copper catalyzed enantioselective allylic alkylation with diorganozinc compounds using phosphoramidite ligands".

COMMITTEE AND ADMINISTRATION

PhD and MS Committee:

1. PhD Thesis Committee, Chair, Ethan Kowalczyk, Graduate Student, “Synthesis of novel ligand for the transporter protein TSPO and application as novel agents for asthma” **January 2023 – current**.
2. PhD Thesis Committee, Chair, Kayode Michelle Medubi, Graduate Student, “Quantification of novel GABA(A) receptor ligands developed for atopic dermatitis in tissues and fluids” **January 2022 – current**.
3. PhD Thesis Committee, Chair, Michelle Jean Meyer, Graduate Student, “Identification of new treatment for atopic dermatitis targeting the peripheral GABAA receptor” **September 2021 – current**.
4. PhD Thesis Committee, Chair, Maija Lee, Graduate Student, “Synthesis of pegylated GABA(A) receptor ligands for Crohn’s Disease” **September 2021 – current**
5. PhD Thesis Committee, Member, Ethan Frank Kub, “Comprehensive characterization of ceramides in glioblastoma using mass spectrometry” **August 2020 – current** (PI:Mirza)
6. PhD Thesis Committee, Member, Eron Saxon, “Boron-based theranostics: design, synthesis, mechanism, and biological investigation” **June 2020 – current** (PI: Peng)
7. PhD Thesis Committee, Member, Tye Seideman, “Development of a Cancer Treatment Based on Tryprostatin A and B” **June 2020 – current** (PI:Hossain)
8. PhD Thesis Committee, Member, Jonathan Mielke, “A) Mechanistic studies of Elongator Protein 3 (ELP3) and B) Creating an Artificial Metalloenzyme containing Molybdenum” **June 2020 – current** (PI:Wilcoxon)
9. PhD Thesis Committee Member Chris Harris, “Extractions using thin films of ionic liquids” **March 2020 – current** (PI:Dietz)
10. PhD Thesis Committee Member Dishary Sharmin, “Synthesis of imidazobenzodiazepines for anxiety and depression” **December 2019 – current** (PI:Cook)
11. PhD Thesis Committee Member Towheedur Rahman, “ ” **December 2019 – current** (PI:Hossain)
12. PhD Thesis Committee Member Taufeeque Ali, “Biological evolution of boronic acid based DNA alkylators” **December 2019 – current** (PI: Peng)
13. PhD Thesis Chair, Daniel Webb, “A) Synthesis vitamin D phase II metabolites and B) Synthesis of new achiral GABA_AR to control respiratory inflammation” **September 2019 – current**. (PI:Arnold)
14. PhD Thesis Committee Member Katryna Williams, “Synthesis of beta sheet mimic for destabilization of the beta barrel machinery of bacteria” **January 2019 – June 2022** (PI:Schwabacher)
15. PhD Thesis Committee Member, Nicholas Lewandowski “New anti-bacterial drug synthesis” **January 2019 – current** (PI:Cook)
16. MS Thesis Chair, Kelly Pauly, “Identification of microplastics in water” **September 2018 – December 2018**. (PI:Arnold)
17. PhD Thesis Chair, Nicolas M. Zahn, “Development of novel anti-inflammatory GABA(A) receptor ligands for the treatment of asthma and neuropathic pain” **January 2018- May 2022**. (PI:Arnold)
18. PhD Thesis Committee Member, Alexander Vincent, “Synthesis of an artificial beta-sheet” **January 2018 – current**. (PI:Schwabacher)
19. PhD Thesis Committee Member, Vilashini Rajaratnam, “In vivo evaluation of ceramidase inhibitors” **January 2018 – April 2022**. (PI:Mirza)
20. PhD Thesis Committee Member, Anahit Campbell, “Urine analysis using ICPMS” **August 2017- April 2020**. (PI:Mirza)
21. PhD Thesis Committee Member, Md. Mohiminul Islam, “Identification of biomarkers for Glioblastoma” **August 2017- April 2022**. (PI:Mirza)
22. PhD Thesis Committee member, Trevor Hagemann, “A continuous detector of metal ions in waste water” **August 2017 – April 2022**. (PI:Schwabacher)
23. PhD Thesis Committee Member, Kamal Prasad Pandey, “Synthesis of imidazobenzodiazepine for depression”. **August 2017 – current**. (PI:Cook)
24. PhD Thesis Committee Member, Prithu Mondal, “Synthesis of imidazobenzodiazepine for cancer” **January 2017 – current**. (PI:Cook)
25. PhD Thesis Committee Member, Jawad Bin Belayet, “Acid-catalyzed Reaction of Carbonyl Compounds with Ethyl Diazoacetate” **January 2017 – May 2022**. (PI:Hossain)

26. PhD Thesis Committee Member, Yeunus Mian, "Synthesis of imidazobenzodiazepine for treating schistosomiasis". **January 2017 – April 2022.** (PI:Cook)
27. PhD Thesis Committee Member, Md Asad Uz Zaman, "Effects of the Leaving Groups on Photo-Induced Benzyl Cation Formation and Subsequent DNA Cross-Linking" **January 2017 – current.** (PI:Peng)
28. PhD Thesis Committee Chair, Tania Mutchie, "Synthesis of VDR ligands and inhibitor of VDR-coregulator interactions" **January 2017 – May 2021.** (PI:Arnold)
29. PhD Thesis Committee Chair, Rashid Roni, "Preclinical evaluation of drug candidates using LCMS/MS" **January 2017 – December 2021.** (PI:Arnold)
30. PhD Thesis Committee Chair, Elliot DeMilo, "Biological investigation of calcitroic acid and its metabolites in vitro and in vivo" **January 2017 – May 2021.** (PI:Arnold)
31. PhD Thesis Committee Chair, Ted Harris, "Asthma and Inflammation" **January 2017 – Summer 2017.** (PI:Arnold)
32. PhD Thesis Committee Member, Ahmed Taukir "Development of imidazobenzodiazepine to treat cancer" **January 2016 – June 2022.** (PI:Cook)
33. PhD Thesis Committee Member, Khorshada Jahan, "Development of novel HDAC inhibitors" **September 2016 – December 2021.** (PI:Hossain)
34. PhD Thesis Committee Member, Kevin Wolters, "Extraction with ionic liquids" **October 2016 – December 2021.** (PI:Dietz)
35. PhD Thesis Committee Member, Joseph Roman, "Investigations to determine structure and kinetics of bacterial Renalase" **January 2016 – August 2018.** (PI:Moran)
36. PhD Thesis Committee Member, Nemanja Vuksanovic, "Characterization of nonribosomal peptide synthetases" **September 2015 – December 2020.** (PI:Silvaggi)
37. PhD Thesis Committee Member, Tyler Fenske, "A continuous detector of metal ions in waste water" **January 2015 – May 2019.** (PI:Schwabacher)
38. PhD Thesis Committee Member, Charles Smith, "Determining metal ion transfer from aqueous solution into an ionic liquid" **January 2015 – Spring 2020.** (PI:Dietz)
39. PhD Thesis Committee Member, Daniel Knutson, "Design and synthesis of $\alpha 6$ subtype selective pyrazoloquinolinones with improved metabolic stability and enhanced bioavailability." **January 2015 – Spring 2020.** (PI:Cook)
40. PhD Thesis Committee Member, Farjana Rashid, "Design and synthesis of different BZ/Gabereric subtype selective ligand to treat cancers, pain disorders and schizophrenia via a common early intermediate" **December 2016- June 2021.** (PI:Cook)
41. PhD Thesis Committee Member, Heli Fan, "New anticancer reagents based on oxidative alkylation of DNA" **September 2014 – December 2018.** (PI:Peng)
42. PhD Thesis Committee Member, Surajdeen, Omolabake, "The synthesis of fluorescent 3,6-dihydroxylanthones: a route to substituted fluoresceins". **January 2014 – June 2016.** (PI:Schwabacher)
43. PhD Thesis Committee Chair, Amanda N. Nieman, "Targeting gamma aminobutyric acid A receptor to alleviate inflammation for asthma and neuropathic pain" **January 2015 – December 2019.** (PI:Arnold)
44. PhD Thesis Committee Chair, Olivia B. Yu, "Synthesis of calcitroic acid and its phase II metabolites" **January 2015 – May 2019.** (PI:Arnold).
45. PhD Thesis Committee Member, Monica Thomas (MCW), "Structural and functional analysis on the human chemokine CCL28 with implication for its role in homeostasis and disease" **November 2014 – May 2018.** (PI:Brian Volkman)
46. MS Thesis Committee Chair, Grant Fernstrum, "Synthesis of non-covalent VDR-coactivator inhibitors" **January 2014 - December 2015.** (PI:Arnold)
47. PhD Thesis Committee Member, Lanlan Han, "Structure-Function Relationships in Bacterial Regulatory Proteins and an Enzyme Involved in Antibiotic Biosynthesis" **January 2013 – December 2017.** (PI:Silvaggi)
48. MS Thesis Committee Member, Sarah Oplawski, "Extraction of Indicator dyes into imidiazolium-based ionic liquies" **November 2013 – May 2014.** (PI:Dietz)
49. PhD Thesis Committee Member, German Fonseca, "Enantiospecific Stereospecific Strategy for the Total Synthesis of Sarpagine and Macroline Related Oxindole Alkaloids: First Total Synthesis of Affinisine Oxindole, Isoalstonisine, Alstofoline, Macrogentine, N(1)-demethylalstonisine, Alstonoxine A and Second Generation Synthesis of Alstonisine" **November 2013 – December 2014.** (PI:Cook)
50. PhD Thesis Committee Member, Raiwana Jahan, "The Synthesis of XHE-III-74 and its analog as novel GABA(A) receptor modulators" **November 2013 – May 2019.** (PI:Cook)

51. MS Thesis Committee Member, Kaniz Fatema, - "Reaction of Zinc Proteome with Biologically Important Metal Binding Ligands" **November 2013-April 2014.** (PI:Petering)
52. PhD Thesis Committee Member, Sarah Oehm, "Synthesis of functionalized amino acids and artificial beta-sheets". **October 2013 – April 2018.** (PI:Schwabacher)
53. PhD Thesis Committee Member, Zubair Ahmed Khan, "Towards the total synthesis of hystrixine" **October 2013 – June 2020.** (PI:Cook)
54. PhD Thesis Committee Member, Guanguan Li, "The Synthesis of SH-053-2'F-S-CH₃ and its analog as novel GABA(A) receptor modulators" **October 2013 – May 2019.** (PI:Cook)
55. PhD Thesis Committee Member, Megan Josie Corby, "Interactions of hepatitis C with other viral and cellular proteins" **September 2013 – May 2018.** (PI:Frick)
56. PhD Thesis Committee Member, Eric Lund, "Quantification of the in vivo heavy metal proteome using laser-ablation spectroscopy" **August 2013 – December 2019.** (PI:Petering)
57. PhD Thesis Committee Member, Xavier Sacro Udad, "Immobilizing A Single DNA Molecule In Solution With An Electrical Field" **August 2013 – December 2019.** (PI:Wohl)
58. PhD Thesis Committee Member, Huabing Sun, "Application of Coumarin Derivatives in DNA-associated Study: Mutation Detection, Site-Specific Labeling, Photoinduced Interstrand Cross-Links and Ligation Reactions" **August 2013 – January 2015.** (PI:Peng)
59. PhD Thesis Committee Member, Veera Venkata Naga Phani Babu Tiruveedhula, "Part – I: Development of a Two-step Regiospecific Synthetic Route for Multigram Scale Synthesis of B-carboline Analogs for Studies in Primates as Anti-alcohol Agents, part – II: Design and Synthesis of Novel Antimicrobials for the Treatment of Drug Resistant Bacterial Infections Part – Iii: A Novel Synthetic Method for the Synthesis of the Key Quinine Metabolite (3S)-3-Hydroxyquinine" **July 2013 – August 2017.** (PI:Cook)
60. PhD Thesis Committee Member, Noreena Sweeney, "Discovery and Analysis of Small Molecules that Inhibit the Non-Structural 3 Helicase Enzyme of the Hepatitis C and Dengue Virus" **June 2013 – April 2015.** (PI:Frick)
61. PhD Thesis Committee Member, Lisa Mueller, "Structural and Functional Characterization of Acetoacetate Decarboxylase-Like Enzymes" **March 2013 – July 2016.** (PI:Silvaggi)
62. PhD Thesis Chair, Margaret L. Guthrie, "Development of Pre-Clinical Assays Based on Tandem Mass Spectrometry to Investigate GABA_A Receptor Modulators" **January 2013 – December 2017.**
63. PhD Thesis Committee Member, Yibin Wang, "Arylboronates as H₂O₂ or Photo-Inducible DNA Cross-Linking Agents: Design, Synthesis, Mechanism, and Anticancer Activity" **December 2012 – December 2015.** (PI:Peng)
64. PhD Thesis Committee Member, Mike Poe, "New Treatments for Fibromyalgia, Diabetic Neuropathy, Ghost Limb Pain and other Pain Disorders as well as Schizophrenia" **September 2012 – May 2016.** (PI:Cook)
65. PhD Thesis Committee Member, Bradley Michael Moran, "Experimental Methods in Cryogenic Spectroscopy: Stark Effect Measurements in Substituted Myoglobin" **September 2012 – November 2016.** (PI:Woehl)
66. PhD Thesis Committee Member, Md. Sharif Asad, "Asymmetric Synthesis of All-Carbon α -aryl Quaternary Carbonyl Compounds By Palladium-catalyzed Asymmetric Allylic Alkylation (Pd-AAA) and Their Application to the Synthesis of Biologically Important 3,3'-disubstituted Oxindole and α -disubstituted Quaternary β -lactone Frameworks" **September 2012 – July 2015.** (PI:Hossain)
67. PhD Thesis Committee Member, Md. Mojibul Haque, "Modification of Pyrimidine and Purine Nucleotides By "Click" Chemistry: Design, Synthesis and Properties Study" **September 2012-September 2014.** (PI:Peng)
68. PhD Thesis Committee Member, Abdul Momen, "Improved extraction chromatographic materials for the separation and pre-concentration of metal ions" **September 2012 – May 2015.** (PI:Dietz)
69. PhD Thesis Committee Member, Christopher Michael Witzigmann, "Part 1: Design, Synthesis, and Evaluation of Novel Gram-positive Antibiotics Part 2: Synthesis of Dihydrobenzofurans Via a New Transition Metal Catalyzed Reaction Part 3: Design, Synthesis, and Evaluation of Bz/gabaa A6 Positive Allosteric Modulators" **September 2012 – November 2016.** (PI:Cook)
70. PhD Thesis Committee Member, Mohammad Rezaul Karim, "The Role of Proteome in Cellular Zn²⁺ Trafficking and in the Ability of the Fluorescent Zinc Sensors to Image Intracellular Zn²⁺" **September 2012 – May 2015.** (PI:Petering)
71. MS Thesis Committee Chair, Belaynesh Feleke, "The Development of VDR-coactivator Inhibitors and Their Evaluation Using Biochemical and Cell-based Assays" **September 2011-April 2014.** (PI:Arnold)
72. PhD Thesis Committee Chair, Nina Y. Yuan, "Development of Cellular High Throughput Assays to Determine the Electrophysiological Profile of GABA(A) Receptor Modulators for Neurology and Immunology" **September 2011 – September 2016.** (PI:Arnold)

73. PhD Thesis Committee Chair, Kelly A. Teske, "Part I. The Development of Non-secosteroidal Vitamin D Receptor Modulators Part II. The Development of a Universal GTP-ase Assay". **September 2010 – Summer 2015.** (PI:Arnold)
74. MS Thesis Committee Chair, Athena Baranowski, "Evaluation of vitamin D receptor-coactivator inhibitors using cell-based assays" **September 2009 – December 2013.** (PI:Arnold)
75. MS Thesis Committee Chair, Tahniyath Ara, "Expression, Purification and Crystallization of the vitamin D receptor ligand binding domain" **September 2009 – May 2012.** (PI:Arnold)
76. PhD Thesis Committee Member, Joseph S Ulicki, "Part I: Synthesis and Biological Evaluations of Potent Class L Selective Histone Deacetylase Inhibitors Part II: Aqueous Complexes for Efficient Sizebased Separation of Americium from Curium Part III: Designing Strong Chiral Bronsted Acids and Their Application for Oxaxinanones Derivatization and the Aza-henry Reaction" **September 2009 – December 2014.** (PI:Hossain)
77. PhD Thesis Committee Chair, Megan McCallum, "High-Throughput Approaches for the Assessment of Factors Influencing Bioavailability of Small Molecules in Pre-Clinical Drug Development". **September 2009 – May 2013.** (PI:Arnold)
78. PhD Thesis Committee Member, Matthew Marcus Huisman, "Asymmetric Synthesis of Tryptophan Derivatives and Its Application to Streamlined Synthesis of Tryprostatin A and B" **September 2009 – December 2014.** (PI:Hossain)
79. PhD Thesis Committee Member, Terry Clayton, Part 1. Unified pharmacophoric protein models for the benzodiazepine receptor subtypes; Part 2 subtype selective ligand the $\alpha 5$ GABA_A/Bz receptors". **September 2009 – December 2011.** (PI:Cook)
80. PhD Thesis Committee Member, Chitra R Edwankar, "General approach toward the total synthesis of 10-methoxy indole alkaloids" **September 2009 – December 2011.** (PI:Cook)
81. PhD Thesis Committee Member, Ujala Rana, "Metallothionein: Its role in cellular zinc trafficking" **September 2009 - August 2010.** (PI:Petering)
82. MS Thesis Committee Member, Ivan Kamyshko, "Inhibitory effects of cadmium on spl-regulated SGLT1 gene expression is independent form PKC activation" **September 2009 - August 2010.**(PI:Petering)

Department and University Committees

1. Department committee to identify programs that can attract possible philanthropic and industry donations. **October 2022 – current.**
2. Department committee to support the design and implementation of the new chemistry building. **January 2022 – current.**
3. University Committee to evaluate the need of a BLS3/ABSL3 facility at UWM. **October 2022 - current.**
4. AH Divisional Committee, member, Evaluation of faculty promotion applications. **January 2023 – current.**
5. Academic and Industrial Relationship Subcommittee, Chair, Outreach to local industry, sponsorship and industry collaborations. **September 2021- current.**
6. University Faculty Investigator Committee, member, **August 2021 – November 2021.**
7. University Graduate Program Review Committee, member, **September 2020 -current.**
8. University Academic Program & Curriculum Committee, member, **September 2020 -current.**
9. University IACUC committee, member, Review of IACUC protocols, Animal facility inspections and internal IACUC meetings. **September 2020 – current.**
10. Communications Subcommittee, Chair, Outreach and public relation of the Department. **September 2019- August 2021.**
11. Graduate Student Committee, Member, Graduate Students affairs in respect to TA ship and progression, **September 2019 – current.**
12. Development of a PharmD PhD program between the Department of Chemistry and Biochemistry (UWM) and Concordia University, Chair. **September 2018 – current.**
13. Planning of the MACC (Milwaukee Analytical Chemistry Conference), Member. **For Spring 2019 and Fall 2022.**
14. Department Awards Committee, Chair, Nomination of Faculty for College and University Faculty Awards and periodic evaluation of chemistry faculty. **September 2018 – September 2021.**
15. Faculty Recruitment Ambassador, Interaction with incoming science students in form of workshops and presentations. **July 2017 – August 2019.**

16. Graduate Student Committee, Committee Chair, Graduate Students affairs in respect to TA ship and progression, **September 2017 – August 2019.**
17. University Workplace Safety Policy committee, member, addressing chemical safety at UWM. **May 2017- current.**
18. Graduate Admission Committee, Member, Selection of future graduate student for the department of chemistry and biochemistry. **September 2017 – August 2019.**
19. Mass Spectrometry Technician search and screening committee, Selection of technician for the Shimadzu Center for Analytical and Applied Chemistry. **October 2016 - February 2017.**
20. Advisor of the Chemistry and Biochemistry Graduate Student Council. **September 2015 – current.**
21. Graduate Student Admission Committee, Committee Chair, Selection of future graduate student for the department of chemistry and biochemistry. **September 2015 – August 2017.**
22. Graduate Student Subcommittee, Committee Member, Graduate Students affairs in respect to TA ship and progression. **September 2014 – August 2017.**
23. College and University Faculty Award Committee, Committee Member, Nomination of Faculty for College and University Faculty Awards. **September 2015 – August 2018.**
24. Tenure promotion committee, Committee Member, **June 2015 - December 2015.**
25. Mass spectrometry scientist search and screening committee, Committee Member, Selection of mass spectrometry expert for the Milwaukee Institute for Drug Discovery. **June 2015 – October 2015.**
26. Graduate Admission Committee, Committee Member, Selection of future graduate student for the department of chemistry and biochemistry. **September 2009 – August 2010 and September 2014 – August 2015 and September 2017 – current.**
27. Space Subcommittee, Committee Member, Assessment and distribution of space within the Department of Chemistry and Biochemistry. **September 2013 – August 2014.**
28. Grant writer search and screening committee, Committee Member, Selection of grant writer for MIDD and the department of chemistry and biochemistry. **May 2013 – August 2013.**
29. Department manager search and screening committee, Committee Member, Selection of department manager for the department of chemistry and biochemistry. **October 2012 - January 2013.**
30. Academic Planning Committee, Committee member, Development of future initiatives for the Department of Chemistry and Biochemistry. **August 2012– current.**
31. Undergraduate and Graduate Assessment Subcommittee, Assessment of academic quality standards for chemistry majors of the Department of Chemistry and Biochemistry. **September 2011 – September 2016.**
32. Facility manager search and screening committee, Committee member, Selection of a facility manager for the Department of Chemistry and Biochemistry. **August 2012– April 2013.**
33. Faculty advisor for the Student Affiliates of the American Chemical Society SAACS of the department of chemistry and biochemistry. **September 2010-August 2011.**
34. Director of the Milwaukee Institute of Drug Discovery (MIDD) search and screening committee, Committee member, Selection of director for the MIDD embedded in the Department of Chemistry and Biochemistry. **August 2010 – December 2010.**
35. Mass Spectroscopist search and screening committee, Committee Chair, Selection of mass spectroscopist for the department of chemistry and biochemistry. **March 2010 - August 2010.**

PUBLICATIONS

1. *Structural analogs of the GABA_A receptor KRM-II-81 are orally bioavailable anticonvulsants without sedation* by Kamal Panday, Branka Divović, Farjana Rashid, Lalit Golani, Rok Cerne, Nicolas Zhang, Michelle Meyer, Alexander (Leggy) Arnold, Dishray Sharmin, Md Mian, Jodi Smith, Xingjie Ping, Xiaoming Jin, Arnold Lippa, Veera Tiruveedhula, James Cook, Miroslav Savic, and Jeffrey Witkin.
2. *Title: Development and Validation of LC-MS/MS method for the determination of ARN14988, an acid ceramidase inhibitor, and its application to a pharmacokinetic study in mouse model.* Corresponding Author: Dr. Shama Mirza Co-Authors: Vilashini Rajaratnam, PhD; Mohammad M. Islam, PhD; Ethan F. Kub; Shaarwin Rajaratnam, MD; Kyu B. Kim; Md Toufiqur Rahman, PhD; Farjana Rashid, PhD; Anna M. Benko, PhD; James M. Cook, PhD; Leggy A. Arnold, PhD
3. Jose F. Perez-Zoghbi, Dannah Rae Sajorda, Daniel A Webb, Leggy A Arnold, Charles W. Emala, and Gene T Yocum "Imidazobenzodiazepine PI320 Relaxes Mouse Peripheral Airways by Inhibiting Calcium Mobilization" *American Journal of Respiratory Cell and Molecular Biology* **2022.**

4. Nikki Johnston, Tina L. Samuel, Christopher J. Goetz, Leggy A. Arnold, Brian C. Smith, Donna Seabloom, Beverly Wuertz, Frank Ondrey, Timothy S. Wiedmann, Nemanja Vuksanovic, Nicholas R. Silvaggi, Alexander C. MacKinnon, James Miller, Jonathan Bock, Joel H. Blumin "Oral and Inhaled Fosamprenavir Reverses Pepsin-Induced Damaged in a Laryngopharyngeal Reflux Mouse Model" *The Laryngoscope* **2022**.
5. Negar Khazan, Kyu Kwang Kim, Jeanne N. Hansen, Niloy A. Singh, Taylor Moore, Cameron W. A. Snyder, Ravina Pandita, Myla Strawderman, Michiko Fujihara, Yuta Takamura, Ye Jian, Nicholas Battaglia, Naohiro Yano, Yuki Teramoto, Leggy A. Arnold, Russell Hopson, Keshav Kishor, Sneha Nayak, Debasmita Ojha, Ashoke Sharon, John M. Ashton, Jian Wang, Michael T. Milano, Hiroshi Miyamoto, David C. Linehan, Scott A. Gerber, Nada Kawar, Ajay P. Singh, Erdem D. Tabdanov, Nikolay V. Dokholyan, Hiroki Kakuta, Peter W. Jurutka, Nina F. Schor, Rachael B. Rowswell-Turner, Rakesh K. Singh, and Richard G. Moore "Identification of a Vitamin-D Receptor Antagonist, MeTC7, which Inhibits the Growth of Xenograft and Transgenic Tumors In Vivo" *Journal of Medicinal Chemistry* **2022**, 65(8), 6039-6055.
6. M.S. Rashid Roni, Nicolas M. Zahn, Gene T. Yocum, Daniel A. Webb, Md Yeunus Mian, Michelle J. Meyer, Anika S. Tylek, James M. Cook, Charles W. Emala, Douglas C. Stafford and Leggy A. Arnold "Comparative pharmacodynamic and pharmacokinetic study of MIDD0301 and its (S) enantiomer" *Drug Development Research* **2022**, 83(4), 979-992.
7. Lalit K Golani, Branka Divović, Dishary Sharmin, Kamal P Pandey, Md Yeunus Mian, Rok Cerne, Nicolas M Zahn, Michelle J Meyer, Veera VNPB Tiruveedhula, Jodi L Smith, Xingjie Ping, Xiaoming Jin, Arnold Lippa, Jeffrey M Schkeryantz, Leggy A Arnold, James M Cook, Miroslav M Savić, Jeffrey M Witkin "Metabolism, pharmacokinetics, and anticonvulsant activity of a deuterated analog of the α 2/3-selective GABA_k KRM-II-81" *Biopharmaceutics & Drug Disposition* **2022**, 43(2), 66-75.
8. Jawad Bin Belayet, Sarah Beamish, MD Mizzanoor Rahaman, Samer Alanani, Rajdeep Viridi, David Frick, A.F.M. Towheedur Rahman, Joseph Ulicki, Sreya Biswas, Leggy A. Arnold, M.S. Rashid Roni, Eric Cheng, Douglas Steeber, Karyn Frick and M. Mahmum Hossain "Development of a novel, small-molecule brain-penetrant histone deacetylase inhibitor that enhances spatial memory formation in mice" *Journal of Medicinal Chemistry* **2022**, 65(4), 3388-3403.
9. Nicolas M. Zahn, M.S. Rashid Roni, Gene T. Yocum, Michelle J. Meyer, Daniel A. Webb, Md Yeunus Mian, James M. Cook, Douglas C. Stafford, Charles W. Emala, and Leggy A. Arnold Development of inhaled GABA(A) receptor modulators to improve airway function in bronchoconstrictive disorders" *ACS Pharmacology & Translational Science* **2022**, 5(2), 80-88.
10. M.S. Rashid Roni, Nicolas M. Zahn, Brandon N. Mikulsky, Daniel A. Webb, Md Yeunus Mian, Daniel E. Knutson, Margaret L. Guthrie, James M. Cook, Douglas C. Stafford, Leggy A. Arnold "Identification and Quantification of MIDD0301 metabolites" *Current Drug Metabolism* **2021**, 22(14), 1114-1123.
11. Olivia B. Yu, Daniel A. Webb, Elliot S. Di Milo, Tania R. Mutchie, Kelly A. Teske, Taosheng Chen, Wenwei Lin, Carole Peluso-Iltis, Natacha Rochel, Moritz Helmstädter, Daniel Merk and Leggy A. Arnold, "Biological Evaluation and Synthesis of Calcitroic Acid" *Bioorganic Chemistry* **2021**, 116, 105310.
12. Heli Fan, Muhammad Asad Uz Zaman, Wenbing Chen, Taufeeque Ali, Anahit Campbell, Qi Zhang, Nurul Islam Setu, Eron Saxon, Nicolas M. Zahn, Anna M. Benko, Leggy A. Arnold, and Xiaohua Peng "Assessment of Phenylboronic Acid Nitrogen Mustards as Potent and Selective Drug Candidates for Triple-Negative Breast Cancer" *ACS Pharmacology & Translational Science* **2021**, 4(2), 687-702.
13. Nicolas M. Zahn, Brandon N. Mikulsky, M. S. Rashid Roni, Gene T. Yocum, Md Yeunus Mian, Daniel E. Knutson, James M. Cook, Charles W. Emala, Douglas C. Stafford, and Leggy A. Arnold "Nebulized MIDD0301 Reduces Airway Hyperresponsiveness in Moderate and Severe Murine Asthma Models" *ACS Pharmacology & Translational Science* **2020**, 3(6), 1381-1390.
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15. Guanguan Li, Amanda N. Nieman, Md Yeunus Mian, Nicolas M. Zahn, Brandon N. Mikulsky, Michael M. Poe, Kashi R. Methuku, Yongfeng Liu, James M. Cook, Douglas C. Stafford, and Leggy A. Arnold "A Structure-Activity Relationship Comparison of Imidazodiazepines Binding at Kappa, Mu, and Delta Opioid Receptors and the GABA_A Receptor" *Molecules* **2020**, 25(17), 3864.
16. Daniel E. Knutson, M.S. Rashid Roni, Md Yeunus Mian, James M. Cook, Douglas C. Stafford, and Leggy A. Arnold "Improved scale-up synthesis and purification of clinical asthma candidate MIDD0301" *Organic Process Research & Development* **2020**, 24(8), 1467-1476.

17. Amanda N. Nieman, Guanguan Li, Nicolas M. Zahn, Md Yeunus Mian, Brandon N. Mikulsky, Dylan A. Hoffman, Taylor M. Wilcox, Alexander S. Kehoe, Ian W. Luecke, Michael M. Poe, David Alvarez-Carbonell, James M. Cook, Douglas C. Stafford, and Leggy A. Arnold "Targeting Nitric Oxide Production in Microglia with Novel Imidazodiazepines for Nonsedative Pain Treatment" *ACS Chemical Neuroscience* **2020**, 11(13), 2019-2030.
18. M.S. Rashid Roni, Guanguan Li, Brandon N. Mikulsky, Daniel E. Knutson, Md Yeunus Mian, Nicolas M. Zahn, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "The effects of pH on the structure and bioavailability of imidazobenzodiazepine-3-carboxylate MIDD0301" *Molecular Pharmaceutics* **2020**, 17(4), 1182-1192.
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23. Tania R. Mutchie, Olivia B. Yu, Elliot S. Di Milo, and Leggy A. Arnold "Alternative binding sites at the vitamin D receptor and their ligands" *Molecular and Cellular Endocrinology* **2019**, 485, 1-8.
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26. Gene T Yocum, Jose F Perez-Zoghbi, Jennifer Danielsson, Aisha S Kuforiji, Yi Zhang, Guanguan Li, MS Rashid Roni, Revathi Kodali, Douglas C Stafford, Leggy A. Arnold, James M Cook, Charles W Emala Sr "A Novel GABA_A Receptor Ligand MIDD0301 with Limited Blood-Brain Barrier Penetration Relaxes Airway Smooth Muscle Ex Vivo and In Vivo" *American Journal of Physiology-Lung Cellular and Molecular Physiology* **2019**, 316(2), L385-L390.
27. Wenbing Chen, Heli Fan, Kumudha Balakrishnan, Yibin Wang, Huabing Sun, Yukai Fan, Varsha Gandhi, Leggy A. Arnold, and Xiaohua Peng "Discovery and Optimization of Novel Hydrogen Peroxide Activated" *Journal of Medicinal Chemistry* **2018**, 61, 9132-9145.
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29. Gloria S. Forkuo, Amanda N. Nieman, Revathi Kodali, Nicolas M. Zahn, Guanguan Li, M. S. Rashid Roni, Michael Rajesh Stephen, Ted W. Harris, Rajwana Jahan, Margaret L. Guthrie, Olivia B. Yu, Janet L. Fisher, Gene T. Yocum, Charles W. Emala, Douglas A. Steeber, Douglas C. Stafford, James M. Cook, and Leggy A. Arnold "A Novel Orally Available Asthma Drug Candidate That Reduces Smooth Muscle Constriction and Inflammation by Targeting GABA(A) Receptors in the Lung" *Molecular Pharmaceutics* **2018**, 15, 1766-1777.
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32. Kelly A. Teske, Jonathan W. Bogart and Leggy A. Arnold "Novel VDR antagonists based on the GW0742 scaffold" *Bioorganic & Medicinal Chemistry Letters* **2018**, 28, 351-354.
33. Katherine M. J. McMurray, Marcia J. Ramaker, A. M. Barkley-Levenson, Preetpal S. Sidhu, Pavel Elkin, K. M. Reddy, Margaret L. Guthrie, James M. Cook, Viresh H. Rawal, Leggy A. Arnold, Stephanie C. Dulawa, Abraham A. Palmer, "Identification of a novel, fast-acting GABAergic antidepressant" *Molecular Psychiatry* **2018**, 23, 384-391.
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36. Jeffrey M. Witkin, Rok Cerne, M. Wakulchik, J. S., S.D. Gleason, Timothy M. Jones, Guangan Li, Leggy A. Arnold, Jun-Xu Li, Jeffrey M. Schkeryantz, Kashi R. Methuku, James M. Cook, Michael M. Poe "Further evaluation of the potential anxiolytic activity of imidazo[1,5-a][1,4]diazepin agents selective for $\alpha 2/3$ -containing GABA_A receptors" *Pharmacology, Biochemistry and Behavior* **2017**, 157, 35-40.
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Activities of Cholesterol and Vitamin D Metabolites *European Journal of Medicinal Chemistry* **2016**, 109, 238-246.

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BOOK CHAPTERS

1. Daniel Webb, Maija Lee and Leggy A. Arnold “Modulating Vitamin D Receptor–Coregulator Binding with Small Molecules” in *Vitamin D, Volume 2: Health, Disease and Therapeutics*, David Feldman, Ed.; Academic Press, Fifth Edition, **2022**.
2. Tania R. Mutchie, Daniel A. Webb, Elliot S. Di Milo and Leggy A. Arnold “Strategy for the Design for Vitamin D Receptor Ligands” in *Nuclear Receptors* Mostafa Z. Badr Ed.: Springer Nature, Cham Switzerland, **2021**, 199-217.
3. Olivia B. Yu, Leggy A. Arnold “Modulating Vitamin D Receptor–Coregulator Binding with Small Molecules” in *Vitamin D, Volume 2: Health, Disease and Therapeutics*, David Feldman, Ed.; Academic Press, Fourth Edition, **2018**, 657-666.
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6. Ben L. Feringa, Robert Naasz, Rosalinde Imbos, Leggy A. Arnold ‘Enantioselective Catalytic Conjugate Addition of Organozinc Reagents” in *Modern Organocopper Chemistry*, Norbert Krause, Ed.; Wiley, VCH Weinheim, **2002**, 59-68.

INVITED PRESENTATIONS

1. Leggy Arnold and M. S. Rashid Roni “Analysis of physiochemical and pharmacokinetic properties of asthma drug candidate MIDD0301” *Milwaukee Analytical Chemistry Conference*, August 29th, **2022**.
2. Leggy Arnold “Drug Discovery in Milwaukee (MIDD)” *MIDD Symposium*, 6th Milwaukee Symposium on Optical Micro-spectroscopy & Molecular Imaging, August 26th, **2022**.
3. Leggy Arnold “MIDD – Another decade of progress” *MIDD Symposium*, January 18th, **2022**.
4. Leggy Arnold “Targeting peripheral GABA(A) receptors with small molecules” *MIDD Symposium*, January 18th, **2022**.
5. Leggy Arnold “How to target the peripheral GABAergic System with Small Molecules” *MilliporeSigma*, November 17th, **2021**.
6. Leggy Arnold, Brandon Mikulsky, M. S. Rashid Roni, Daniel Knutson, Md Yeunus Mian, Gene Yocum, Charles Emala, Nicolas Zahn, Daniel Webb, James Cook, Douglas Stafford “Nebulized MIDD0301 is Efficacious in Allergic and Microbial Lung Inflammation Models” *AAAAI meeting*, virtual, March **2021**.
7. Leggy A. Arnold, Brandon Mikulsky, M. S. Rashid Roni, Daniel Knutson, Md Yeunus Mian, Gene T. Yocum, Charles W. Emala, Nicolas M. Zahn, James M. Cook, Douglas C. Stafford “Investigation of Drug Candidate MIDD0301 as an Oral Controller and Companion Inhaler Medication for Severe Asthma and COPD” *AAAAI meeting*, Philadelphia, Pennsylvania, March **2020**.
8. Leggy A. Arnold “Development of a new therapy for asthma that specifically targets GABA_A receptors in the lung” *5th Biennial Symposium on Optical Micro-spectroscopy & Molecular Imaging*, UWM, August 20th, **2019**.
9. Leggy A. Arnold and Douglas C. Stafford “Introduction of a UWM startup company Pantherics, Incorporated to marked first-in-class drug for asthma”, *Board of Regents Meeting*, UWM, June 8th **2018**.

10. Leggy A. Arnold, Gloria S. Forkuo, Amanda N. Nieman, Guanguan Li, Charles W Emala, James Cook, Douglas C. Stafford "MIDD0301: A first-in-class drug for asthma" *Allegrapharm*, Hamburg Germany, May 29th, **2018**.
11. Leggy A. Arnold, Olivia B. Yu, Elliot DiMilo, Revathi Kodali "Calcitroic acid and its phase II metabolites" *Vitamin D Workshop*, Barcelona Spain, May 24th, **2018**.
12. Leggy A. Arnold, Gloria S. Forkuo, Amanda N. Nieman, Oliva Yu, Margaret L. Guthrie, Revathi Kodali, Michael Stephen, Charles W Emala, Gene Yocum, James Cook, Douglas C. Stafford, Mitchell H Grayson "Clinical Drug Candidate MIDD0301 is a Novel Oral Asthma Treatment combating Inflammation and Muscle Constriction in the Lung" *AAAAI meeting*, Orlando, Florida, March **2018**.
13. Leggy A. Arnold, Gloria S. Forkuo, Amanda N. Nieman, Oliva Yu, Margaret L. Guthrie, Revathi Kodali, Michael Stephen, Charles W Emala, Gene Yocum, James Cook, Douglas C. Stafford, Mitchell H Grayson, Leggy A. Arnold "Drug Discovery at UWM" *UWM Research Foundation meeting*, Milwaukee, September 20th, **2017**.
14. Leggy A. Arnold "Development of new therapies for asthma based on compounds that specifically target GABA_A receptors in the lung" *Feringa Academic Alumni Symposium*, Groningen, The Netherlands, September 14-15 September, **2017**.
15. Leggy A. Arnold "Vitamin D research- From the past today" *UWM, Science Olympiad*, Milwaukee, April, 8th **2017**.
16. Leggy A. Arnold "Development of a new therapies for asthma based on compounds that specifically target GABA_A receptors in the lung" *253rd ACS National Meeting*, San Francisco, April 2nd, **2017**.
17. Leggy A. Arnold "Cancer and Immunology" *Venture Investor Meeting*, February 24th, **2017**.
18. Leggy A. Arnold "All about vitamin D", *Lecture Series at UWM (science bag)*, February **2017**.
19. Leggy A. Arnold "Application of mass spectrometry in vitamin D receptor research" *Shimadzu Journal* Volume 3, Issue 3, September **2015**.
20. Leggy A. Arnold "Small molecule-mediated gene regulation caused by vitamin D receptor-coactivator binding inhibition" *Symposium, Medical College of Wisconsin*, Department of Biochemistry, Oct 8th, **2014**.
21. Leggy A. Arnold "Novel Modulators for the Vitamin D Receptor As Drug Candidate" *Symposium, University of Groningen*, Groningen, Netherlands, July 31th, **2014**.
22. Leggy A. Arnold "The workings of Drug Discovery in Academia" *Symposium at the Blood Center of Wisconsin*, Milwaukee, July 8th, **2014**.
23. Leggy A. Arnold "Vitamin D Receptor-Coregulator Inhibitors as Anticancer Agents" *Vitamin D Workshop*, Chicago, June 16th-20th, **2014**.
24. Leggy A. Arnold "High-Throughput Screening and Assay Development" *Medical College of Wisconsin*, Milwaukee, April 10th, **2014**.
25. Leggy A. Arnold "Molecules" *UWM, recruitment event*, Milwaukee, March, **2014**.
26. Leggy A. Arnold "Discovery of transcriptional modulators that target the vitamin D receptor" *247nd ACS National Meeting*, Dallas, March 16th, **2014**.
27. Leggy A. Arnold "Novel Vitamin D receptor Modulators as Drug Candidates" *University of Illinois at Chicago*, February 21th, **2014**.
28. Leggy A. Arnold "Discovery and Development of non-secosteroid vitamin D receptor antagonists." *University of Wisconsin Whitewater*, October 10th, **2013**.
29. Leggy A. Arnold "Identification and Development of Three Different Classes of Vitamin D Receptor-Coactivator Inhibitors" *Medical College of Wisconsin*, May 30th, **2013**.
30. Leggy A. Arnold "Small molecule inhibitors of the vitamin D receptor-coactivator interaction: An HTS approach" *Concordia University Wisconsin*, October 10th, **2012**.
31. Leggy A. Arnold "High throughput screening and assay development" *Medical College of Wisconsin*, May 31th, **2012**.
32. Leggy A. Arnold "Discovery of small molecule inhibitors of the vitamin D receptor-coregulator interaction" *Northeast Ohio Medical University*, March 23th, **2012**.
33. Leggy A. Arnold and Nina Y. Yuan "Automated patch clamp to determine GABA_A receptor subtype selectivity of novel benzodiazepines" *Webinar hosted by WebEx*, December 12th, **2011**.
34. Leggy A. Arnold and Nina Y. Yuan "Automated patch clamp to determine GABA_A receptor subtype selectivity of novel benzodiazepines" *Automated Patch Clamp Systems & Ion Channel Expressing Cells*, Akihabara UDX, Tokyo, Japan, November 8, **2011**.
35. Leggy A. Arnold "First Identification of Irreversible Inhibitors of the Vitamin D Receptor-Coregulator Interaction" *Northern Illinois University*, DeKalb, IL, United States, October 3, **2011**.

36. Leggy A. Arnold “Discovery of small molecule inhibitors of the vitamin D receptor-coregulator interactions as transcriptional regulators for the 24-hydroxylase gene CYP24A1” *242nd ACS National Meeting*, Denver, Colorado, August 29, **2011**.
37. Leggy A. Arnold, Jong Y. Hwang, Prabodh Sadana, Fangyi Zhu, R. Kiplin Guy” Thyroid Receptor-Coregulator Inhibitors as potential regulators for metabolic diseases” *Gordon-Kenan Research Conference - High Throughput Chemistry & Chemical Biology*, New London, NH, United States, **2009**.
38. Leggy A. Arnold and R. Kiplin Guy “Nuclear Hormone Receptor-Coregulator Interactions as Novel Targets in Drug Discovery” *University of Memphis*, United States, **2009**.
39. Leggy A. Arnold and R. Kiplin Guy “Phosphoramidites, superior ligands in asymmetric catalytic transformations and the discovery of a small molecule inhibitor of the thyroid receptor-coregulator binding” *North Carolina State University*, United States, **2009**.
40. Leggy A. Arnold and R. Kiplin Guy “Phosphoramidites, superior ligands in asymmetric catalytic transformations and the discovery of a small molecule inhibitor of the thyroid receptor-coregulator binding” *University of Wisconsin*, Milwaukee, United States, **2009**.
41. Leggy A. Arnold, Clémentine Féau, JongYeon Hwang, Prabodh Sadana and R. Kiplin Guy “Nuclear Hormone Receptor-Coregulator interactions as novel targets in drug discovery” *St Jude Children’s Research Hospital*, United States, **2008**.
42. Leggy A. Arnold, Eva Estébanez-Perpiñá, Paul Webb, Robert J. Fletterick, John D. Baxter, R. Kiplin Guy “New Small Molecule Inhibitors of the Thyroid Hormone Receptor-Coactivator interaction” *SBS 13th Annual Meeting*, Montréal, Canada, **2007**.
43. Leggy A. Arnold, Eva Estébanez-Perpiñá, Clementine Feau, Paul Webb, Robert J. Fletterick, R. Kiplin Guy “Nuclear Hormone Receptor-Coregulator Interactions as Novel Targets in Drug Discovery” *University of Tennessee Memphis*, TN, United States **2006**.
44. Leggy A. Arnold, Eva Estébanez-Perpiñá, Robert J. Fletterick, R. Kiplin Guy “Nuclear Receptor Rational Drug Design; Androgen Receptor and Thyroid Receptor Hand-in-Hand” *Nuclear Receptor Seminar*, UC San Francisco, CA, United States **2005**.
45. Leggy A. Arnold and R. Kiplin Guy “Non-peptide Nuclear Receptor Coregulators” *California State University Chico*, United States, **2003**.
46. Leggy A. Arnold and Ben L. Feringa “Catalytic Asymmetric Total Synthesis of Prostaglandin E₁ Methyl Ester” *223rd ACS National Meeting*, Orlando (FL), United States, **2002**.
47. Leggy A. Arnold and Ben L. Feringa “Prostaglandins and Phosphoramidites” *University of California, San Francisco*, United States, **2002**.
48. Leggy A. Arnold and Ben Feringa “Total Synthesis of Prostaglandin E₁ (PGE₁)” *Thesis Defense, University of Groningen*, **2002**.
49. Leggy A. Arnold and Ben L. Feringa “Enantioselective Copper-Catalyzed Allylic Alkylation with Organozinc Compounds Using Phosphoramidite Ligands” *EET-Meeting (Economy, Ecology, Technology) by the Dutch Ministry of Economic Affairs and DSM*, Groningen, **2001**.
50. Leggy A. Arnold and Ben L. Feringa “New Phosphoramidite Ligands for the Enantioselective Copper-Catalyzed 1,4-Addition of Diethylzinc to Enones” *NCCC Conference*, Noordwijkerhout, The Netherlands **2001**.
51. Leggy A. Arnold and Ben L. Feringa “Catalytic conjugate addition reaction” *EET-Meeting (Economy, Ecology, Technology) by the Dutch Ministry of Economic Affairs and DSM*, Amsterdam, **2000**.
52. Leggy A. Arnold and Ben L. Feringa “Highly Enantioselective Catalytic Conjugate Addition Reaction and Applications of Phosphoramidite Ligands” *NWO-CW Conference*, Lunteren, The Netherlands **1999**.
53. Leggy A. Arnold and Ben L. Feringa “New Catalysts Based on Phosphoramidites” *EET-Meeting (Economy, Ecology, Technology) by the Dutch Ministry of Economic Affairs and DSM*, Maastricht, **1999**.
54. Leggy A. Arnold and Ben L. Feringa “Phosphoramidites - The Next Generation of Highly Enantioselective Copper Catalyzed 1,4-Addition to enones” *Thesis Defense, University of Groningen*, **1998**.

POSTER PRESENTATIONS

1. Leggy A. Arnold, Gloria S. Forkuo, Margaret L. Guthrie, Nina Y. Yuan, Amanda N. Nieman, Revathi Kodali, Rajwana Jahan, Ted W. Harris, Gene Yocum, Michael Stephen, Michael Poe, Guanguan Li, Olivia B. Yu, Benjamin Hartzler, Nicholas Zahn, Charles W Emala, Douglas C. Stafford, James M. Cook, Mitchell H. Grayson, “New Oral Treatments for Asthma through Tissue-Specific Modulation of the GABA_A Receptor” *AAAAI meeting*, Atlanta, Georgia, March **2017**.

2. Leggy A. Arnold, PhD, Gloria S. Forkuo, PhD, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Charles W Emala, James M. Cook, PhD, Douglas C. Stafford, PhD, Mitchell H. Grayson, "A New Pharmacological Approach for Asthma through Tissue-Specific Modulation of the GABA(A) Receptor" *AAAAI meeting*, Los Angeles, March **2016**.
3. Leggy A. Arnold, Premchendar Nandhikonda, Adam Yasgar, Preetpal S. Sidhu, Kelly A. Teske, Belaynesh Dejene Feleke Ganesha Rai, Robert Smith, William Leister, Frank Schoenen, Daniel D. Bikle, "Identification and development of three new distinct classes of non-secosteroidal VDR modulators for metabolic diseases and cancer" *Vitamin D workshop*, San Francisco, **2013**.
4. Leggy A. Arnold, Premchendar Nandhikonda, Adam Yasgar, Preetpal S. Sidhu, Kelly A. Teske, Belaynesh Dejene Feleke Ganesha Rai, Robert Smith, William Leister, Frank Schoenen, Daniel D. Bikle, "Identification and development of three new distinct classes of non-secosteroidal VDR modulators" *Gordon Research Conference - High Throughput Chemistry & Chemical Biology*, June 2-7, New London, NH **2013**.
5. Leggy A. Arnold, Premchendar Nandhikonda, Adam Yasgar, Kelly A. Teske, Athena M. Baranowski, Megan McCallum, Daniel D. Bikle, Steven D. Ayers, Paul Webb, Ganesha Bantukallu, Anton Simeonov, Ajit Jadhav, David Maloney "Development of the first non-secosteroid antagonists to modulate Vitamin D Receptor function" *2nd Congress on Steroid Research*, Chicago, **2013**.
6. Leggy A. Arnold, Premchendar Nandhikonda, Megan M. McCallum, Athena Baranowski, Kelly A. Teske, Tahniyath Ara, Nina Y. Yuan, Jonathan James Temmer, Belaynesh Dejene Feleke, Nicholas A Talerico, Cynthia Catherine Henderson, Westley Goy Robin "Assay Development and High Throughput Screening" *CTSI Drug Development Collaborative Workshop*, Medical College of Wisconsin, **2012**.
7. Leggy A. Arnold. Premchendar Nandhikonda, Wen Z. Lynt, Megan M. McCallum, Tahniyath Ara, Athena M. Baranowski, Nina Y. Yuan, Kelly A. Teske, Belaynesh D. Feleke, Diana Pearson, Daniel D. Bikle, R. Kip Guy "Identification of small molecule VDR-coregulator inhibitors using high throughput screening" *Vitamin D workshop*, Houston, **2012**.
8. Leggy A. Arnold, Jong Y. Hwang, Prabodh Sadana, Fangyi Zhu, R. Kiplin Guy" Irreversible Thyroid Receptor Coactivator Modulators: Structure-activity relationship study and their application for chemical biology *NIH workshop: Chemical Approaches to Nuclear Receptor and Metabolism*, Bethesda, **2009**.
9. Leggy A. Arnold, Jong Y. Hwang, Aaron Kosinski, R. Kiplin Guy "Development of a WRO cell line that stably expresses a thyroid responsive luciferase reporter for high throughput detection of transcriptional thyroid receptor modulators *Keystone Symposia: Nuclear Receptor: Orphan Brothers and Steroid Sisters*, Whistler, Canada, **2008**.
10. Leggy A. Arnold, Eva Estébanez-Perpiñá, Jong Y. Hwang, Aaron Kosinski, Paul Webb, John D. Baxter, Robert J. Fletterick, R. Kiplin Guy "Small Molecule Inhibitors of the Thyroid Hormone Receptor-Coregulator Interaction" *Keystone Symposia: Nuclear Receptor Pathways to Metabolic Regulation & Metabolic Syndrome and Cardiovascular Risk*", Steamboat Springs, CO, **2007**.
11. Leggy A. Arnold, Eva Estébanez-Perpiñá, Robert J. Fletterick, R. Kiplin Guy "Discovery of Small Discovery of Small Molecule Inhibitors of Thyroid Hormone Receptor" *Drug Discovery Technology & Development*, Boston, MA, United States **2005**.
12. Leggy A. Arnold, Wenchen Luo, R. Kip Guy "Towards the synthesis of a selective non-peptide hormone receptor modulator" *CCB/Biophysics Retreat*, Pacific Grove, CA, United States **2003**.
13. Leggy A. Arnold, Anthoni W. van Zijl, Hinke Malda, Ben L. Feringa "Enantioselective Copper-Catalyzed Allylic Alkylation with Diorganozinc Compounds using Phosphoramidite Ligands" *223rd ACS National Meeting*, Orlando, FL, United States **2002**.
14. Leggy A. Arnold, Robert Naasz, Adri J. Minnaard, Ben L. Feringa "Catalytic Enantioselective Synthesis of Prostaglandin E1 Methyl Ester using a Tandem 1,4-Addition-Aldol Reaction to a Cyclopenten-3,5-dione Monoacetal" *ESOC-12 "12th European Symposium on Organic Chemistry"* Groningen, Netherlands **2001**.
15. Leggy A. Arnold, Robert Naasz, Adri J. Minnaard, Ben L. Feringa "New Phosphoramidite Ligands for the Enantioselective Copper-Catalyzed 1,4-Addition of Diethylzinc to Enones " *NWO-CW Conference*, Lunteren, The Netherlands **2000**.

STUDENT PRESENTATIONS

1. Daniel A. Webb, Douglas C. Stafford, Leggy A. Arnold "Determination of Solubility and Permeability for Novel Imidazobenzodiazepines with Potential Application as an Orally Available Asthma Medication" *Milwaukee Analytical Chemistry Conference*, August 29th, **2022**.

2. Kayode M. Medubi, Daniel A. Webb, Anna M. Benko, Michelle J. Meyer, and Leggy A. Arnold "Optimization of a LCMS-MS method to quantify DAW-III-30 and determination of its metabolic stability" *Milwaukee Analytical Chemistry Conference*, August 29th, **2022**. (Best graduate student poster award)
3. Taylor M. Wilcox, Amanda N. Nieman, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Development of new treatments for neuropathic pain based on imidazodiazepines" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**.
4. Julia Vogt, Daniel A. Webb, and Leggy A. Arnold "Synthesis of racemic MIDD0301" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**.
5. Sarah A. Swartwout, Daniel A. Webb, Leggy A. Arnold "Optimization of a Novel Synthetic Route to Generate New MIDD0301 Analogs" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**. (second best poster award)
6. Anika Tylek, Michelle J. Meyer, Md Yeunus Mian, Dishary Shamin, James M. Cook, and Leggy A. Arnold "Assessment of new drug candidates with respect to cytotoxicity and sensorimotor inhibition" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**. (best poster award)
7. Molly Kiley, Michelle J. Meyer, Daniel A. Webb, Md Yeunus Mian, James M. Cook, and Leggy A. Arnold "Determining Drug Candidate Potency via a Cytotoxicity Assay with HEK293T Cells" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**.
8. Michelle Meyer, Nicolas N. Zahn, Leggy A. Arnold "Determination of Lung TSLP Levels in OVA s/c Mice Treated Orally with GABAA receptor modulator MIDD0301" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**.
9. Daniel A. Webb, Michelle J. Meyer, Anika S. Tylek, Sarah A. Swartwout, Md S. Rashid Roni, Gene T. Yocum, Charles W. Emala, Douglas C. Stafford and Leggy A. Arnold "Synthesis and Evaluation of Disubstituted Imidazodiazepines Using a Novel Synthetic Strategy to Generate Compounds with Potential Application as an Orally Available Asthma Medication" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 22nd, **2022**. (Best poster award)
10. Taylor M. Wilcox, Amanda N. Nieman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Development of new treatments for neuropathic pain based on imidazodiazepines" *American Chemical Society local section meeting, Milwaukee*, October 27th, **2021**. (Second best poster award)
11. Daniel Webb, Md S. Rashid Roni, Md Yeunus Mian, Douglas C. Stafford, James M. Cook, Leggy A. Arnold "Development of a Novel Synthetic Strategy That Enables the Generation of Disubstituted Imidazodiazepines With Potential Application as Orally Available Asthma Medication" *American Chemical Society local section meeting, Milwaukee*, October 27th, **2021**. (Best poster award)
12. Michelle Meyer, Nicolas M. Zahn, James M. Cook, Douglas C. Stafford and Leggy A. Arnold, "Cell Viability, Motor Performance, and Behavioral Assessments of New Drug Candidates" *UW System Symposium*, UW Whitewater, April 28th, **2021**.
13. M.S. Rashid Roni, Nicolas M. Zahn, Brandon Mikulsky, Md Yeunus Mian, Daniel A. Webb, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Metabolism and drug disposition of clinical asthma compound MIDD0301 in mice" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 23th, **2021**.
14. Daniel Webb, MS Rashid Roni, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Synthesis of MIDD0301 Phase II Metabolites and Application of Amino Acid N-Carboxy Anhydrides to Generate New MIDD0301 Analogs" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 23th, **2021**.
15. Nicolas Zahn, Brandon N. Mikulsky, M.S. Rashid Roni, Gene T. Yocum, Md Yeunus Mian, Daniel E. Knutson, James M. Cook, Charles W. Emala, Douglas C. Stafford, Leggy A. Arnold "Nebulized MIDD0301 Reduces Airway Hyperresponsiveness and Bronchoconstriction in Murine Models" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 23th, **2021**.
16. Taylor M. Wilcox, Amanda N. Nieman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold, "Development of new treatments for neuropathic pain based on imidazodiazepines"; *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 23th, **2021**.
17. Michelle Meyer, Nicolas M. Zahn, James M. Cook, Douglas C. Stafford and Leggy A. Arnold, "Cell Viability, Motor Performance, and Behavioral Assessments of New Drug Candidates" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 23th, **2021**.
18. MS Rashid Roni, Nicolas M. Zahn, Brandon Mikulsky, Md Yeunus Mian, Daniel A. Webb, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Metabolic excretion profile of clinical asthma compound MIDD0301", *ACS Spring 2021 Virtual Meeting & Expo*, April 19th, **2021**.

19. Nicolas Zahn, Brandon N. Mikulsky, M.S. Rashid Roni, Gene T. Yocum, Md Yeunus Mian, Daniel E. Knutson, James M. Cook, Charles W. Emala, Douglas C. Stafford, Leggy A. Arnold "Development of New Treatments for Asthma and Neuropathic Pain", *ACS Spring 2021 Virtual Meeting & Expo*, April 19th, **2021**.
20. Taylor M. Wilcox, Amanda N. Nieman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold, "Development of new treatments for neuropathic pain based on imidazodiazepines"; *The 13th Annual UWM Undergraduate Research Symposium, UWM*, April 16th, **2021. Received Outstanding Presentation Award.**
21. Taylor M. Wilcox, Amanda N. Nieman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold, "Development of new treatments for neuropathic pain based on imidazodiazepines"; *NCUR Virtual Conference*, April 12th, **2021**.
22. Tania R. Mutchie, Rodrigo R. Hernandez, Fernando R. Morales, Daniel A. Webb, and Leggy A. Arnold "Development of small-molecule-based probes for the vitamin D receptor" *ACS Fall 2020 virtual Meeting & Expo*, August 17th, **2020**.
23. Md Shadiqur Rashid Roni; Brandon Mikulsky; Daniel E. Knutson; Md Yeunus Mian; Nicolas M. Zahn; James M. Cook; Douglas Stafford; Leggy A. Arnold "Characterization of clearance and metabolism of asthma candidate MIDD0301 by mass spectrometry" *ACS Fall 2020 virtual Meeting & Expo*, August 17th, **2020**.
24. Dylan Hoffman, MD Yeunus Mian, M.S. Rashid Roni, James M. Cook, Douglas C. Stafford, and Leggy A. Arnold, "Towards the Synthesis of Glucuronic acid conjugate of MIDD0301", *UWM Virtual Undergraduate Research Symposium*, May 1st **2020**.
25. Taylor M. Wilcox, Amanda N. Nieman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Development of new treatments for neuropathic pain based on imidazodiazepines", *UWM Virtual Undergraduate Research Symposium*, May 1st **2020**.
26. Dylan A. Hoffman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Determination of cellular cytotoxicity of novel benzodiazepines using human liver and kidney cells", *Virtual NCUR Conference*, March 27th, **2020**.
27. Taylor M. Wilcox, Amanda N. Nieman, Guanguan Li, Md Yeunus Mian, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Development of new treatments for neuropathic pain based on imidazodiazepines", *Virtual NCUR Conference*, March 27th, **2020**.
28. Tania Mutchie, Rodrigo Ramos Morales, Fernando Ramos Morales, Daniel Webb, Leggy A. Arnold" Development of small molecule–base probes for the vitamin D receptor", *Virtual platform for ACS Spring 2020 National Meeting & Expo*, March 22nd, **2020**.
29. Nicholas T. Martinez, Eva M. Fekete, Aric C. Madayag and Leggy A. Arnold "The Effect on Bodyweight and on the Behavior a Maximum Tolerated Single Dose (MTD) of Test Article 01 (TA01) by Oral Gavage in the Sprague Dawley Rat" *Summer Undergraduate Research Symposium, UWM, Milwaukee, WI*, August 14th, **2019**.
30. Dylan Hoffman, Daniel E. Knutson, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Evaluation of Genotoxicity of Clinical Asthma Drug Candidate MIDD0301" *Summer Undergraduate Research Symposium, UWM, Milwaukee, WI*, August 14th, **2019**.
31. Alex Kehoe, Ian W. Luecke, Brandon Mikulsky, Nicholas Zahn, Amanda N. Nieman, Guanguan Li, Michael Poe, Daniel Knutson, Taufkir Ahmed, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Preclinical Screening of Drug Candidates using a Rotarod Assay" *Summer Undergraduate Research Symposium, UWM, Milwaukee, WI*, August 14th, **2019**.
32. Amanda N. Nieman, Guanguan Li, Brandon Mikulsky, Alex S. Kehoe, Ian W. Luecke, Mike M. Poe, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Targeting Microglia with Novel Benzodiazepines for the Treatment of Neuropathic Pain", *Chemistry and Biochemistry Research Symposium, UWM, Milwaukee*, April 26th, **2019**.
33. Olivia B. Yu, Elliot DiMilo and Leggy A. Arnold "Investigating Calcitric Acid, Its Phase Two Metabolites, and Their Biological Function", *Chemistry and Biochemistry Research Symposium, UWM, Milwaukee*, April 26th, **2019**.
34. Tania Mutchie, Rodrigo Ramos Morales, Fernando Ramos Morales, Daniel Webb, Leggy A. Arnold" Synthesis of Novel Compounds to Study Expression and Localization of the Vitamin D Receptor", *Chemistry and Biochemistry Research Symposium, UWM, Milwaukee*, April 26th, **2019**.
35. Elliot Di Milo, Olivia B. Yu, Leggy A. Arnold "Metabolic stability and optimization of extraction of calcitric acid to enable its quantification", *Chemistry and Biochemistry Research Symposium, UWM, Milwaukee*, April 26th, **2019**.

36. M.S. Rashid Roni, Amanda N. Nieman, Nicolas M. Zahn, Gloria S Forkuo, Revathi Kodali, Margaret Guthrie, Guanguan Li, James M Cook, Douglas C Stafford, Leggy A Arnold "Development of a protein binding assay for drug discovery", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 26th **2019**.
37. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Guanguan Li, Alec T. Huber, Rajwana Jahan, Michael Rajesh Stephen, Michael M Poe, Jim Cook, Douglas C. Stafford, Leggy A. Arnold" Characterization of a Novel Orally Available GABA_A Receptor Agonist for the Treatment of Asthma", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 26th **2019**.
38. Daniel Webb, Tania Mutchie, Rodrigo Ramos, Fernando Ramos, and Leggy A. Arnold "Towards the Synthesis of an Intrinsic Fluorescent Ligand for the Vitamin D Receptor", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 26th **2019**.
39. Dylan Hoffman, Guanguan Li, Brandon Mikulsky, Amanda N. Nieman, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Evaluation of cellular toxicity of new drug candidates", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 26th **2019**.
40. Alex Kehoe, Ian W. Luecke, Nicholas Zahn, Amanda N. Nieman, Guanguan Li, Michael Poe, Lalit Kumar Golani, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Preclinical Screening of Drug Candidates using a Rotarod", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, April 26th, **2019**.
41. Brandon N. Mikulsky, Amanda N. Nieman, Guanguan Li, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Finding a new treatment for Neuropathic Pain: Targeting the GABA_A Receptor in Microglia" *18th Annual UW System Symposium for Undergraduate Research*, UW Green Bay, April 26th, **2019**.
42. Alec T. Huber, Nicolas M. Zahn, Guanguan Li, M. S. Rashid Roni, Ted W. Harris, Revathi Kodali, Gloria S. Forkuo, James M. Cook, Leggy A. Arnold "Imidazobenzodiazepine asthma drug reduces lung inflammation without affecting systemic immune system function", *NCUR 2019 conference, Kennesaw State University*, Atlanta, April 12th, **2019**.
43. Brandon N. Mikulsky, Amanda N. Nieman, Guanguan Li, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Finding a new treatment for Neuropathic Pain: Targeting the GABA_A Receptor in Microglia" *NCUR 2019 conference, Kennesaw State University*, Atlanta, April 12th, **2019**.
44. Daniel Webb, Tania Mutchie, Rodrigo Ramos, Fernando Ramos, and Leggy A. Arnold "Towards the Synthesis of an Intrinsic Fluorescent Ligand for the Vitamin D Receptor" *11th annual UWM Undergraduate Research Symposium*, Milwaukee, April 5th, **2019**.
45. Dylan Hoffman, Guanguan Li, Brandon Mikulsky, Amanda N. Nieman, James M. Cook, Douglas C. Stafford, Leggy A. Arnold "Evaluation of cellular toxicity of new drug candidates" *11th annual UWM Undergraduate Research Symposium*, Milwaukee, April 5th, **2019**.
46. Alex Kehoe, Ian W. Luecke, Nicholas Zahn, Amanda N. Nieman, Guanguan Li, Michael Poe, Lalit Kumar Golani, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Preclinical Screening of Drug Candidates using a Rotarod" *Assay 11th annual UWM Undergraduate Research Symposium*, Milwaukee, April 5th, **2019**.
47. Brandon N. Mikulsky, Amanda N. Nieman, Guanguan Li, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Finding a new treatment for Neuropathic Pain: Targeting the GABA_A Receptor in Microglia" *11th annual UWM Undergraduate Research Symposium*, Milwaukee, April 5th, **2019**.
48. Alec T. Huber, Nicolas M. Zahn, Guanguan Li, M. S. Rashid Roni, Ted W. Harris, Revathi Kodali, Gloria S. Forkuo, James M. Cook and Leggy A. Arnold "Imidazobenzodiazepine asthma drug reduces lung inflammation without affecting systemic immune system function" *11th annual UWM Undergraduate Research Symposium*, Milwaukee, April 5th, **2019**.
49. M. S. Rashid Roni, Amanda N. Nieman, Nicolas M. Zahn, Gloria S Forkuo, Revathi Kodali, Margaret L. Guthrie, Guanguan Li, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Development of a protein binding assay for drug discovery" *MACC, Milwaukee Analytical Chemistry Conference*, UWM, Milwaukee, January 25th, **2019**.
50. Olivia B. Yu, Elliot DiMilo and Leggy A. Arnold "Investigating Calcitroic Acid, Its Phase Two Metabolites, and Their Biological Function" *MACC, Milwaukee Analytical Chemistry Conference*, UWM, Milwaukee, January 25th, **2019**.
51. Elliot DiMilo, Olivia B. Yu and Leggy A. Arnold "Metabolic stability and optimization of extraction of calcitroic acid to enable its quantification" *MACC, Milwaukee Analytical Chemistry Conference*, UWM, Milwaukee, January 25th, **2019**.
52. Tania Mutchie, Rodrigo Ramos Morales, Fernando Ramos Morales, Daniel Webb and Leggy A. Arnold" Synthesis of Novel Compounds to Study Expression and Localization of the Vitamin D Receptor" *MACC, Milwaukee Analytical Chemistry Conference*, UWM, Milwaukee, January 25th, **2019**.

53. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Guanguan Li, Alec T. Huber, Rajwana Jahan, Michael Rajesh Stephen, Michael M Poe, Jim Cook, Douglas C. Stafford and Leggy A. Arnold "Characterization of a Novel Orally Available $\alpha_5\beta_3\gamma_2$ Subtype-Selective GABA_A Receptor Agonist for the Treatment of Asthma" *MACC, Milwaukee Analytical Chemistry Conference*, UWM, Milwaukee, January 25th, **2019**.
54. Alec T. Huber, Mae Stepanski, Nicolas M. Zahn, Melissa Schussman, Guanguan Li, James M. Cook and Leggy A. Arnold "Continued Study of the Immunotoxicology of Asthma Drug Candidate MIDD0301" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 15th, **2018**.
55. Mae E. Stepanski, Nicholas M. Zahn, Alec T. Huber, Melissa K. Schussman, Guanguan Li, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "The application of non-invasive airway mechanics to determine airway hyperresponsiveness for a steroid-resistance mouse model for asthma" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 15th, **2018**.
56. Brandon N. Mikulsky, Amanda N. Nieman, Guanguan Li, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Finding a new treatment for Neuropathic Pain: Targeting the GABA_A Receptor in Microglia" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 15th, **2018**. (Poster Award: 3rd place).
57. Amanda N. Nieman, Gloria S. Forkuo, Nicolas M. Zahn, Revathi Kodali, Guanguan Li, M. S. Rashid Roni, Michael R. Stephen, Ted W. Harris, Rajwana Jahan, Margaret L. Guthrie, Olivia B. Yu, Janet L. Fisher, Gene T. Yocum, Charles W. Emala, Douglas A. Steeber, Douglas C. Stafford, James M. Cook, and Leggy A. Arnold "Reducing airway constriction and inflammation through GABA_A receptors in the lung with a novel, orally available drug candidate" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May 22nd, **2018**.
58. Tania Mutchie, Rodrigo Ramos Morales, Fernando Ramos Morales, and Leggy A. Arnold "Synthesis of novel compounds to study expression and localization of the vitamin D receptor" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May 22nd **2018**.
59. Revathi Kodali, Nicolas M. Zahn, Gloria S. Forkuo, M. S. Rashid Roni, Margaret L. Guthrie, Rajwana Jahan, Guanguan Li, Charles W. Emala, James M. Cook, Douglas C. Stafford, Leggy A. Arnold "Revathi Pharmacokinetic Studies of Drug Candidates for Neurological Disorders and Asthma Based on GABA_A Receptor Subtype Selective Ligands" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May 22nd, **2018**.
60. M. S. Rashid Roni, Amanda N. Nieman, Nicolas M. Zahn, Gloria S Forkuo, Revathi Kodali, Margaret L. Guthrie, Guanguan Li, James M. Cook, Douglas C. Stafford and Leggy A Arnold "Development of a protein binding assay for drug discovery" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May 22nd, **2018**.
61. Elliot Di Milo, Revathi Kodali, Olivia B. Yu, Leggy A. Arnold "Liquid Chromatography Tandem Mass Spectrometry for Quantification of Calcitroic Acid in Tissue and Microsomal Stability Assays" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May 22nd, **2018**.
62. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Rajwana Jahan, Michael Rajesh Stephen, Michael M Poe, Jim Cook, Douglas C. Stafford and Leggy Arnold "Nervous System Effects of Metabolic Analysis of Imidazobenzodiazepines in Human and Mouse Liver Microsomes" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May 22nd, **2018**.
63. Olivia B. Yu, Elliot DiMilo and Leggy A. Arnold "Investigating Calcitroic Acid, Its Phase Two Metabolites, and Their Biological Function" *Vitamin D workshop*, Barcelona (Spain), May 17th, **2018**.
64. Amanda N. Nieman, Gloria S. Forkuo, Nicolas M. Zahn, Revathi Kodali, Guanguan Li, M. S. Rashid Roni, Michael R. Stephen, Ted W. Harris, Rajwana Jahan, Margaret L. Guthrie, Olivia B. Yu, Janet L. Fisher, Gene T. Yocum, Charles W. Emala, Douglas A. Steeber, Douglas C. Stafford, James M. Cook, and Leggy A. Arnold "Reducing airway constriction and inflammation through GABA_A receptors in the lung with a novel, orally available drug candidate" *Immunology*, Austin Tx, May 8th, **2018**.
65. Amanda N. Nieman, Gloria S. Forkuo, Nicolas M. Zahn, Revathi Kodali, Guanguan Li, Md. S. Rashid Roni, Michael R. Stephen, Ted W. Harris, Rajwana Jahan, Margaret L. Guthrie, Olivia B. Yu, Janet L. Fisher, Gene T. Yocum, Charles W. Emala, Douglas A. Steeber, Douglas C. Stafford, James M. Cook, and Leggy A. Arnold "Reducing airway constriction and inflammation through GABA_A receptors in the lung with a novel, orally available drug candidate" *Immunology*, Austin Tx, May 8th, **2018**. (oral presentation)
66. Alec T. Huber, Nicolas M. Zahn, Guanguan Li, M. S. Rashid Roni, Ted W. Harris, Revathi Kodali, Gloria S. Forkuo, James M. Cook and Leggy A. Arnold "An Immunotoxicity Safety Study of MIDD0301", *10th annual UWM Undergraduate Research Symposium*, UWM, Milwaukee, April 27th, **2018**.
67. Brandon Mikulsky, Amanda N. Nieman and Leggy A. Arnold "Finding a New Treatment for Neuropathic Pain: Targeting the GABA(A) Receptor on Microglia" *10th annual UWM Undergraduate Research Symposium*, UWM, Milwaukee, April 27th, **2018**.

68. Jon Gould and Leggy A. Arnold "Identification of Novel Pepsin Inhibitors for Target Drugs to Treat Laryngopharyngeal Reflux Disease" *10th annual UWM Undergraduate Research Symposium*, UWM, Milwaukee, April 27th, **2018**. (oral presentation)
69. Amanda N. Nieman, Gloria S. Forkuo, Nina Y. Yuan, Ted W. Harris, Md. S. Rashid Roni, Rajwana Jahan, Guanguan Li, Michael Rajesh Stephen, Douglas A. Steeber, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Automated Patch Clamp to Determine the Pharmacology and GABA_A receptor Subtype Selectivity of Imidazobenzodiazepines", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
70. Olivia B. Yu, Elliot DiMilo, Viktoriia Senych, Kelly A. Teske, and Leggy A. Arnold "Investigation of the Biological Function of Calcitroic Acid and Its Phase Two Metabolites", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
71. Margaret L. Guthrie, Nicolas M. Zahn, Guanguan Li, Revathi Kodali, Gloria S. Forkuo, Morgan E. Stevenson, Shama Mirza, James M. Cook, Douglas C. Stafford, Leggy A. Arnold "Localization of novel imidazobenzodiazepines in asthmatic mouse lung tissue by MALDI imaging mass spectrometry", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
72. Tania Mutchie, Rodrigo Ramos Morales, Fernando Ramos Morales, and Leggy A. Arnold "Synthesis of novel compounds to study expression and localization of the vitamin D receptor", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th **2017**.
73. Md Shadiqur Rashid Roni and Leggy A. Arnold "Microsomal stability determination of novel Imidazobenzodiazepines", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
74. Revathi Kodali, Nicolas M. Zahn, Gloria S. Forkuo, Rashid Roni, Margaret L. Guthrie, Rajwana Jahan, Guanguan Li, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Pharmacokinetic Studies of Drug Candidates for Neurological Disorders and Asthma Based on GABA_A Receptor Subtype Selective Ligands", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
75. Gloria S. Forkuo, Ted Harris William, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Revathi Kodali, Guanguan Li, Rajwana Jahan, Michael R. Stephen, Charles W. Emala, James M. Cook¹, Douglas C. Stafford, Leggy A. Arnold, "Novel orally bioavailable GABA A receptor positive allosteric modulator for alleviating multiple asthma symptoms", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
76. Alec T. Huber, Nicolas M. Zahn, Guanguan Li, Md S.R. Roni, Leggy A. Arnold "An Immunotoxicity Safety Study of GL-II-93", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
77. Elliot Di Milo, Margaret L. Guthrie, Revathi Kodali, Olivia B. Yu, Leggy A. Arnold "Quantification of Calcitroic Acid using Liquid Chromatography Tandem Mass Spectrometry", *UW System Faculty Meeting*, UWM, Milwaukee, September 29th, **2017**.
78. Labina Petrovska, Dara Frank and Leggy A. Arnold "Identification of ExoU Inhibitors for the Suppression of Pseudomonas aeruginosa" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 23th, **2017**.
79. Alec T. Huber, Nicolas M. Zahn, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "An Immunotoxicity Safety Study of GL-II-93" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 23th, **2017**.
80. Jon Gould, Nikki Johnston and Leggy A. Arnold "Development of Novel Pepsin Inhibitors to Treat Laryngopharyngeal Reflux Disease" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 23th, **2017**.
81. Alessandra Ebben, Olivia B. Yu, Viktoriia Senych and Leggy A. Arnold "Calcitroic Acid as a Potential Key Element in Colon Cancer Prevention" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 23th, **2017**.
82. Margaret L. Guthrie and Leggy A. Arnold "MALDI-IMS for Asthma Drugs that Target the GABA_A Receptor" *ASMS Conference on Mass Spectrometry and Allied Topics*, Indianapolis, June 3-4, **2017**. (oral presentation)
83. Margaret L. Guthrie, Nicolas M. Zahn, Gloria S. Forkuo, Guanguan Li, Revathi Kodali, Rajwana Jahan, Morgan E. Stevenson, Jim M. Cook, Douglas C. Stafford and Leggy A. Arnold "Imaging the distribution of selective GABA_A receptor modulators in the asthmatic lung using MALDI mass spectrometry", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
84. Amanda N. Nieman, Gloria S. Forkuo, Nina Y. Yuan, Ted W. Harris, Md. S. R. Roni, Rajwana Jahan, Guanguan Li, Michael Rajesh Stephen, Douglas A. Steeber, Douglas C. Stafford, James M. Cook and Leggy A. Arnold "Automated Patch Clamp for Determining the Pharmacology and GABA_A Receptor Subtype Selectivity of Imidazobenzodiazepines", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
85. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Jim M. Cook, Douglas C. Stafford and Leggy A. Arnold "Nervous System Effects & Metabolic Analysis of

- Benzodiazepines in Human and Mouse Liver Microsomes”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
86. Elliot Di Milo, Margaret L. Guthrie, Revathi Kodali, Olivia B. Yu and Leggy A. Arnold “Quantification of Calcitroic Acid using Liquid Chromatography Tandem Mass Spectrometry”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 87. M. S. Rashid Roni, Revathi Kodali, Nicolas M. Zahn, James M. Cook and Leggy A. Arnold “Microsomal Stability Determination of Novel Imidazobenzodiazepines”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 88. Revathi Kodali, Nicolas M. Zahn, Gloria S. Forkuo, Rashid Roni, Margaret L. Guthrie, Rajwana Jahan, Guanguan Li, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold “Pharmacokinetic Studies of Drug Candidates for Neurological Disorders and Asthma Based on GABA_A Receptor Subtype Selective Ligands”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 89. Alec T. Huber, Nicolas M. Zahn, Douglas C. Stafford, James M. Cook and Leggy A. Arnold, “Application of rotarod studies to the investigation possible adverse side effects of imidazobenzodiazepines”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 90. Olivia B. Yu, Elliot DiMilo, Viktoriia Seynch, Kelly A. Teske and Leggy A. Arnold “Investigation of the Biological Function of Calcitroic Acid”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 91. Alessandra Ebben, Olivia B. Yu, Viktoriia Senych and Leggy A. Arnold “Calcitroic Acid as a Potential Key Element in Colon Cancer Prevention” *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 92. Viktoriia Senych, Olivia B. Yu, Alessandra A. Ebben and Leggy A. Arnold “Synthesis of Calcitroic Acid to Determine its Potential for Prevention of Colon Cancer”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 93. Tania Mutchie, Rodrigo Ramos Morales, Fernando Ramos Morales and Leggy A. Arnold “Synthesis of Novel Compounds to Study Expression and Localization of the Vitamin D Receptor”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 94. Ted Harris, Gloria S. Forkuo, Guanguan Li, James M Cook, Douglas C. Stafford and Leggy A. Arnold “A murine asthma model to determine the attenuation of airway hyper-responsiveness of novel imidazobenzodiazepines”, *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2017**.
 95. Alessandra Ebben, Olivia B. Yu, Viktoriia Senych, Leggy A. Arnold “Calcitroic Acid as a Potential Key Element in Colon Cancer Prevention” *9th Annual UWM Undergraduate Research Symposium*, April 28th **2017**.
 96. Viktoriia Senych, Olivia B. Yu, Alessandra A. Ebben and Leggy A. Arnold “Synthesis of Calcitroic Acid to Determine its Potential for Prevention of Colon Cancer”, *9th annual UWM Undergraduate Research Symposium*, April 28th **2017**.
 97. Margaret L. Guthrie, Nicolas M. Zahn, Gloria S. Forkuo, Guanguan Li, Revathi Kodali, Rajwana Jahan, Morgan E. Stevenson, Jim M. Cook, Douglas C. Stafford and Leggy A. Arnold “Imaging the distribution of selective GABA_A receptor modulators in the asthmatic lung using MALDI mass spectrometry”, *253rd ACS National Meeting*, San Francisco, April 2nd, **2017**.
 98. Olivia B. Yu, Elliot DiMilo, Viktoriia Seynch, Kelly A. Teske and Leggy A. Arnold “Investigation of the Biological Function of Calcitroic Acid”, *Vitamin D workshop*, Orlando, Florida, March 31st, **2017**.
 99. Viktoriia Senych, Olivia B. Yu, Alessandra A. Ebben and Leggy A. Arnold “Initial Steps Towards Synthesizing Calcitroic Acid to Determine its Biological Function”, *253rd ACS National Meeting*, San Francisco, April 2nd, **2017**.
 100. Gloria S. Forkuo, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Benjamin D. Hartzler, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold “Alpha 4&5-selective GABAA receptor positive allosteric modulators attenuates the asthma-like phenotype”, *International Chemical Biology Society meeting*, Madison, WI, October **2016**.
 101. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Rajwana Jahan, Michael R. Stephen, Michael M. Poe1, Jim M. Cook, Douglas C. Stafford and Leggy A. Arnold “Nervous System Effects & Metabolic Analysis of Benzodiazepines in Human and Mouse Liver Microsomes”, *International Chemical Biology Society meeting*, Madison, WI, October **2016**.
 102. Olivia B. Yu and Leggy A. Arnold “Synthesis of Calcitroic Acid to Determine Its Potential for Prevention of Colon Cancer”, *International Chemical Biology Society meeting*, Madison, WI, October **2016**.

103. Amanda N. Nieman, Gloria S. Forkuo, Margaret L. Guthrie, Nina Y. Yuan, Olivia B. Yu, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Benjamin Hartzler, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Targeting the immune system with subtype-selective GABA(A) receptor modulators to alleviate asthma symptoms", *International Chemical Biology Society meeting*, Madison, WI, October **2016**.
104. Leah Radde, Nikki Johnston, Nicholas R. Silvaggi and Leggy A. Arnold "Identification of Novel Pepsin Inhibitors for Target Drugs to Treat Laryngopharyngeal Reflux Disease" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 24th, **2016**. (Second best poster award).
105. Viktoriia Senych, Olivia B. Yu and Leggy A. Arnold "Ozonolysis of Calciferol as a First Step of a Novel Synthesis of Calcitroic Acid" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 24th, **2016**.
106. Margaret L. Guthrie, Rajwana Jahan, Michael R. Stephen, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Comparison of in-line HPLC SPE extraction and liquid/liquid extraction for the pharmacokinetic profiling using LC-MS/MS", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
107. Revathi Kodali, Margaret L. Guthrie, Michael R. Stephen, Rajwana Jahan, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold; "Metabolic Studies of Drug Candidates for Neurological Disorders and Asthma based on GABAA receptor subtype selective ligands using Mass Spectrometry", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
108. Olivia B. Yu and Leggy A. Arnold "Synthesis of Calcitroic Acid to Determine its Potential of Prevention of Colon Cancer", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
109. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Rajwana Jahan, Michael R. Stephen, Daniel E. Knutson, Michael M. Poe, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Determine of CNS effects of $\alpha 4$ and $\alpha 6$ selective GABA_A receptor ligands using a rotarod study" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
110. Gloria S. Forkuo, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Benjamin D. Hartzler, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold " $\alpha 4$ -selective GABA_A receptor positive modulator attenuates the "asthma-like phenotype" in a murine asthma model" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
111. Benjamin D. Hartzler, Gloria S. Forkuo, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Characterization of the GABAA Receptor Subunits in a Murine Model of Asthma" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
112. Gino Scuncio, Nikki Johnston and Leggy A. Arnold "Identification of Novel Pepsin Inhibitors for Target Drugs to Treat Laryngopharyngeal Reflux Disease" *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
113. Nina Y. Yuan, James M. Cook and Leggy A. Arnold "Cross-Talk: The Brain and The Immune System – Functional GABA_A Receptor on Leukocytes", *Chemistry and Biochemistry Research Symposium*, UWM, Milwaukee, May **2016**.
114. Revathi Kodali, Margaret L. Guthrie, Michael R. Stephen, Rajwana Jahan, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Metabolic Studies of Drug Candidates for Neurological Disorders and Asthma based on GABA_A receptor subtype selective ligands using Mass Spectrometry", *252th ACS National Meeting*, Philadelphia, PA **2016**.
115. Revathi Kodali, Margaret L. Guthrie, Michael R. Stephen, Rajwana Jahan, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Metabolic Studies of Drug Candidates for Neurological Disorders and Asthma based on GABAA receptor subtype selective ligands using Mass Spectrometry", *8th Yao Yuan Biotech-Pharma Symposium*, Chicago, IL, **2016**.
116. Benjamin D. Hartzler, Gloria S. Forkuo, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold "Characterization of the GABAA Receptor Subunits in a Murine Model of Asthma" *UW System Symposium for Undergraduate Research and Creative Activity*, UW Steven's Point, April **2016**.
117. Gloria S. Forkuo, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Benjamin D. Hartzler, Charles W. Emala, James M. Cook, Douglas

- C. Stafford and Leggy A. Arnold “ α 4-selective GABA_A receptor positive modulator attenuates the “asthma-like phenotype” in a murine asthma model” *Experimental Biology*, San Diego, April **2016**.
118. Benjamin D. Hartzler, Gloria S. Forkuo, Amanda N. Nieman, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold “Characterization of the GABAA Receptor Subunits in a Murine Model of Asthma” *UWM Undergraduate Research Symposium*, UWM, April **2016**.
119. Owen Dinauer, Olivia B. Yu and Leggy A. Arnold “Optimization of Intermediate Compounds for a Direct VDR Binding Assay”, *UWM Undergraduate Research Symposium*, UWM, April **2016**.
120. Gino Scuncio, Nikki Johnston and Leggy A. Arnold “Identification of Novel Pepsin Inhibitors for Target Drugs to Treat Laryngopharyngeal Reflux Disease” *UWM Undergraduate Research Symposium*, UWM, April **2016**.
121. Amanda N. Nieman, Gloria S. Forkuo, Margaret L. Guthrie, Nina Y. Yuan, Olivia B. Yu, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Benjamin Hartzler, Charles W. Emala, James M. Cook, Douglas C. Stafford and Leggy A. Arnold “Targeting the Immune System with Subtype-Selective GABA_A Receptor Modulators to Alleviate Asthma Symptoms” *Immunology 2016*, Seattle, May **2016**.
122. Nina, Y. Yuan, James M. Cook and Leggy A. Arnold “Electrophysiological Assay of GABAA Receptor: Roles in Neuropharmacology & Immunology” *Northwestern Feinberg School of Medicine*, Chicago, April **2016** (Oral presentation)
123. Nicolas M. Zahn, Revathi Kodali, Margaret L. Guthrie, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Jim M. Cook, Douglas C. Stafford and Leggy A. Arnold" Metabolic Analysis of Imidazobenzodiazepines in Human and Mouse Liver Microsomes" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 19th, **2015**. (Poster Award: 3rd place).
124. Gino Scuncio, Chris Goetz, Nikki Johnston, and Leggy A. Arnold" Identification of novel pepsin inhibitors for target drugs to treat laryngopharyngeal reflux disease" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 19th, **2015**.
125. Charles Stangl, Kelly A. Teske, Olivia B. Yu and Leggy A. Arnold" Synthesis of New Vitamin D Receptor-Coactivator Inhibitors" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 19th, **2015**.
126. Chris Goetz, Tina Samuels, Nikki Johnston and Leggy A. Arnold "New high throughput screening assay for the identification of new pepsin inhibitors" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015** (Chemistry Alumni Award for the Undergraduate Research for the best poster presentation).
127. Chris Goetz, Tina Samuels, Nikki Johnston and Leggy A. Arnold "New high throughput screening assay for the identification of new pepsin inhibitors" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015** (Chemistry Alumni Award for the Undergraduate Research for the best poster presentation).
128. Kelly A. Teske, Jon W. Bogart, Luis Sanchez, Leggy A. Arnold “Synthesis of natural VDR ligand metabolites and their interaction with the vitamin D receptor” *250nd ACS National Meeting*, Boston, MA, August 16th, **2015**.
129. Margaret L. Guthrie, Nicolas M. Zahn, Revathi Kodali, Glorio Forkuo, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Jim M. Cook, Douglas C. Stafford, Leggy A. Arnold “Development of a liquid chromatography tandem mass spectrometry (LC-MS/MS) method for quantification of imidazobenzodiazepines following liquid-liquid extraction (LLE) and on-line solid-phase extraction (SPE).” *250nd ACS National Meeting*, Boston, MA, August 16th, **2015**.
130. Revathi Kodali, Margaret L. Guthrie, Michael M. Poe, Michael R. Stephen, Rajwana Jahan, Charles W. Emala, James M. Cook, Douglas C. Stafford, and Leggy A. Arnold “Metabolic Studies of Drug Candidates for Neurological Disorders and Asthma Based on GABA_A Receptor Subtype Selective Ligands using Mass Spectrometry.” *250nd ACS National Meeting*, Boston, MA, August 16th, **2015**.
131. Nina Y. Yuan, Mike Poe, James M. Cook, Leggy A. Arnold “Electrophysiological Assay of GABAA Receptor: Roles in Neuropharmacology & Immunology” Great Lakes Chapter Chinese American Chemical Society (GLCACS), Abbott Auditorium, Northwestern University, Chicago **2015**. (Third best presentation)
132. Gino Scuncio, Christopher Goetz, Nikki Johnston, Leggy A. Arnold, “Development of a High Throughput Screening Campaign to Identify Novel Pepsin Inhibitors to treat Laryngopharyngeal Reflux Disease”, *7th Yao Yuan Biotech-Pharma Symposium*, *Illinois Institute of Technology*, Chicago **2015**.
133. Gloria S. Forkuo, Amanda Youmans, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Charles W. Emala, James M. Cook, Douglas C. Stafford, Leggy A. Arnold “Characterization of airway hyper-responsiveness in a murine model of asthma with the Buxco® FinePointe Non-Invasive Airway Mechanics instrumentation” *Chemistry and Biochemistry Research Symposium*, UWM, April **2015**.

134. Amanda Youmans, Gloria S. Forkuo, Olivia B. Yu, Margaret L. Guthrie, Nina Y. Yuan, Revathi Kodali, Rajwana Jahan, Michael R. Stephen, Michael M. Michael, Charles W. Emala, James M. Cook, Douglas C. Stafford, Leggy A. Arnold, "The Effect of γ -Aminobutyric Acid on IL-2 Production in Jurkat Cell Line" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015**.
135. Margaret L. Guthrie, Marina Sidorko, Nicolas M. Zahn, Rajwana Jahan, Michael R. Stephen, Michael M. Poe, Charles W. Emala, Jim M. Cook, Douglas C. Stafford, Leggy A. Arnold "Development of a liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for the quantitation of benzodiazepines in mouse tissue homogenates" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015**.
136. Kelly A. Teske, Adam Yasgar, Ganesha Bantukallu, Jon Bogart, Anton Simeonov, Ajit Jadhav, David Maloney and Leggy A. Arnold, "Further Investigation of the First Non-Secosteroidal Antagonist for the Vitamin D Receptor" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015** (Sosnovsky Award for Excellence in Graduate Research).
137. Olivia B. Yu, Kelly A. Teske, Charlie Stangl, James M. Cook, and Leggy A. Arnold, "Development of a Direct VDR Binding Assay Based on Fluorescence Polarization" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015**.
138. Nina Y. Yuan, James M. Cook, Leggy A. Arnold "Electrophysiological Assay of GABA(A) Receptor Roles in Neuropharmacology & Immunology" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015** (Chemistry Alumni Award for Graduate Research for the 1st best poster presentation).
139. Revathi Kodali, Margaret L. Guthrie, Michael M. Poe, Michael R. Stephen, Rajwana Jahan, Charles W. Emala, James M. Cook, Douglas C. Stafford, and Leggy A. Arnold "In Vitro Metabolic Stability Studies of GABAA Receptor Subtype Selective Ligands in Liver Sub-Cellular Fractions" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015**.
140. Chris Goetz, Tina Samuels, Nikki Johnston, Leggy A. Arnold "New high throughput screening assay for the identification of new pepsin inhibitors" *Chemistry and Biochemistry Research Symposium*, UWM, April **2015** (Chemistry Alumni Award for the Undergraduate Research for the best poster presentation).
141. Christopher Goetz, Tina Samuels, Nikki Johnston, Leggy A. Arnold "Development of a high throughput screening campaign for the identification of new pepsin inhibitors" *24th Annual Graduate School of Biomedical Science Research Poster Session*, Medical College of Wisconsin, Milwaukee, WI, October 9th, **2014**.
142. Christopher Goetz, Tina Samuels, Nikki Johnston, Leggy A. Arnold "Development of a high throughput screening campaign for the identification of new pepsin inhibitors" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 30th, **2014**.
143. Joshua Preston, Nina Y. Yuan, Leggy A. Arnold "Development of a stable cell line for nuclear receptor research" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 30th, **2014**.
144. Skylar J. Gabel-Eissens, Jonathan W. Bogart, Grant B. Fernstrum, Kelly A. Teske, Joshua Preston, Nina Y. Yuan, Leggy A. Arnold "Synthesis of VDR-Coregulator Inhibitor SG72914" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August 30th, **2014**.
145. Kelly A Teske, Jon W Bogart, Luis Sanchez, Ganesha Bantukallu, Anton Simeonov, Ajit Jadhav, Adam Yasgar, David Maloney, and Leggy A. Arnold "Development of selective non-secosteroidal vitamin D receptor inhibitors" *248nd ACS National Meeting*, San Francisco, CA, August 13th, **2014**. (oral presentation)
146. Kelly A Teske, Jon W Bogart, Luis Sanchez, and Leggy A. Arnold "Identification of New Vitamin D Receptor-Coregulator Inhibitors among Nuclear Receptor Ligands", *248nd ACS National Meeting*, San Francisco, CA, August 10th, **2014**.
147. Nina Y. Yuan, James M. Cook and Leggy A. Arnold "Development of high throughput assays to identify new alpha subtype-selective GABAA receptor modulators to treat anxiety and depression disorders" *Experimental Instrumentation and Models in Interdisciplinary Neuroscience Research*, UWM, Milwaukee, WI, July 30th, **2014**. (oral presentation)
148. Nina Y. Yuan, Mike M. Poe, Christopher M. Witzigmann, Werner Sieghart, James M. Cook and Leggy A. Arnold "Identifying New Treatments for the Brain: Electrophysiological Assay and Generation of a Stable Recombinant Cell Line" *Gordon Research Conference – Ion Channels*, South Hadley, MA, July 8th, **2014**.
149. Nina Y. Yuan, James M. Cook and Leggy A. Arnold "Development of high throughput assays to identify new alpha subtype-selective GABA_A receptor modulators to treat anxiety and depression disorders" *Gordon Research Seminar – Ion Channels*, South Hadley, MA, July 6th, **2014**. (oral presentation)
150. Kelly A. Teske and Leggy A. Arnold "Novel Modulators for the Vitamin D Receptor as Drug Candidates", *MIDD retreat 2014*, UWM, May 22nd, **2014**. (oral presentation)

151. Kelly A. Teske, Jonathan Bogart, Adam Yasgar, Ganesha Bantukallu, Jon Bogart, Anton Simeonov, Ajit Jadhav, David Maloney and Leggy A. Arnold "Development of Selective Non-Secosteroid Vitamin D Receptor Inhibitors", *Chemistry and Biochemistry Research Symposium*, UWM, April **2014**, received the Chemistry Alumni Award for Graduate Research.
152. Jonathan W. Bogart, Kelly A. Teske and Leggy A. Arnold "The Synthesis and Evaluation of Potential Non-Secosteroid VDR-coactivator Inhibitors", *Chemistry and Biochemistry Research Symposium*, UWM, April **2014**.
153. Margaret L. Guthrie, Preetpal Sidhu, Michael Poe, Michael Rajesh Stephen, V.V.N. Phani Babu Tiruveedhula, Rakesh K. Singh, James Cook and Leggy A. Arnold "Development of a Metabolic Stability Assay to Determine Drug-like Properties of Small Molecules" *Chemistry and Biochemistry Research Symposium*, UWM, April **2014**.
154. Joshua Preston, Preetpal S. Sidhu, and Leggy A. Arnold "Sequence Verification of Nuclear Receptor Plasmids for Ligand-mediated Transcription Assays" *Chemistry and Biochemistry Research Symposium*, UWM, April **2014**.
155. Belaynesh Feleke, Kelly A. Teske, Preetpal S. Sidhu, Nina Y. Yuan and Leggy A. Arnold "Novel VDR-Coregulator Inhibitors" *Chemistry and Biochemistry Research Symposium*, UWM, April **2014**.
156. Nina Y. Yuan, Mike M. Poe, Christopher M. Witzigmann, Werner Sieghart, James M. Cook and Leggy A. Arnold, "Identifying New Treatments for the Brain: Electrophysiological Assay and Generation of a Stable Recombinant Cell Line" *Chemistry and Biochemistry Research Symposium*, UWM, April **2014**.
157. Jonathan W. Bogart, Kelly A. Teske and Leggy A. Arnold "The Synthesis and evaluation of potential non-secosteroid VDR-coactivator inhibitors", *UWM System Symposium*, UWM, April **2014**. Award for Outstanding Presentation.
158. Joshua Preston, Preetpal S. Sidhu and Leggy A. Arnold "Sequence Verification of Nuclear Receptor Plasmids for Ligand-mediated Transcription Assays", *UWM System Symposium*, UWM, April **2014**.
159. Kelly A. Teske, Adam Yasgar, Ganesha Bantukallu, Jon Bogart, Anton Simeonov, Ajit Jadhav, David Maloney and Leggy A. Arnold "Further Investigation of the First Non-Secosteroidal Antagonist for the Vitamin D Receptor" *6th Yao Yuan Biotech-Pharma Symposium*, Illinois Institute of Technology, Chicago **2014**.
160. Nina Y. Yuan, James M. Cook and Leggy A. Arnold "Identifying New Treatments for the Brain: Anxiolytic Neurochemistry and Electrophysiology" *6th Yao Yuan Biotech-Pharma Symposium*, Illinois Institute of Technology, Chicago **2014**.
161. Belaynesh Feleke, Kelly A. Teske, Preetpal S. Sidhu, Nina Y. Yuan and Leggy A. Arnold "Novel VDR-Coregulator Inhibitors" *6th Yao Yuan Biotech-Pharma Symposium*, Illinois Institute of Technology, Chicago **2014**.
162. Preetpal S. Sidhu, Premchendar Nandhikonda, Kelly A. Teske, Belaynesh Feleke, Nina Y. Yuan, Rakesh K. Singh, Daniel D. Bikle, Leggy A. Arnold "Novel VDR-Coactivator Inhibitors and Their Anti-Cancer Effects" *6th Yao Yuan Biotech-Pharma Symposium*, Illinois Institute of Technology, Chicago **2014**.
163. Joshua Preston, Preetpal S. Sidhu and Leggy A. Arnold "Sequence Verification of Nuclear Receptor Plasmids for Ligand-mediated Transcription Assays" *6th Yao Yuan Biotech-Pharma Symposium*, Illinois Institute of Technology, Chicago **2014**.
164. Jonathan W. Bogart, Kelly A. Teske and Leggy A. Arnold "The Synthesis and evaluation of potential non-secosteroid VDR-coactivator inhibitors" *6th Yao Yuan Biotech-Pharma Symposium*, Illinois Institute of Technology, Chicago **2014**.
165. Kelly A. Teske, Jonathan Bogart and Leggy A. Arnold "Identification of the first non-secosteroid antagonist for the vitamin D receptor" *American Chemical Society Section Meeting (Younger Chemist Committee)*, UWM, Milwaukee **2013**.
166. Joshua Preston, Preetpal S. Sidhu, Leggy A. Arnold "Sequence Verification of Nuclear Receptor Plasmids for Ligand-mediated Transcription Assays" *American Chemical Society Section Meeting (Younger Chemist Committee)*, UWM, Milwaukee **2013**.
167. Jonathan Bogart, Kelly A. Teske and Leggy A. Arnold "The Synthesis and Evaluation of Potential Non-Secosteroid VDR-Coactivator Inhibitors" *American Chemical Society Section Meeting (Younger Chemist Committee)*, UWM, Milwaukee **2013**.
168. Belaynesh Feleke, Kelly A. Teske, Preetpal S. Sidhu, Nina Y. Yuan and Leggy A. Arnold "Novel VDR-Coregulator inhibitors" *American Chemical Society Section Meeting (Younger Chemist Committee)*, UWM, Milwaukee **2013**.
169. Jonathan Bogart, Kelly A. Teske and Leggy A. Arnold "The synthesis of non-seco-steroid VDR-coactivator inhibitors using the Hantzsch reaction" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, August **2013**. (Second Best Poster)
170. Robin Goy, Nina Y. Yuan, Lanlan Han, Lisa Mueller and Leggy A. Arnold "Expression and Purification of the Retinoic X Receptor Gamma" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, August **2013**.

171. Joshua Preston and Leggy A. Arnold "Gene sequencing of the Peroxisome Proliferator-Activated Receptor Alpha in pBind" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, August 2013.
172. Preetpal S. Sidhu and Leggy A. Arnold "Selective, Irreversible VDR-coactivator Inhibitors and Their Evaluation In Vivo Using an Ovarian Cancer Animal Model", *Gordon Research Seminar*, London, NH, August **2013**.
173. Nicholas D. Nassif, Kelly A. Teske, Ganesha Bantukallu, Adam Yasgar, David Maloney, Ajit Jadhav and Leggy A. Arnold "Expression and Purification of the Vitamin D Receptor Ligand Binding Domain for the Identification of Vitamin D Receptor Coactivator Inhibitors", *NCUR*, LaCrosse, WI, March **2013**.
174. Nicholas D. Nassif, Kelly A. Teske, Ganesha Bantukallu, Adam Yasgar, David Maloney, Ajit Jadhav and Leggy A. Arnold "Expression and Purification of the Vitamin D Receptor Ligand Binding Domain for the Identification of Vitamin D Receptor Coactivator Inhibitors", *UWM Chemistry and Biochemistry Research Symposium*, Milwaukee, WI, April **2013**.
175. Kelly A. Teske and Leggy A. Arnold "Identification of the first non-secosteroid antagonist for the vitamin D receptor" *245th ACS National Meeting and Exposition*, New Orleans, LA, April **2013**.
176. Preetpal S. Sidhu, Leggy A. Arnold "Chemical improvement of pharmacological properties of irreversible VDR-coactivator inhibitors", *245th ACS National Meeting and Exposition*, New Orleans, LA, April **2013**.
177. Nina Y. Yuan, James M. Cook and Leggy A. Arnold "Identifying New Treatments for the Brain: Anxiolytic Neurochemistry and Electrophysiology", *UWM Chemistry and Biochemistry Research Symposium*, Milwaukee, WI, April **2013**.
178. Nina Y. Yuan and Leggy A. Arnold "Uppers, Downers, All Arounders: Identifying New Treatments for the Human Brain", *UWM Chemistry and Biochemistry Research Symposium and Recruiting Event*, Milwaukee, WI, April **2013**.
179. Megan M. McCallum, Alan J. Pawlak, Anton Simeonov, Ajit Jadhav, Adam Yasgar, David Maloney and Leggy A. Arnold, "A new fluorescent-based high throughput method for the quantification of drug-protein binding" *Student Awards Day*, UWM, Milwaukee, WI, April **2013**.
180. Megan M. McCallum and Leggy A. Arnold, "A new fluorescent-based high throughput method for the quantification of drug-protein binding" *245th ACS National Meeting & Exposition*, New Orleans, LA, April, **2013**.
181. Megan M. McCallum, Premchendar Nandhikonda, Jonathan J. Temmer and Leggy A. Arnold, "A high throughput approach for the identification of promiscuous inhibitors among screening libraries with the use of a nucleophilic fluorescent probe" *245th ACS National Meeting & Exposition*, New Orleans, LA, April, **2013**.
182. Premchendar Nandhikonda, Megan M. Callum and Leggy A. Arnold "Identification of Promiscuous Inhibitors in Screening Libraries with the use of an Intrinsically Fluorescent Probe: High Throughput Screening Approach", *SLAS 2013, 2nd Annual Conference*, Orlando, FL, January **2013**.
183. Jonathan J. Temmer, Megan M. Callum, Premchendar Nandhikonda and Leggy A. Arnold "A fluorescence-based high throughput assay for the identification of promiscuous inhibitors", *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August **2012**.
184. Robin Goy, Nina Y. Yuan and Leggy A. Arnold "Expression and Purification of VDR-LBD" *Summer Undergraduate Research Symposium*, UWM, Milwaukee, WI, August **2012**.
185. Kelly A. Teske, Angela Zivkovic and Leggy A. Arnold "Rational Development of Reversible Inhibitors of the Vitamin D Receptor-Coregulator Interactions" *Student Awards Day*, UWM, Milwaukee, WI, May **2012**.
186. Kelly A. Teske, Angela Zivkovic and Leggy A. Arnold "Rational Development of Reversible Inhibitors of the Vitamin D Receptor-Coregulator Interactions" *243rd ACS National Meeting & Exposition*, San Diego, CA, March 25-29, **2012**.
187. Megan M. McCallum, Premchendar Nandhikonda and Leggy A. Arnold "High throughput determination of glutathione binding ability of small molecules with the use of intrinsically fluorescent probes" *Student Awards Day*, University of Wisconsin-Milwaukee, May **2012**.
188. Megan M. McCallum, Premchendar Nandhikonda and Leggy A. Arnold "High throughput determination of glutathione binding ability of small molecules with the use of intrinsically fluorescent probes" *243rd ACS National Meeting & Exposition*, San Diego, CA, March 25-29, **2012**.
189. Chinedum K. Kevin, Premchendar Nandhikonda and Leggy A. Arnold "Quantification of Small Molecule Vitamin D Receptor-Coregulator inhibition" *Spring Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2012**.
190. Chinedum K. Kevin, Premchendar Nandhikonda and Leggy A. Arnold "Quantification of Small Molecule Vitamin D Receptor-Coregulator inhibition" *Student Awards Day*, University of Wisconsin-Milwaukee, May **2012**.
191. Angela Zivkovic, Kelly A. Teske and Leggy A. Arnold "Synthesis of a Novel Non-secosteroidal Vitamin D Receptor Agonist" *Spring Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2012**.

192. Angela Zivkovic, Kelly A. Teske and Leggy A. Arnold “Synthesis of a Novel Non-secosteroidal Vitamin D Receptor Agonist” *Student Awards Day*, University of Wisconsin-Milwaukee, May **2012**.
193. Nina Y. Yuan and Leggy A. Arnold, "Benzodiazepine Specificity of GABA_A Receptor Subtypes: High-Throughput Electrophysiological Assay with Transiently Transfected Cells", *ACS National Conference San Diego* **2012**.
194. Nina Y. Yuan and Leggy A. Arnold, "Benzodiazepine Specificity of GABA_A Receptor Subtypes: High-Throughput Electrophysiological Assay with Transiently Transfected Cells", *UWM Chemistry Department Awards Day* **2012**.
195. Megan M. McCallum and Leggy A. Arnold “Miniaturizing Solubility and Permeability Assays for Small Molecules” *3rd Annual Chemistry in Southeastern Wisconsin Symposium, ACS Milwaukee Section – ACS Younger Chemists Committee*, Milwaukee, WI, November **2011**.
196. Nicholas Talerico, Premchendar Nandhikonda and Leggy A. Arnold , “Synthesis of Coregulator Binding Inhibitors for the Vitamin D Receptor”, *Summer Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2011**.
197. Nina Y. Yuan, James M. Cook and Leggy A. Arnold, “Benzodiazepine Specificity of GABA_A Receptor Subtypes” *Summer Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2011**.
198. Megan M. McCallum and Leggy A. Arnold, “Miniaturizing Solubility and Permeability Assays for Small Molecules”, *Awards Day*, University of Wisconsin Milwaukee **2011**.
199. Athena Baranowski and Leggy A. Arnold. "Cell-Based Assays Used to Study the Effects of Small Molecule Modulators of the Vitamin D Receptor-Coactivator Interactions," *Awards Day*, University of Wisconsin Milwaukee **2011**.
200. Tahniyath Ara and Leggy A. Arnold, “Temperature Dependency of VDR-LBD during Protein Purification” *Awards Day*, University of Wisconsin Milwaukee **2011**.
201. Nina Y. Yuan, James M. Cook and Leggy A. Arnold, "Electrophysiological Response of Benzodiazepines to GABA_A Receptor in Transiently Transfected Mammalian Cells", *Spring Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2011**.
202. Megan M. McCallum and Leggy A. Arnold, “Miniaturizing Solubility and Permeability Assays for Small Molecules”, *International ACS Conference, Anaheim* **2011**.
203. Nina Y. Yuan and Leggy A. Arnold, “Determination of binding modes for small molecule vitamin D receptor-coregulator inhibitors”, *Summer Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2010**.
204. Tahniyath Ara, Nina Y. Yuan and Leggy A. Arnold, “Characterization of Small Molecule Vitamin D Receptor-Coregulator Inhibitors”, *The Open House*, University of Wisconsin Milwaukee **2010**.
205. Travis R. Dove and Leggy A. Arnold, “Synthesis of vitamin D mimic LG190178”, *Summer Undergraduate Research Symposium*, University of Wisconsin Milwaukee **2010**.

PATENTS, LICENSURES, AND INVENTION FILING

1. Arnold, Alexander E., Stafford, Douglas C., Cook, James M., Nieman, Amanda N., Poe, Michael Ming-Jin, Li, Guanguan, PCT/US2021/036215 “*Use of substituted 5-(4-methyl-6-phenyl-4h-benzo[f]imidazo[1,5-a][1,4]diazepin-3-yl)-1,2,4-oxadiazoles in the treatment of inflammatory conditions*”, 12.15.2022.
2. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh, 2895965 **Spain** “*Moduladores del receptor de GABA(A) y métodos para controlar la hiperreactividad de las vías respiratorias y la inflamación en el asma*” 02.23.2022.
3. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 20210284649 **USA** “*Substituted benzo[f]imidazo[1,5-a][1,4]diazepines as GABA(a) receptor modulators*” 09.16.2021.
4. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 3500573, **European Patent Office**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 06.26.2019.
5. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 109790170, **China**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 05.21.2019.
6. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 112019003065, **Brazil**, “*Moduladores del*

receptor de GABA(A) y métodos para controlar la hiperreactividad de las vías respiratorias y la inflamación en el asma” 05.21.2019.

7. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 201917005915, **India**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 04.26.2019.
8. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 750672, **New Zealand**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 02.22.2019.
9. Arnold, Alexander E., Sidhu, Preetpal Singh, Nandhikonda, Premchendar, Singh, Rakesh K. 20180362500, USA “*Vitamin D receptor-coregulator inhibitors*” 12.20.2018.
10. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 3033964, **Canada**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 02.22.2018.
11. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh 2017313753, **Australia**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 02.22.2018.
12. Arnold, Alexander, E., Stafford, Douglas, C., Cook, James, M., Emala, Charles, W., Forkuo, Gloria, Jahan, Rajwana, Kodali, Revathi, Li, Guanguan, Stephen, Michael, Rajesh PCT/US2017/047185, **USA**, *Gaba(A) receptor modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” 08.16.2017.
13. Arnold, Alexander E., Sidhu, Preetpal Singh, Nandhikonda, Premchendar, Singh, Rakesh K. 20170174655, **USA** “*Vitamin D receptor-coregulator inhibitors*” 06.22.2017.
14. Stafford, Douglas, C., Cook, James, M., Arnold, Alexander, E., Emala, Charles, W., Gallos, George, Stephen, Michael, Rajesh 20150232473, **USA**, “*GABA_A agonists and methods of using to control airway hyperresponsiveness and inflammation in asthma*” 08.20.2015.
15. Stafford, Douglas, C., Cook, James, M., Arnold, Alexander, E., Emala, Charles, W., Gallos, George, Stephen, Michael, Rajesh 2897963, **European Patent Office**, “*Novel GABA(A) agonists and methods of using to control airway hyperresponsiveness and inflammation in asthma*” 07.29.2015.
16. Arnold, Alexander E., Sidhu, Preetpal Singh, Nandhikonda, Premchendar, Singh, Rakesh K. 20140194472, **USA** “*Vitamin D receptor-coregulator inhibitors*” 07.10.2014.
17. Stafford, Douglas, C., Cook, James, M., Arnold, Alexander, E., Emala, Charles, W., Gallos, George, Stephen, Michael, Rajesh PCT/US2013/060859, **USA** “*Novel GABA(A) agonists and methods of using to control airway hyperresponsiveness and inflammation in asthma*” 03.27.2014.
18. Arnold, Alexander E., Sidhu, Preetpal Singh, Nandhikonda, Premchendar, Singh, Rakesh K. PCT/US2012/052416, **USA** “*Vitamin D receptor-coregulator inhibitors*” 03.07.2013.
19. Exclusive Licensing Agreement of PCT/US2017/047185 to Pantherics on June **2021**.
20. Exclusive Licensing Agreement of PCT/US2013/060859 to Pantherics on November **2020**.
21. Exclusive Licensing Agreement of PCT/US2012/052416 to Systems Oncology on March **2017**.
22. Exclusive Licensing Agreement with KeraFAST (Boston, USA) that include the commercialization of the MSTI probe, January **2014**.
23. Provisional Patent OTT 1519, Alexander E. Arnold, James M. Cook, Charles W. Emala, Gloria S. Forkuo, Rajwana Jahan, Michael Poe, Douglas C. Stafford “*New oral small molecule treatments to control airway hyperresponsiveness and inflammation in asthma based on GABA(A) receptor modulators*” filed November **2016**.
24. Provisional patent OTT1368 “*High throughput identification of promiscuous inhibitors among screening libraries with the use of an intrinsically fluorescent probe*” Alexander E. Arnold, Megan McCallum, Premchendar Nandhikonda filed November **2013**.
25. Provisional Patent OTT 1516, Douglas C. Stafford, James M. Cook, Alexander E. Arnold, Charles W. Emala, Sr “*Novel GABA(A) Receptor Modulators and methods to control airway hyperresponsiveness and inflammation in asthma*” filed September **2012**.
26. Provisional patent OTT1319 “*Development of a GABA_A agonist to control airway hyperresponsiveness and inflammation in asthma*” Douglas C. Stafford, James M. Cook, Alexander E. Arnold, Charles W. Emala, Sr.; filed September **2012**.
27. Provisional patent OTT 1250 “*New Treatments for Cancer and Metabolic Diseases: Vitamin D Receptor-Coregulator Inhibitors*”, Alexander Arnold, filed August **2011**.

GRANTS AND FELLOWSHIPS (Total Funding at UWM: \$13,176,816.00)

2023 (Total funding:)

1. Arnold, A (PI) “*Support for purchase of a one-year license for Molecular Operating Environment software*”, sponsored by UWM, RAF grant, new, \$3000.00, **under review**. (March 2023).
2. Dockendorff, C (PI), Arnold A (supporting) “*Allosteric Modulation of PAR1 as an Approach to the Treatment of Traumatic Brain Injury*”, sponsored by NIH (R43), resubmission, \$699,531, **under review**. (Jul. 2023 – Jun. 2025).
3. Dockendorff, C. (PI), Arnold A (supporting) “*Inhibitors of thromboinflammation for the prevention and treatment of acute kidney injury*”, sponsored by NIH (R43), new, \$324,839, **under review**. (Jul. 2023 – Sept. 2024)

2022 (Total funding: \$311,089.00)

1. Saha, A (PI), Arnold, A (Co-PI) “*Combining Machine Learning and Computational Biophysics to Design the First small molecule Inhibitors of Interaction between Interleukin 4 and its Receptor to develop a new Treatment for Atopic Dermatitis*”, sponsored by UWM, DIG grant, new, \$88,000.00, **under review**. (July 2023-June 2026).
2. Peng, X (PI), Arnold, A (supportive) “*Novel DNA cross-linking agents and combination strategies for tumor-specific activation*”, sponsored by NIH R15, resubmission, \$448,392.00, **under review**. (July 2013-June 2026).
3. Kaul, M. (PI), Arnold, A. (supporting) “*Neuroprotection by IFN β in AIDS*” sponsored by NIH (R01), new, Research, awarding organization is national, **under review**, \$1,231,230.00 (April 2023 – March 2028).
4. Hillard, C (PI), Arnold (supportive), “*Development of Sterol Carrier Protein 2 Inhibitors as Anxiolytics*” sponsored by NIH (R01), new, Research, awarding organization is national, **under review**, \$2,677,056.00 (March 2023-February 2028).
5. Dockendorff Chris (PI), Arnold A. (Consultant) “*Allosteric, small molecule ligands of PAR1 for the treatment of traumatic brain injury*”, Dept. of Defense, new, Research, awarding organization is national, **not funded**, \$302,203.00 (January 2023- December 2025).
6. Arnold, A (PI) “*Medical countermeasures to chemical inhalation based on GABAA receptor targeting*” sponsored by NIH (R21), new, Research, awarding organization is national, **under review**, \$415,280.00 (April 2023 – March 2025).
7. Arnold, A (PI), Benko, A (Co-PI) “*Chemistry Laboratory Industry Program*” sponsored by WEDC, new, Instruction, awarding organization is local, **not funded**, \$4,899,523.00 (June 2022 – December 2024).
8. Donaldson, D. (PI), Frick (Co-PI), Arnold, A. (supporting) “*Development of EGX358, an Estrogen Receptor- β Agonist to Treat Menopause-Related Memory Loss & Hot Flashes*” sponsored by NIH (R43), new, Research, awarding organization is national, **funded**, \$224,756.00 (June 2022 – May 2023).
9. Arnold, A (PI) “*Optimizing GABAA receptor modulators to reduce TSLP linked to atopic dermatitis and asthma*” sponsored by NIH (R21), new, Research, awarding organization is national, **not funded**, \$400,233.00 (September 2022 – August 2024).
10. Stafford (PI), Arnold, A (Co-PI) “*Advancing PI301 to initial clinical testing*” sponsored by UWMRF (Bridge phase II grant), new, commercialization, awarding organization is local, **funded**, \$38,000.00 (April 2022 – March 2023).
11. Arnold, A (PI) “*Screening of GABAA receptor modulators to reduce TSLP in keratinocytes*” sponsored by UWMRF (CAP grant), new, research, awarding organization is local, **funded**, \$33,333.00 (September 2022 – August 2023).
12. Daniel Webb, Distinguished Dissertator Fellowship (UWM) **funded**. The support includes salary at \$15,000.00. (August 2022 – May 2023).
13. Dockendorff, C (PI), Arnold, A (supporting) “*Modulators of PAR1 for the Treatment of Sickle Cell Disease*” sponsored by NIH (R43), new, **recommended for funding**, \$299,791 (Apr. 2023 – Mar. 2024).
14. Dockendorff, C (PI), Arnold, A (supporting) “*Structure-guided design of anti-inflammatory modulators of PAR1*” sponsored by NSF (SBIR phase 1), new, **recommended for funding**, \$274,944 (projected Mar. 2023 – Feb. 2024).
15. Dockendorff, C (PI), Arnold A (supporting) “*Allosteric Modulation of PAR1 as an Approach to the Treatment of Traumatic Brain Injury*”, sponsored by NIH (R43), new, \$699,988, **not funded**. (Sept. 2022 – May 2024).

2021 (Total funding: \$730,974.00)

1. Kaul, M. (PI), Arnold, A. (supporting) “Effect of IFN β on HIV persistence and CNS injury” sponsored by NIH (R01), resubmission, Research, awarding organization is national, **not funded**, \$1,382,363.00 (July 2022 – June 2027).
2. Sem, Dan “Development of ER beta Agonists to Treat Post-Menopausal Memory Decline” sponsored by NIH (R15), resubmission, Research, awarding organization is federal, **not funded**, \$479,402 (April 2022- March 2025).
3. Arnold, A. (PI) “Development of new analgesics for neuropathic pain” sponsored by UWM Office of Research (ARC), new, Research, awarding organization is local, **not funded**, \$12,478.00 (March 2022 – February 2023).
4. Roy (PI), Arnold (Collaborator) “ATG13: A new player in ME/CFS” sponsored by NIH (R21), new, Research, awarding organization is federal, **not funded**, \$250,000.00 (April 2022- March 2024).
5. Frick (PI), Arnold, A. (Co-PI) “*Viral Helicases as Antiviral Targets*” sponsored by NIH (U15), new, Research, awarding organization is federal, **not funded**, \$920,405.00 (April 2022- March 2027).
6. Donaldson, D. (PI), Frick (Co-PI), Arnold, A. (supporting) “*Development of EGX358, an Estrogen Receptor- β Agonist to Treat Menopause-Related Memory Loss & Hot Flashes*” sponsored by CTSI, new, Research, awarding organization is regional, **not funded**, \$45,383.00 (December 2021 – November 2022).
7. Kaul, M. (PI), Arnold, A. (supporting) “Lipocalin-2 in HIV-Associated Neuronal Injury” sponsored by NIH (R01), resubmission, Research, awarding organization is national, **not funded**, \$1,965,763.00 (March 2021 – February 2026).
8. Stafford (PI), Arnold, A (Co-PI) “Advancing PI301 to initial clinical testing” sponsored by UWRF (Bridge Grant), new, Commercialization, awarding organization is local, **funded**, \$25,000.00 (April 2021 – March 2022).
9. Stafford (PI), Arnold, A (Co-PI) “Development of microencapsulated PI301 targeting lung GABAergic signaling” sponsored by NIH (R43), resubmission, Research, awarding organization is national, **funded**, \$255,841.00 April 2022 – March 2023).
10. Hossain, M (PI), Arnold (Co-PI) “*Development of New Microtubule Inhibitors as Anticancer Agents*” sponsored by the UWM Research Foundation, new, Research, awarding organization is local, **not funded**, \$55,000.00 (August 2021 - September 2022).
11. Dockendorff Chris (PI), Arnold A. (Consultant) “*Allosteric, small molecule ligands of PARI for the treatment of ALS*”, Dept. of Defense Amyotrophic Lateral Sclerosis Research Program Therapeutic Idea Award, new, Research, awarding organization is national, **not funded**, \$330,203.00 (January 2022- December 2024).
12. Kaul, M. (PI), Arnold, A. (supporting) “*Neuroprotection by IFN β in AIDS*” sponsored by NIH (R01), renewal, Research, awarding organization is national, **not funded**, \$2,123,543.00 (September 2021 – August 2026).
13. Stafford (PI), Arnold, A (Co-PI) “Development of microencapsulated PI301 targeting lung GABAergic signaling” sponsored by NIH (R43), new, Research, awarding organization is national, **not funded**, \$255,841.00 (September 2021 – August 2022).
14. Arnold, A (PI), Stafford (Co-PI), Gurvich (Co-PI) “*A novel asthma drug candidate targeting the GABAergic system in lung inflammation*” sponsored by NIH (R42), new, Research, awarding organization is national, **not funded**, \$1,465,623.00 (September 2021 – August 2023).
15. Dockendorff Chris (PI), Arnold A. (Supporting) “*Novel Oral Anti-Inflammatories for the Prevention and Treatment of Sepsis and COVID-19*” sponsored by NIH (R43), new, awarding organization is national, **not funded**, \$224,000.00 (December 2021- November 2022).
16. Dockendorff Chris (PI), Arnold A. (Supporting) “Structure-Based Design of eEF2 Inhibitors as Antifungal Agents” sponsored by NIH (R21), resubmission, awarding organization is national, **not funded**, \$257,000.00 (November 2021 – October 2023).
17. Donaldson, D. (PI), Frick (Co-PI), Arnold, A. (supporting) “*Development of EGX358, an Estrogen Receptor- β Agonist to Treat Menopause-Related Memory Loss & Hot Flashes*” sponsored by NIH (R43), resubmission, Research, awarding organization is national, **not funded**, \$224,756.00 (December 2021 – November 2022).
18. Arnold (PI) “*Development of new treatments for atopic dermatitis*” sponsored by Pantherics Inc, Research, awarding organization is national, **funded**, \$150,000.00 (January 2021 - July 2021).
19. Kaul, M. (PI), Arnold, A. (supporting) “*Long-term Neural Cell Injury by Methamphetamine*” sponsored by NIH (R01), resubmission, Research, awarding organization is national, **not funded**, \$2,345,343.00 (September 2021 – August 2026).
20. Nicolas Zahn, Distinguished Dissertator Fellowship (UWM) **funded**. The support includes salary at \$15,000.00. (August 2021 – May 2022).
21. Dockendorff, C. (PI), Arnold, A. (supporting) “*Allosteric Modulation of PARI as a Therapeutic Approach to the Treatment of Traumatic Brain Injury*” sponsored by Dept. of Defense, new, **not funded**, \$299,521 (Jan. 2022 – Dec. 2022).

22. Dockendorff, C. (PI), Arnold, A. (supporting) “*Allosteric, small molecule ligands of PARI for the treatment of diabetic nephropathy*” sponsored by Dept. of Defense, new, **funded**, \$285,133 (Apr. 2022 – Nov. 2023).
23. Dockendorff, C. (PI), Arnold, A. (supporting) “*Parmodulins as anti-inflammatory and antithrombotic agents for the treatment of sepsis and COVID-19*” sponsored by NIH (R01), resubmission, **not funded**, \$2,975,704 (Jan. 2022 – Dec. 2025).

2020 (Total funding: \$3,392,970.00)

1. Widlansky, M (PI), Arnold, A (Co-PI), Hill, B (Co-PI) “*Targeting Mitochondrial Dynamics Proteins to Reverse Diabetic Vascular Dysfunction*” sponsored by NHLBI, renewal, Research, awarding organization is national, **not funded**, \$2,665,763.00 (August 2021 - July 2026).
2. Arnold, A (PI), Stafford (Co-PI), Gurvich (Co-PI) “*A novel asthma drug candidate targeting the GABAergic system in lung inflammation*” sponsored by NIH (R42), resubmission, Research, awarding organization is national, **not funded**, \$1,473,403.00 (March 2021 – February 2023).
3. Kaul, M. (PI), Arnold, A. (supporting) “*Lipocalin-2 in HIV-Associated Neuronal Injury*” sponsored by NIH (R01), new, Research, awarding organization is national, **not funded**, \$1,965,763.00 (March 2021 – February 2026).
4. Sem, D. (PI), Kurifs, J. (Co-PI) Arnold, A. (Consultant) “*Dithio Probes to Monitor Thiol Levels in Multiple Tissues Undergoing Oxidative Stress: Tools for drug screening and diagnosis*” sponsored by NSF, Partnerships for Innovation Grant, new, awarding organization is national, **not funded**, \$165,763.00 (December 2020 – November 2022).
5. Donaldson, D. (PI), Frick (Co-PI), Arnold, A. (Co-PI) “*Development of EGX358, an Estrogen Receptor- β Agonist to Treat Menopause-Related Memory Loss & Hot Flashes*” sponsored by NIH (R43), new, Research, awarding organization is national, **not funded**, \$224,756.00 (December 2020 – November 2021).
6. Dockendorff C. (PI), Arnold, A. (consultant) “*Parmodulins as Selective Anti-Inflammatory Agents for the Treatment of Osteoporosis*” sponsored by NIH (R41), new, Research, awarding organization is national, **not funded**, \$198,292.00 (March 2021 – February 2022).
7. Dockendorff C. (PI), Arnold, A. (consultant) “*Small Molecule PARI Modulators for the Treatment of Acute and Chronic Kidney Disease*” sponsored by NIH (R01), resubmission, Research, awarding organization is national, **not funded**, \$1,283,292.00 (September 2021– August 2026).
8. Dockendorff C. (PI), Arnold, A. (Co-I) “*Parmodulins as anti-inflammatory and antithrombotic agents for the treatment of COVID-19*” sponsored by NIH (R01), new, Research, awarding organization is national, **not funded**, \$1,965,763.00 (December 2020 – November 2025).
9. Teske, K. (PI), Arnold, A. (Co-PI), “*Identification and evaluation of inhibitors of oncogenic microRNA-18a*”, sponsored by NIH (R15), new, Research, awarding organization is national, **not funded**, \$624,756.00 (December 2020 – November 2025).
10. Fellowships for two graduate students were negotiated with Millipore Sigma for summer 2020. The support includes salary and fringes **funded** at \$9,000.00 (Summer 2020).
11. Hossain, M (PI), Arnold (Co-PI) “*Development of New Microtubule Inhibitors as Anticancer Agents*” sponsored by the UWM Research Foundation, new, Research, awarding organization is local, **not funded**, \$55,000.00 (August 2020 - September 2021).
12. Kaul, M. (PI), Arnold, A. (supporting) “*Neurotoxicity of antiretrovirals (ARV) treatments*” sponsored by NIH (R01), new, Research, awarding organization is national, **not funded**, \$1,345,403.00 (July 2020 – June 2025).
13. Arnold, A (PI), Stafford (Co-PI) “*MIDD0301, a new drug to maintain respiratory health in infectious or allergic disorders*” sponsored by Harrington Discovery Institute, new, Research, awarding organization is national, **not funded**, \$149,230.00 (September 2020 – August 2021).
14. Kaul, M. (PI), Arnold, A. (supporting) “*Methamphetamine effect on HIV persistence*” sponsored by NIH NIDA (R01), new, Research, awarding organization is national, **Funded**, \$3,234,740.00 (June 2020 – May 2025).
15. Arnold, A (PI), Stafford (Co-PI), Gurvich (Co-PI) “*A novel asthma drug candidate targeting the GABAergic system in lung inflammation*” sponsored by NIH (R42), new, Research, awarding organization is national, **not funded**, \$1,465,623.00 (September 2020 – August 2022).

2019 (Total funding: \$763,442.00)

1. Jed Hubbs (PI), Arnold A. (Co-PI) R43AR074369 “*Development of a fixed-dose combination therapy for the treatment of chronic musculoskeletal pain*” sponsored by NIH (SBIR), Research, awarding organization is national, **funded** \$225,000.00 (November 2019 – October 2020).
2. Kaul, M. (PI), Arnold, A. (supporting) “Antiretroviral neurotoxicity in the HIV gp120-transgenic mouse model of neuroHIV” sponsored by NIH (R21), new, Research, awarding organization is national, **not funded**, \$624,756.00 (December 2019 – November 2021).
3. Fellowships for two graduate students were negotiated with Eurofins for spring 2019. The support includes salary and fringes **funded** at \$31,390.00. (January 2019 – September 2019).
4. Nicolas Zahn, Distinguished Graduate Fellowship (UWM) **funded**. The support includes salary at \$15,000.00. (August 2019 – May 2020).
5. Arnold, A (PI), Cook, J (PD/PI) “*Novel asthma drug discovery by defining the GABAergic system in lung inflammation*” sponsored by NIH (R01), renewal, Research, awarding organization is national, **not funded**, \$2,626,240.00 (November 2019 – October 2024).
6. Dockendorff, C. (PI), Arnold, A (consultant) “*pH-Sensitive Analgesics with Low Abuse Potential for the Treatment of Inflammatory Pain*”, sponsored by NIH (R01), new, Research, awarding organization is national, **not funded**, \$1,245,333.00 (December 2019 – November 2024).
7. Dockendorff, C. (PI), Arnold, A (Co-I) “*Small molecule PARI modulators for the treatment of acute and chronic kidney disease*”, sponsored by NIH (R01), new, Research, awarding organization is national, **not funded**, \$1,818,970.00 (December 2019 – November 2024).
8. Dockendorff, C. (PI), Arnold, A. (supporting) “*Novel Approaches to the Modulation of Protease-Activated Receptor (PAR) Signaling*”, sponsored by NIH (R15), renewal, **funded**, \$455,662 (Feb. 2020 – Dec. 2022).
9. Dockendorff, C. (PI), Arnold A. (supporting) “*Bivalent PAR Ligands for the Treatment of Pulmonary Fibrosis*”, sponsored by Dept. of Defense, new, **not funded**, \$298,050.
10. Arnold, A (PI) “*Preclinical IND-Enabling Development of MIDD0301, a New Chemical Entity for Asthma Treatment*” sponsored by DoD (Military Medical Research and Development), new, Research, awarding organization is national, **not funded**, \$2,757,601.00 (January 2020 – December 2021).
11. Fellowships for two graduate students were negotiated with Eurofins for fall 2019. The support includes salary and fringes **funded** at \$36,390.00. (Fall 2019 – January 2020).

2018 (Total funding: \$835,710.00)

1. Arnold, A (PI), Silvaggi and Mirza (Co-PI) “*Mass spectrometry-directed undergraduate research to improve economic development in Wisconsin*” sponsored by UWM system, new, Undergraduate Research, awarding organization is local, **not funded**, \$67,352.00 (February 2019- January 2020).
2. Arnold, A (PI), Stafford (Co-PI), Cook (Co-PI) R41HL147658 “*A novel asthma drug candidate targeting the GABAergic system in lung inflammation*” sponsored by NIH (R41), new, Research, awarding organization is national, **funded**, \$224,756.00 (March 2019 – February 2020).
3. Fellowships for two graduate students were negotiated with Eurofins for fall 2018. The support includes salary and fringes at \$31,390.00. (September 2018 – January 2019).
4. Arnold, A. (PI), Grant Research Growth Initiative (RGI), “*Pharmacological Characterization of Calcitriol Acid as an Anti-Inflammatory*” sponsored by Graduate School at UWM, \$98,044.00, **funded**. (July 2019-June 2020).
5. Arnold, A (PI), Cook, J (Co-PI) “*Novel asthma drug discovery by defining the GABAergic system in lung inflammation*” sponsored by NIH (R01), renewal, Research, awarding organization is national, **not funded**, \$2,640,377.00 (February 2019 – January 2024).
6. Sengupta J, Cunningham C, Arnold A “*Analgesic Effects of Biased Opioid Agonists in Pelvic Pain; a non-addictive pain therapy*” CTSI Pilot Start-up Award Proposal, **not funded** \$50,000.00 (October 2018 – September 2019).
7. Arnold, A (PI), Cook, J (Co-PI) “*Selectively Targeting GABA_A Receptors to Treat Neuropathic Pain*” sponsored by NIH (R01), Research, awarding organization is national, **not funded**, \$2,568,397.00 (October 2018 – September 2023).
8. Jed Hubbs (PI), Arnold A. (Co-PI) “*Subtype selective GABA_A receptor modulators for the treatment of neuropathic pain*” sponsored by NIH (SBIR) resubmission, Research, awarding organization is national, **not funded**, \$251,624.00, (October 2018 – September 2020).
9. Arnold, A. (PI), Johnson N. (Co-PI) “*Development of new inhibitors for pepsin*”, sponsored by MCW, \$14,653.00, **funded** (May 2018- July 2018).

10. Jed Hubbs (PI), Arnold A. (Co-PI) “*Subtype-Selective GABA_A Receptor Modulators as Improved Anticonvulsants*” sponsored by Epilepsy Foundation, resubmission, Research, awarding organization is national, \$ 328,600.00, **not funded**. (October 2018 – September 2019).
11. Jed Hubbs (PI), Arnold A. (Co-PI) R43NS107051 “*Subtype Selective GABA_A Receptor Modulators for the Treatment of Drave syndrome*” sponsored by NIH (SBIR), resubmission, Research, awarding organization is national, **funded**, \$466.867.00, (March 2019 – February 2020).

2017 (Total funding: \$60,426.00)

1. Jed Hubbs (PI), Arnold A. (Co-PI) “*Development of a fixed-dose combination therapy for the treatment of arthritic pain*” sponsored by NIH (SBIR), Research, awarding organization is national, **not funded** \$230,000.00 (July 2018 – June 2019).
2. Arnold, A. (PI), Grant Research Growth Initiative (RGI), “*Evaluation of calcitroic acid and its phase II metabolites*” sponsored by Graduate School at UWM, \$108,244.00, **not funded**. (July 2018-June 2019).
3. Jed Hubbs (PI), Arnold A. (Co-PI) “*Subtype-Selective GABA_A Receptor Modulators as Improved Anticonvulsants*” sponsored by Epilepsy Foundation, Research, awarding organization is national, \$ 328,600.00, **not funded**. (October 2017 – September 2018).
4. Jed Hubbs (PI), Arnold A. (Co-PI) “*Subtype selective GABA_A receptor modulators for the treatment of neuropathic pain*” sponsored by NIH (SBIR), Research, awarding organization is national, **not funded**, \$1,929,376.00, (January 2018 – December 2020).
5. Jed Hubbs (PI), Arnold A. (Co-PI) “*Subtype Selective GABA_A Receptor Modulators for the Treatment of Drave syndrome*” sponsored by NIH (SBIR), Research, awarding organization is national, **not funded**, \$466.867.00, (April 2018 – March 2019).
6. Arnold, A (PI), “*Evaluation of 31B as new cancer agent*”, sponsored by Systems Oncology, \$3078.00, **funded**, (September 2017-January 2018)
7. Peng, X (PI), Arnold, A (Co-PI) “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by NIH R21, resubmission, \$144,954.00, **not funded**. (June 2017-May 2019).
8. Arnold, A (PI), Stafford, D (Co-PI), Cook, J.(Co-PI), grant (Catalyst), “*Targeting Microglia in Neuropathic Pain Drug Discovery*”, sponsored by UWM Research Foundation, awarding organization is local, \$50,000.00, **funded**. (July 2017-June 2018)
9. Arnold, A (PI), “*Evaluation of 31B as new cancer agent*”, sponsored research by Systems Oncology, \$7,348.00, **funded**, (May 2017 - October 2017)

2016 (Total funding: \$0)

1. Arnold, A. (PI) “*Investigations of calcitroic acid and its metabolites*”, sponsored by Graduate School UWM, Research growth initiative (RGI), **not funded**, \$102,444.00, (June 2017-May 2018).
2. Arnold, A. (PI), Cook (Co-PI) Hubbs (Co-PI), Stafford (Co-PI) “*Subtype Selective GABA_A Receptor Modulators for the Treatment of Neuropathic Pain*”, sponsored by the NIH (UH2/UH3 grant), \$1,929,376.00, **not funded** (May 2017-April 2020).
3. Peng, X (PI), Arnold, A (Co-PI) “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by NIH (R03) resubmission, \$144,954.00, **not funded**. (May 2017 - April 2019).
4. St. Maurice, M. (PI) Arnold, A. (Co-PI), Grant “*High-throughput assay development for novel probes targeting pyruvate carboxylase*” sponsored by NIH (R01), \$868,250.00, **not funded**. (July 2016-June 2019).
5. Peng, X (PI), Arnold, A (Co-PI) “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by NIH (R03), \$144,954.00, **not funded**. (June 2016-May 2018).

2015 (Total funding: \$2,725,763.00)

1. Peng, X (PI), Arnold, A (Co-PI) “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by Falk Medical Research Trust, \$396,063.00, **not funded**. (January 2016-December 2017).
2. Widlansky, M (PI), Arnold, A (Co-PI), Hill, B “*Endothelial function in human diabetes: role of mitochondrial fission proteins*” sponsored by NHLBI, R01HL125409, \$2,665,763.00 **funded** (March 2016 - February 2021).
3. Hill, Blake (PI), Brian Volkman (Co-PI) Arnold, A (Collaborator) “*A Structure-Based Drug Discovery Resource for Clinical and Basic Scientists*” sponsored by MCW, \$60,000, **funded** (June 2015- May 2016)

4. Peng, X (PI), Arnold, A (Co-PI) “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by NIH (R03), \$144,954.00, **not Funded**. (May 2016 - April 2018).
5. Johnston, N. (PI) Arnold, A. (Co-PI), Grant “*Novel Pepsin Inhibitors for the Treatment of Laryngopharyngeal Reflux Disease*” sponsored by Falk Medical Research Trust, \$355,035.00, **not Funded**. (April 2015-March 2016).
6. Dockendorff, C. (PI), Arnold, A (Co-PI), Donaldson, B. (Co-PI), Kovriguine, E. (Co-PI), St. Maurice, M. (Co-PI), Yang, P. (Co-PI), Ghasemzadeh, B. (Co-PI) Innovation Fund “*Milwaukee Institute for Drug Discovery Chemistry Core Facility*” sponsored by Marquette University 250,000.00, **not Funded** (September 2015-August 2017).
7. St. Maurice, M. (PI) Arnold, A. (Co-PI), Grant “*High-throughput assay development for novel probes targeting pyruvate carboxylase*” sponsored by NIH, \$868,250.00, **not Funded**. (July 2015-June 2018).

2014 (Total funding: \$2,244,109.00)

1. Peng, X. (PI), Arnold, A. (Co-PI), Grant (RGI) “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by Graduate School at UWM, RGI Funding, \$84,000.00, **Funded**. (July 2015-June 2016).
2. Arnold, A. (PI), Grant (Catalyst) “*Novel assays to identify promiscuous inhibitors among drug candidates*”, sponsored by Graduate School at UWM, RGI Funding, \$62,000.00, **not funded**. (July 2015-June 2016).
3. Cook J.M. (PI), Arnold, A. (Co-PI), Grant R01 resubmission, “*Development of new drugs for asthma by targeting GABA_A receptors in the lung*”, sponsored by NIH/NIHLB R01HL118561, awarding organization is Federal, \$1,965,763.00 **funded** (September 2014 - June 2018).
4. Cook J. (PI), Arnold A. (Co-Investigator), Stafford (Co-Investigator), Grant (Catalyst), “*New Treatments for asthma that target GABA_A receptors in the lung*”, sponsored by UWM Research Foundation, awarding organization is local, \$50,000.00, **funded**. (July 2014-June 2015)
5. Arnold, A. (PI), Grant (Catalyst), “*Development of pre-clinical assays to characterize drug candidates prior to in vivo studies*”, sponsored by UWM Research Foundation, awarding organization is local, \$50,000.00, **not funded**. (July 2014-June 2015).
6. Peng, X. (PI), Arnold, A. (Co-PI), Grant (Catalyst), “*The pharmacokinetics and In vivo efficacy of ROS-activated anticancer prodrugs*”, sponsored by UWM Research Foundation, awarding organization is local, \$60,000.00, **funded**. (July 2014-June 2015).
7. Arnold, A. (PI), Daniel Sem (PI), Grant, “*Commercialization of a Universal Kinase and GTPase Assay*”, sponsored by the State of Wisconsin, awarding organization is the UWM Applied Chemistry Center, \$84,346.00, **funded** (April 2014 - June 2015).

2013 (Total funding: \$3,154,200.00)

1. Arnold, A. (PI Scientist), Stafford, D. (PI), Geissinger P. (Co-PI), Grant, “Grant, “Equipment Grant for Teaching & Research” sponsored by Shimadzu, \$1,300,000.00, **funded** (January 2014-December 2018).
2. Arnold, A. (PI), Silvaggi, N. (Co-Investigator), Grant R01, “*Vitamin D receptor-Coregulator Interaction as Anticancer Targets*”, sponsored by NIH/NCI awarding organization is Federal, \$1,102,410.00, **not funded** (April 2014 - March 2017).
3. Arnold A./Palmer A. (PI), Grant R01, “*Glo1 inhibitors: A novel class of GABAergic anxiolytic and antidepressant drugs*”, sponsored by NIH/NIMH, awarding organization is Federal, \$2,789,230.00, **not funded** (December 2013 – November 2018).
4. Cook J.M. (PI), Arnold, A. (Co-PI), Grant R01, “*Development of new drugs for asthma by targeting GABA_A receptors in the lung*”, sponsored by NIH/NIHLB, awarding organization is Federal, \$1,861,161.00, **not funded**. (June 2013 – May 2018).
5. Cook J.M. (PI), Arnold, A. (Co-PI), Grant R01 resubmission, “*Design of New Therapeutic Agents to Treat Schizophrenia*”, sponsored by NIH/NIMH, awarding organization is Federal, \$1,850,690.00, **funded** (June 2013 - May 2018).
6. Arnold, A. (PI), Grant, “*Quantification of different GABA_A receptor alpha subunits in icell neurons*”, sponsored by Cellular Dynamics International, awarding organization is national, \$3,510.00, **funded**. (February 2013 – July 2013).

2012 (Total funding: \$1,863,169.00)

1. Arnold, A. (PI), Grant, "*New Treatments for asthma that target GABA_A receptors in the lung*", sponsored by Research Growth Initiative/Graduate School UWM, awarding organization is University of Wisconsin-Milwaukee, \$113,848.00, **not funded**. (July 2013 – December 2014).
2. Arnold, A. (PI), Grant, "*Determination of alpha subtype selective of GABA_A receptor ligands*", sponsored by ConcertPharma, awarding is national, \$2,895.44, **funded**. (October 2012 – September 2013).
3. Arnold, A. (PI), Grant (Catalyst), "*In vivo evaluation of selective inhibitors of the vitamin D receptor-Coregulator interactions*", sponsored by UWM Research Foundation, awarding organization is local, \$35,000.00, **funded**. (July 2012-June 2013).
4. Cook J.M. (PI), Arnold, A. (Co-PI), Grant R01 resubmission, "*Synthesis of Alpha2/Alpha3 GABA Agonists to Treat Neuropathic Pain*", sponsored by NIH/NINDS, awarding organization is Federal, \$1,825,274.00, **funded**. (January 2013 – December (2017)).
5. Cook J.M., (PI), Arnold, A. (Co-PI), "*Development and validation of a GABA_A agonist to control airway hyperresponsiveness and inflammation in asthma*" sponsored by American Asthma Foundation, awarding organization is national, \$750,000.00, **not funded**. (July 2012 – June 2015).
6. Arnold, A. (PI), Target Development Grant, "*Vitamin D receptor-coregulator inhibitors as novel chemotherapeutics for highly resistance ovarian and prostate cancer*" TPP global development, awarding organization is international, coverage of commercialization with shared revenue, **not funded**. (May 2012).
7. Arnold, A. (PI), Grant (Shaw Award), "*3-Indolyl methanamines as new cancer treatments*" sponsored by Greater Milwaukee Foundation, awarding organization is local, \$200,000.00, **not funded**. (May 2012-May 2017).
8. Cook J.M., (PI), Arnold, A. (Co-PI), "*Sub-type Selective GABA_A Agonists for PTSD*", sponsored by US Army Medical Research and Material Command (USAMRMC), awarding organization is University of Wisconsin-Milwaukee, \$1,000,000.00, **not funded**. (July 2012 – June 2014).
9. Arnold, A. (PI), Grant, "*Vitamin D Receptor–Coregulator interactions: A new pharmaceutical target for colorectal cancer*", sponsored by Department of Defense, awarding organization is University of Wisconsin-Milwaukee, \$293,013.00, **not funded**. (September 2012 – August 2014).

2011 (Total funding: \$110,140.00)

1. Arnold, A. (PI), Grant, "*Vitamin D Receptor-Coregulator Interactions as Anticancer Targets*", sponsored by Research Growth Initiative/Graduate School UWM, awarding organization is University of Wisconsin-Milwaukee, \$90,140.00, **Funded**. (July 2012 - June 2013).
2. Cook J.M. (PI), Arnold, A. (Co-PI), Grant R01, "*Design of New Therapeutic Agents to Treat Schizophrenia*", sponsored by NIH/NIMH, awarding organization is Federal, \$1,838,816.00, **not funded** (June 2011 - May 2016).
3. Arnold Cook J.M. (PI), Arnold, A. (Co-PI), Grant R01, "*Synthesis of Alpha2/Alpha3 GABA Agonists to Treat Neuropathic Pain*", sponsored by NIH/NIMH, awarding organization is Federal, \$ 1,838,816.00, **not Funded**. (June 2011 - May 2016).
4. Arnold, A. (PI), Sponsored Research, "*Special RFP for new or enhanced Undergraduate Research*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$20,000.00, **Funded**. (July 2011 - August 2011).
5. Arnold, A. (PI), Grant (Shaw Award), "*Transcriptional inhibitors of 24-hydroxylase as new treatments for cancer*" sponsored by Greater Milwaukee Foundation, awarding organization is local, \$200,000.00, **not Funded**. (May 2011-May 2016).
6. Arnold, A. (PI), Grant R01, "*Vitamin D Receptor–Coregulator Interactions as Targets for New Therapeutics*", sponsored by NIH, awarding organization is Federal, \$364,294.00, **not Funded**. (July 2011 - June 2013).

2010 (Total funding: \$114,418.00)

1. Cook J.M. (PI), Arnold, A. (Co-PI), Subcontract for R01, "*Design and Synthesis of Anxiolytics*", sponsored by NIH/NIMH, awarding organization is Federal, \$106,918.00, **Funded**. (June 2010 - May 2011).
2. Sem D.S. (PI), Arnold, A. (Supporting), Instrumentation Grant, "*Acquisition of an LC-MS/MS system for chemical and proteomic studies*", sponsored by NSF, awarding organization is Federal, \$279,818.00, **not Funded**. (December 2010 - November 2011).
3. Arnold, A. (PI), Sponsored Research, "*Research Fellows Program*", sponsored by UWM Foundation, awarding organization is University of Wisconsin-Milwaukee, \$7,500.00, **Funded**. (February 2011 - January 2012).

4. Arnold, A. (PI), Grant RGI, "*New Treatments for Sarcoidosis based on Vitamin D Receptor-Coactivator Inhibition*", sponsored by Research Growth Initiative/Graduate School, awarding organization is University of Wisconsin-Milwaukee, \$84,395.00, **not Funded**. (July 2011 - June 2012).

2009 (Total funding: \$1,761,100.00)

1. Arnold, A. (PI), Grant R03, "*Small molecule inhibitors of the vitamin D receptor-coactivator interaction*", sponsored by NIH/NIDA, awarding organization is Federal, \$73,850.00, **Funded** (July 2010 - June 2012).
2. Bikle, D.D. (PI), Arnold, A. (Supporting); Grant R01, renewal, "*Vitamin D Receptor Coactivators in Keratinocytes*", sponsored by NIH/NIAMS, awarding organization is Federal, \$1,667,250.00, **Funded** (July 2010 - May 2015).
3. Arnold, A. (PI), Grant RGI, "*Small Molecule Inhibitors of Vitamin D Receptor-Coregulator Interactions*", sponsored by Research Growth Initiative/Graduate School UWM, awarding organization is University of Wisconsin-Milwaukee, \$192,482.00, **not Funded**. (July 2010 - June 2011).
4. Arnold, A. (PI), Sponsored Research, "*Special RFP for new or enhanced Undergraduate Research*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$20,000.00, **Funded**. (October 2009 - August 2010).

Before UWM: (Total funding: \$5,922,092.00)

1. Feau C. (PI), Arnold A. (Supporting), Grant "*Novel Small Molecule Antagonists of the Interaction of the Androgen Receptor and Transcriptional Co-regulators*", sponsored by the Department of Defense, awarding organization is Federal, \$113,797.00, **Funded**. (January 2007-Dec 2008).
2. Arnold A. (PI), Grant, "*Development of a new class of drugs against cancer*", sponsored by the Cancer Research Fund of the Damon Runyon Walter Winchell Foundation, awarding organization is private, 128,500.00, **not Funded**. (August 2003 – July 2006)
3. Guy, R.K. (PI), Arnold, A. (Supporting), Grant, "*Novel inhibitors of nuclear receptor function*", sponsored by NIH/NIDDK, awarding organization is Federal, \$3,152,295.00, **Funded**. (January 2000 – December 2011).
4. Arnold, A. (Supporting), Grant, "*Economy-Ecology-Technology*", sponsored by Dutch Ministry of Economic Affairs, awarding organization is Federal, \$2,500,000.00, **Funded**. (June 2000 – May 2004).
5. Arnold, A. (PI), Fellowship, "*Ubbo Emmius Ph.D. Scholarship*", sponsored by University of Groningen, awarding organization is national, \$150,000.00, **Funded**. (August 1998 – July 2002).
6. Arnold, A. (PI), Fellowship, "*ERASMUS fellowship*", sponsored by Deutscher Akademische Austausch Dienst, awarding organization is Federal, \$6,000.00, **Funded**. (May 1995- April 1996).

Undergraduate Student Support (SURF and others): total funding: \$150,376.00

2022 (Total funding: \$19,016)

1. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research "*Evaluation of imidazodiazepines for reduction of nitric oxide in activated microglia*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$5,000, **Funded**. (September 2022 – May 2023).
2. Arnold A. (PI), Molly Kiley (Undergraduate Student) Sponsored Research "*Evaluation of new compounds in respect to cytotoxicity and TSLP reduction*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3000, **Funded**. (September 2022 – June 2023).
3. Arnold A. (PI), Sarah Swartwout (Undergraduate Student) Sponsored Research "*Synthesis of novel ligands for the translocator protein TSPO*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500, **Funded**. (September 2022 – January 2023).
4. Arnold A. (PI), Ahmad Masoud (Undergraduate Student) Sponsored Research "*Large scale synthesis of PI301 and PI560*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500, **Funded**. (September 2022 – January 2023).

5. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Evaluation of imidazodiazepines for reduction of nitric oxide in activated microglia*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,160, Funded. (June 2022 – August 2022).
6. Arnold A. (PI), Molly Kiley (Undergraduate Student) Sponsored Research “*Evaluation of novel imidazodiazepines in respect to cytotoxicity using Cell-Titer-Glo*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,976, Funded. (June 2022 – August 2022).
7. Arnold A. (PI), Julia Vogt (Undergraduate Student) Sponsored Research “*Synthesis of imidazodiazepines ligands*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,440, Funded. (January 2022 – May 2022).
8. Arnold A. (PI), Sarah Swartwout (Undergraduate Student) Sponsored Research “*Synthesis of new GABA_AR ligands to treat asthma*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,440, Funded. (January 2022 – May 2022).

2021 (Total funding: \$7,500)

1. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Evaluation of imidazodiazepines as kappa opioid receptor ligands*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000, Funded. (September 2021 – May 2022).
2. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Evaluation of imidazodiazepines as kappa opioid receptor ligands*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000, Funded. (June 2021 – August 2021).
3. Arnold A. (PI), Brittany MacPherson (Undergraduate Student) Sponsored Research “*Evaluation of new oral agents to treat asthma*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (January 2021 – May 2021).
4. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Evaluation of imidazodiazepines as kappa opioid receptor ligands*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,000, Funded. (January 2021 – May 2021).

2020 (Total funding: \$10,404)

1. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Evaluation of imidazodiazepines as kappa opioid receptor ligands*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,904.00, Funded. (August 2020 – December 2020).
2. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Evaluation of imidazodiazepines as kappa opioid receptor ligands*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2020 – August 2020).
3. Arnold A. (PI), Dylan Hoffman (Undergraduate Student) Sponsored Research “*Synthesis of glucuronides*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2020 – August 2020).
4. Arnold A. (PI), Tylor Wilcox (Undergraduate Student) Sponsored Research “*Investigation of new GABA_AR ligands to reduce inflammation mediated by microglia*” sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (January 2020-May 2020).

2019 (Total funding: \$16,426)

1. Arnold A. (PI), Noorjot Kaur (Undergraduate Student) Sponsored Research “*Evaluation of cellular and gene toxicity of MIDD0301*” sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2019-August 2019).
2. Arnold A. (PI), Dylan Hoffman (Undergraduate Student) Sponsored Research “*Synthesis of a biotin-labeled lead compound to inhibit human cytomegalovirus infections*” sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,926.00, Funded. (September 2019 – May 2020).
3. Arnold A. (PI), Nicholas Martinez (Undergraduate Student) Sponsored Research, “*Characterization of new imidazodiazepines for Dravet Syndrome*” sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2019-August 2019).

4. Arnold A. (PI), Dylan Hoffman (Undergraduate Student) Sponsored Research “*Evaluation of cellular and gene toxicity of new imidazodiazepines*” sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2019-August 2019).
5. Arnold, A. (PI), Kehoe, A. (Undergraduate Student) Sponsored Research, “*Investigation of CNS effects of novel imidazobenzodiazepines*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (December 2018-May 2019).
6. Arnold, A. (PI), Mikulsky, B. (Undergraduate Student) Sponsored Research, “*Determining the Mechanisms of Neuropathic Pain*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (December 2018-May 2018).
7. Arnold, A. (PI), Webb, D. (Undergraduate Student) Sponsored Research, “*Synthesis of an intrinsic fluorescent ligand for VDR*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (December 2018-May 2018).

2018 (Total funding: \$14,330.00)

1. Arnold, A. (PI), Kehoe, A. (Undergraduate Student) Sponsored Research, “*Investigation of CNS effects of novel imidazobenzodiazepines*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (September – December 2018).
2. Arnold, A. (PI), Mikulsky, B. (Undergraduate Student) Sponsored Research, “*Determining the Mechanisms of Neuropathic Pain*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (September – December 2018).
3. Arnold, A. (PI), Mikulsky, B. (Undergraduate Student) Sponsored Research, “*Determining the Mechanisms of Neuropathic Pain*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,300.00, Funded. (June 2018 – August 2018).
4. Arnold, A. (PI), Stepanski, M. (Undergraduate Student) Sponsored Research, “*Safety studies with MIDD0301 in vivo*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,750.00, Funded. (June 2018 – August 2018).
5. Arnold, A. (PI), Huber, A. (Undergraduate Student) Sponsored Research, “*Investigation of CNS effects of novel imidazobenzodiazepines*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,640.00, Funded. (June 2018 – August 2018).
6. Arnold, A. (PI), Schussman, M. (Undergraduate Student) Sponsored Research, “*Characterization of novel imidazobenzodiazepines in respect to CNS effects*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,640.00, Funded. (January 2018 – May 2018).

2017 (Total funding: \$11,800.00)

1. Arnold, A. (PI), Huber, A. (Undergraduate Student) Sponsored Research, “*Investigation of CNS effects of novel imidazobenzodiazepines*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,600.00, Funded. (June 2017 – August 2017).
2. Arnold, A. (PI), Gould, J. (Undergraduate Student) Sponsored Research, “*Synthesis of new pepsin inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,600.00, Funded. (June 2017 – August 2017).
3. Arnold, A. (PI), Ebben, A. (Undergraduate Student) Sponsored Research, “*Synthesis of calcitroic acid and its metabolic products*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,600.00, Funded. (June 2017 – August 2017).
4. Arnold, A. (PI), Ebben, A. (Undergraduate Student) Sponsored Research, “*Synthesis of calcitroic acid analogs*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2017 – May 2017).
5. Arnold, A. (PI), Senych, V. (Undergraduate Student) Sponsored Research, “*Cell-based analysis of calcitroic acid*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2017 – May 2017).

2016 (Total funding: \$8,700.00)

1. Arnold, A. (PI), Benjamin Hartzler (undergraduate student), Sponsored Research, “*Expression of GABA_AR subunits on stable cells using flow cytometry*” awarding organization is University of Wisconsin-Milwaukee, \$2,400.00, Funded. (September 2016 – December 2016).
2. Arnold, A. (PI), Senych, V. (Undergraduate Student) Sponsored Research, “*Synthesis of calcitriol and analogs*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,600.00, Funded. (June 2016 – August 2016).
3. Arnold, A. (PI), Radde, L. (Undergraduate Student) Sponsored Research, “*Development of new protease assays to detect novel pepsin inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,700.00, Funded. (June 2016 – August 2016).

2015 (Total funding: \$16,600.00)

1. Arnold, A. (PI), Stangl, C. (Undergraduate Student) Sponsored Research, “*Synthesis of new vitamin D receptor–SRC2 inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (September 2015 – December 2015).
2. Arnold, A. (PI), Scuncio, G. (Undergraduate Student) Sponsored Research, “*Development of new protease assays to detect novel pepsin inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,500.00, Funded. (September 2015 – December 2015).
3. Arnold, A. (PI), Stangl, C. (Undergraduate Student) Sponsored Research, “*Synthesis of new vitamin D receptor–SRC2 inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2015 – August 2015).
4. Arnold, A. (PI), Scuncio, G. (Undergraduate Student) Sponsored Research, “*Development of new protease assays to detect novel pepsin inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$1,600.00, Funded. (June 2015 – August 2015).
5. Arnold, A. (PI), Sanchez, L. (Undergraduate Student) Sponsored Research, “*The Synthesis of metabolic lithocholic acid derivatives and evaluation of their Vitamin D Receptor binding*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (January 2015 – May 2015).
6. Arnold, A. (PI), Goetz, C. (Undergraduate Student) Sponsored Research, “*A high throughput assay to identify novel therapeutics for laryngopharyngeal reflux disease (LPRD)*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (January 2015 – May 2015).
7. Arnold, A. (PI), Scuncio, G. (Undergraduate Student) Sponsored Research, “*Development of new protease assays to detect novel pepsin inhibitors.*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (January 2015 – May 2015).

2014 (Total funding: \$23,600.00)

1. Arnold, A. (PI), Sanchez, L. (Undergraduate Student) Sponsored Research “*Synthesis of VDR-coregulator Inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (September 2014 – December 2014).
2. Arnold, A. (PI), Preston J. (Undergraduate Student) Sponsored Research, “*Development of a stable cell line for nuclear receptor research*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (May 2014 – August 2014).
3. Arnold, A. (PI), Chris Goetz (Undergraduate Student) Sponsored Research, “*Identification of novel therapeutics for laryngopharyngeal reflux disease (LPRD)*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (May 2014 – August 2014).
4. Arnold, A. (PI), Skylar Gabel-Eissens (Undergraduate Student) Sponsored Research, “*Synthesis of VDR-Coregulator inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Whitewater \$3,600.00, Funded. (May 2014 – August 2014).
5. Arnold, A. (PI), Sanchez, L. (Undergraduate Student) Sponsored Research, “*Synthesis of VDR-coregulator Inhibitors*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (May 2014 – August 2014).
6. Arnold, A. (PI), Preston J. (Undergraduate Student) Sponsored Research, “*Sequence Verification of Nuclear Receptor Plasmids for Ligand-mediated Transcription Assays*”, sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2014 – May 2014).

7. Arnold, A. (PI), Bogart J. (Undergraduate Student) Sponsored Research, "*Synthesis and characterization of VDR-coregulator inhibitors*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2014 – May 2014).
8. Arnold, A. (PI), Goy R. (Undergraduate Student) Sponsored Research, "*Expression and Purification of the ER receptor to validate vitamin D receptor coregulator binding inhibitors*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2014 – May 2014).
9. Arnold, A. (PI), Sanchez, L. (Undergraduate Student) Sponsored Research, "*Synthesis of VDR-coregulator Inhibitors*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2014 – May 2014).

2013 (Total funding: \$17,000.00)

1. Arnold, A. (PI), Preston J. (Undergraduate Student) Sponsored Research, "*Gene Sequencing of Nuclear Receptors in pBind Plasmids*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (September 2013 – December 2013).
2. Arnold, A. (PI), Bogart J. (Undergraduate Student) Sponsored Research, "*Synthesis of VDR-coactivator inhibitors based on the GW0742 scaffold*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (September 2013 – December 2013).
3. Arnold, A. (PI), Goy R. (Undergraduate Student) Sponsored Research, "*Expression and Purification of the ER receptor to validate vitamin D receptor coregulator binding inhibitors*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (September 2013 – December 2013).
4. Arnold, A. (PI), Preston J. (Undergraduate Student) Sponsored Research, "*Sequencing of nuclear receptor vectors to establish a plasmid data base*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2013 – August 2013).
5. Arnold, A. (PI), Bogart J. (Undergraduate Student) Sponsored Research, "*Synthesis of VDR-coactivator inhibitors based on the GW0742 scaffold*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2013 – August 2013).
6. Arnold, A. (PI), Goy R. (Undergraduate Student) Sponsored Research, "*Expression and purification of RXR protein*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$3,000.00, Funded. (June 2013 – August 2013).
7. Arnold, A. (PI), Nassif N. (Undergraduate Student) Sponsored Research, "*Evaluation of novel small molecule modulators of nuclear receptor mediated transcription*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (January 2013 - May 2013).

2012 (Total funding: \$4,000.00)

1. Arnold, A. (PI), Goy R. (Undergraduate Student) Sponsored Research, "*Expression and purification of RXR protein*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (June 2012 - August 2012).
2. Arnold, A. (PI), Temmer J. (Undergraduate Student) Sponsored Research, "*Synthesis of a fluorescent probe to identify promiscuous inhibitors*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (June 2012 - August 2012).

2011 (Total funding: \$4,000.00)

1. Arnold, A. (PI), Yuan N. (Undergraduate Student) Sponsored Research, "*Development of an automated patch-clamp assay for GABA_A receptor subtype-selective modulators*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (July 2011 – August 2011).
2. Arnold, A. (PI), Yuan N. (Undergraduate Student) Sponsored Research, "*An automated subtype-selective GABA_A receptor patch-clamp assay using transient transfected HEK293T cells*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (February 2011 - May 2011).

2010 (Total funding: \$2,000.00)

1. Arnold, A. (PI), Yuan N. (Undergraduate Student) Sponsored Research, "*Binding Studies on Vitamin D Receptor—Coregulator Binding Inhibitors*", sponsored by Office of Undergraduate Research, awarding organization is University of Wisconsin-Milwaukee, \$2,000.00, Funded. (May 2010 - August 2010).