

CURRICULUM VITAE

Western Michigan University • Chemistry Department
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Kelly A. Teske, PhD

EDUCATION

Ph.D., Organic (Medicinal) Chemistry, August 2010- August 2015

University of Wisconsin- Milwaukee, WI

Dissertation: *Part 1. The Development of Non-Secosteroidal Vitamin D Receptor Modulators and Part 2. The Development of a Universal GTPase Assay*

Principal Investigator: Prof. Alexander (Leggy) Arnold

B.S., Chemistry and Biochemistry & Molecular Biology,

August 2006-May 2010

Illinois State University, Normal, IL

Research: *The Reaction of Gold (I) and Gold (III) Cyanide with Cysteine Hydrochloride*

Principal Investigator: Prof. Frank C. Shaw, III

PROFESSIONAL EXPERIENCE

Assistant Professor- Chemistry Department

August 2018- current

Western Michigan University- Kalamazoo, MI

Research disciplines: Medicinal Chemistry, Biochemistry, Organic Chemistry, and Drug Discovery

Research description: Research focuses on the development of potent and selective small molecule modulators that of known oncogenic targets that include microRNA, eIF4E/eIF4G interaction, and nuclear receptors. Research is interdisciplinary and applies organic synthesis, biochemistry, and molecular biology to drug discovery.

Adjunct Professor- Chemistry Department

August-December 2017

University of Connecticut- Storrs, CT

General Chemistry

Postdoctoral Researcher in Medicinal Chemistry,

November 2015- Current

University of Connecticut- Storrs, CT

Research description: Development of Hedgehog (Hh) Pathway Inhibitors for the Treatment of Medulloblastoma

Principal Investigator: Prof. M. Kyle Hadden

HONORS, AWARDS, AND FELLOWSHIPS

ACS Postdoc to Faculty Workshop 2017; Certificate of Completion Awarded at 254th National American Chemical Society Meeting in Washington D.C. (August 2017)

Student Travel Award; Chemistry and Biochemistry Graduate Student Council at the University of Wisconsin-Milwaukee (May 2015)

Dr. and Mrs. George Sosnovsky Award for Excellence in Graduate Research; University of Wisconsin-Milwaukee (April 2015)

Chancellor's Graduate Fellowship; University of Wisconsin- Milwaukee (2010-2014)

MEDI-Chem Travel Award; National American Chemical Society MEDI- Chem Division (August 2014)

Mentoring Travel Award; Awarded by University of Wisconsin- Milwaukee New Graduate Student Mentor Program (August 2014)

Graduate School Research Poster Award; University of Wisconsin- Milwaukee (April 2014)

Graduate Student Travel Award; Graduate School at the University of Wisconsin – Milwaukee (April 2014)

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Student Travel Award Milwaukee, WI section of the American Chemical Society (*April 2013*)

Graduate Student Travel Award; Graduate School at the University of Wisconsin – Milwaukee (*April 2013*)

Mentoring Travel Award; University of Wisconsin- Milwaukee New Graduate Student Mentor Program (*April 2013*)

The Gloria Moczynski Student Teacher Award; University of Wisconsin Milwaukee Department of Chemistry and Biochemistry (*April 2013*)

Student Travel Award; Graduate School at the University of Wisconsin – Milwaukee (*April 2012*)

The American Chemical Society Undergraduate Award in Inorganic Chemistry; The American Chemical Society nominated by Illinois State University Department of Chemistry and Biochemistry (*May 2010*)

The Shulman Scholarship for Outstanding Achievements in Chemistry; Illinois State University Department of Chemistry and Biochemistry (*August 2009*)

AFFILIATIONS

Kalamazoo American Chemical Society- Local Division	2018-Present
Interim Secretary	
American Chemical Society- Med. Chem. Division	2010- Present
Graduate Student Council	June 2014-May 2015
Department of Chemistry and Biochemistry, University of Wisconsin-Milwaukee	
New Graduate Student Mentor	December 2012-May 2014
Department of Chemistry and Biochemistry, University of Wisconsin- Milwaukee	
Society for Applied Spectroscopy (SAS)	August 2012-May 2013
Secretary, University of Wisconsin-Milwaukee Student Chapter	

PUBLICATIONS

Independent Publications

1. Van Meter, E. N.*; Onyango, J.*; Teske, K. A., A Review of Currently Identified Small Molecule Modulators of microRNA Function. *In Progress, Anticipated Submission Sept 2019* (*Shared authorship)

Postdoctoral Publications

2. Poe, M. M.; Agabiti, S. S.; Liu, C.; Li, V.; Teske, K. A.; Hsiao, C.-H. C.; Wiemer, A. J., Probing the ligand binding pocket of BTN3A1. *J. Med. Chem.* **2019**, 62, 6814-6823.
3. Pace, J. R.; Teske, K. A.; Chau, L. Q.; Dash, R. C.; Zaino, A. M.; Wechsler-Reya, R. J.; Hadden, M. K., Structure-Activity Relationships for Itraconazole-Based Triazolone Analogues as Hedgehog Pathway Inhibitor. *J. Med. Chem.* **2019**, 62, 3873-3885.
4. Teske, K. A.; Dash, R. C.; Morel, S. R.; Chau, L. Q.; Wechsler-Reya, R. J.; Hadden, M. K. Development of Posaconazole- Based Analogues as Hedgehog Signaling Pathway Inhibitors. *Eur. J. Med. Chem.* **2019**, 163, 320-332.
5. Teske, K. A.; Hadden, M. K., Methyllysine Binding Domains: Structural Insight and Small Molecule Probe Development. *Eur. J. Med. Chem.* **2017**, 136, 14-35.

Graduate Publications

6. Teske, K. A.; Bogart, J. W.; Arnold, L. A. Novel VDR Antagonist Based on the GW9742 Scaffold. *Bioorg. Med. Chem. Lett.*, **2018**, 28, 351-354.
7. Teske, K. A.; Rai, G.; Nandhikonda, P.; Sidhu, Preetpal S. S.; Feleke, B.; Simeonov, A.; Yasgar, A.; Jadjav, A.; Maloney, D.; Arnold, L. A., A Parallel Chemistry Approach to Identify Novel Nuclear Receptor Ligands Based on GW0742 Scaffold. *ACS Comb. Sci.*, **2017**, 19, 646-656.
8. Wang, Y.; Fan, H.; Balakrishnan, K.; Lin, Z.; Cao, S.; Chen, W.; Fan, Y.; Guthrie, Q.; Sun, H.; Teske, K. A.; Gandhi, V.; Arnold, L. A.; Peng, Peng, X., Hydrogen Peroxide Activated Quinone Methide Precursors with Enhanced DNA Cross-Linking Capability and Cytotoxicity Towards Cancer Cells. *Eur. J. Med. Chem.* **2017**, 133, 197-207.
9. Poe, M. M.; Methuku, K. R.; Li, G.; Verma, A.; Teske, K. A.; Stafford, D. C.; Arnold, L. A.; Cramer, J. W.; Jones, T. M.; Cerne, R.; Krambis, M. J.; Witkin, J. M.; Jambrina, E.; Rehman, S.; Ernst, M.; Cook, J.

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- M.; Schkeryantz, J. M., Synthesis and Characterization of a Novel GABA_A Receptor Ligand that Combines Outstanding Metabolic Stability, Pharmacokinetics and Anxiolytic Activity. *J. Med. Chem.* **2016**, 23, 10800-10806
10. Teske, K. A.; Bogart, J. W.; Sanchez, L. M.; Yu, O. B.; Preston, J. V.; Cook, J. M.; Silvaggi, N. R.; Bikle, D. D.; Arnold, L. A., Synthesis and Evaluation of Vitamin D Receptor-mediated Activities of Cholesterol and Vitamin D Metabolites. *Eur. J. Med. Chem.* **2016**, 109, 238-46
 11. Teske, K. A.; Yu, O.; Arnold, L. A., Inhibitors of the Vitamin D Receptor-Coregulator Interaction. In *Vitamin D Hormone*, **2016**; Vol. 100, pp 45-82.
 12. Guthrie, M. L.; Sidhu, P. S.; Hill, E. K.; Horan, T. C.; Nandhikonda, P.; Teske, K. A.; Yuan, N. Y.; Sidorko, M.; Kodali, R.; Cook, J. M.; Han, L.; Silvaggi, N. R.; Bikle, D. D.; Moore, R. G.; Singh, R. S.; Arnold, L. A., Anti-tumor Activity of 3-Indoylemethanamines 31B and PS121912. *Anticancer Research* **2015**, 35.
 13. Sidhu, P. S.; Teske, K.; Feleke, B.; Yuan, N. Y.; Guthrie, M. L.; Fernstrum, G. B.; Vyas, N. D.; Han, L.; Preston, J.; Bogart, J. W.; Silvaggi, N. R.; Cook, J. M.; Singh, R. K.; Bikle, D. D.; Arnold, L. A., Anticancer Activity of VDR-Coregulator Inhibitor PS121912. *Cancer Chemother Pharmacol* **2014**.
 14. Teske, K.; Nandhikonda, P.; Bogart, J. W.; Feleke, B.; Sidhu, P.; Yuan, N. Y.; Preston, J.; Goy, R.; Han, L.; Silvaggi, N. R.; Singh, R. K.; Bikle, D. D.; Cook, J. M.; Arnold, L. A., Identification of VDR Antagonists Among Nuclear Receptor Ligands Using Virtual Screening. *Nuclear Receptor Research* **2014**, 1, 1-8.
 15. Teske, K.; Nandhikonda, P.; Bogart, J. W.; Feleke, B.; Sidhu, P.; Yuan, N.; Preston, J.; Goy, R.; Arnold, L. A., Modulation of Transcription Mediated by the Vitamin D Receptor and the Peroxisome Proliferator-Activated Receptor δ . *Biomolecular Research & Therapeutics* **2014**, 3 (1).
 16. Sidhu, P. S.; Nassif, N.; McCallum, M. M.; Teske, K.; Feleke, B. D.; Yuan, N. Y.; Nandhikonda, P.; Cook, J. M.; Singh, R. K.; Bikle, D. D.; Arnold, L. A., Development of Novel Vitamin D Receptor-Coactivator Inhibitors. *ACS Medicinal Chemistry Letters* **2014**, 5 (2), 199-204.
 17. Nandhikonda, P.; Yasgar, A.; Baranowski, A.; Sidhu, P. S.; McCallum, M. M.; Pawlak, A. J.; Teske, K.; Feleke, B.; Yuan, N. Y.; Kevin, C.; Bikle, D. D.; Ayers, S. D.; Webb, P.; Rai, G.; Simeonov, A.; Jadhav, A.; Maloney, D.; Arnold, L. A., Peroxisome Proliferation- Activated Receptor δ Agonist GW0742 Interacts Weakly with Multiple Nuclear Receptors, Including the Vitamin D Receptor. *Biochemistry* **2013**, 52, 4193-4203.

Reviewing

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| 1. SLAS Discovery | May 2017 |
| 2. European Journal of Medicinal Chemistry | May 2019 |
| 3. Burger's Medicinal Chemistry (Wiley), book chapter | August 2019 |

RESEARCH SUPPORT

Internal Grants

Active

1. Faculty Research and Creative Activities Award (FRACAA) July 1st, 2019-June 30th, 2020
Title: "The Development of Pre-miRNA Targeted Small Molecules for the Treatment of Colorectal Cancer"

External Grants

Pending

2. Beckman Young Investigator- *Submitted Letter of Intent* August 5th, 2019
Title: "An Approach to Identifying a Small Molecule Probe to Validate the Oncogenic Role of Primary microRNA-18a to Inform Drug Development"

PRESENTATIONS

Poster Presentations

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Western Michigan University

1. Raines, Yanari; Teske, K. A., Synthesis and Evaluation of 2,4-Diphenylquinazoline Analogues as Upregulators of microRNA. *Summer 2019 Kalamazoo College Mini Poster Session*, Kalamazoo College, **2019**

Prior to Western Michigan University

2. Teske, K. A.; Pace, J. R.; Dash, D.C.; Hadden, M. K. Development of Azole Antifungal Analogues to Treat Cancers Dependent on Hedgehog Signaling. *254th American Chemical Society National Conference*, Washington, D.C., **2017**
3. Teske, K. A.; Bogart, J. W.; Sanchez, L.; Arnold, L. A. Synthesis of Natural VDR Ligand Metabolites and Their Interaction with the Vitamin D Receptor. *250th American Chemical Society National Conference*, Boston, MA, **2015**
4. Teske, K. A.; Bogart, J. W.; Sanchez, L.; Arnold, L. A., Identification of New Vitamin D Receptor-Coregulator Inhibitors Among Nuclear Receptor Ligands, *248th American Chemical Society National Conference*, San Francisco, **2014**
5. Teske, K. A.; Yasgar, A; Bantukallu, G.; Bogart, J.; Simeonov, A.; Jadhav, A.; Maloney, D.; Arnold, L. A., Further Investigation of the First Non-Secosteroid Antagonist for the Vitamin D Receptor, *Awards Day*, University of Wisconsin- Milwaukee, **2014**
6. Teske, K. A.; Yasgar, A; Bantukallu, G.; Bogart, J.; Simeonov, A.; Jadhav, A.; Maloney, D.; Arnold, L. A., Further Investigation of the First Non-Secosteroid Antagonist for the Vitamin D Receptor, *The 4th Yao Yuan Biotech/Pharma International Symposium*, University of Illinois-Chicago, **2014**
7. Teske, K. A.; Yasgar, A; Bantukallu, G.; Bogart, J.; Simeonov, A.; Jadhav, A.; Maloney, D.; Nassif, N. D.; Arnold, L. A., Identification of the First Non-Secosteroid Antagonist for the Vitamin D Receptor, *Awards Day*, University of Wisconsin- Milwaukee, **2013**
8. Teske, K. A.; Yasgar, A; Bantukallu, G.; Bogart, J.; Simeonov, A.; Jadhav, A.; Maloney, D.; Nassif, N. D.; Arnold, L. A., Identification of the First Non-Secosteroid Antagonist for the Vitamin D Receptor, *245th American Chemical Society National Conference*, New Orleans, **2013**
9. Teske, K. A.; Zivkovic, A.; Arnold, L.A., Rational Development of Reversible Inhibitors of the Vitamin D Receptor-Coregulator Interactions, *Awards Day*, University of Wisconsin- Milwaukee, **2012**
10. Teske, K. A.; Zivkovic, A.; Arnold, L.A., Rational Development of Reversible Inhibitors of the Vitamin D Receptor-Coregulator Interactions, *243rd American Chemical Society National Conference*, San Diego, **2012**
11. Teske, K.; Webb, J. W.; and Shaw, III, C. F., Studies of Ligand Exchange and Oxidation-Reduction Reactions of Gold(I) and Gold(III) Cyanides with Cysteine, *2nd Annual Georgian Bay International Conference on Bioinorganic Chemistry (CanBic)*, **2009**

Oral Presentations

Western Michigan University:

1. Teske, K. A., Design of Small Molecule Modulators of Aberrant miRNA Function for the Treatment of Cancer, ChemClub Guest Speaker, **Oct. 2018**
2. Teske, K. A., Design of Small Molecule Modulators of Aberrant miRNA Function for the Treatment of Cancer, WMU Seminar Series, **Sept. 2018**

Prior to Western Michigan University:

3. Teske, K. A.; Bogart, J. W.; Sanchez, L.; Bantukallu, G.; Simeonov, A.; Jadhav, A.; Yasgar, A.; Maloney, D.; Arnold, L. A., Development of Selective Non-Secosteroid Vitamin D Receptor Inhibitors, *248th American Chemical Society National Conference*, San Francisco, CA, **2014**
 4. Teske, K.; Webb, J. W.; and Shaw, III, C. F., Studies of Ligand Exchange and Oxidation-Reduction Reactions of Gold(I) and Gold(III) Cyanides with Cysteine, *Undergraduate Students Awards Day*, Illinois State University, **2008**
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TEACHING EXPERIENCE

Assistant Professor	August 2018- current
Western Michigan University	
Biochemistry (CHEM 5500, 5510, 5540)	
Medicinal Chemistry (CHEM 5720)	
Adjunct Professor	August-December 2017
University of Connecticut	
General Chemistry (CHEM 1127)	
Guest Lecturer	September 2016
University of Connecticut	
Foundations in Bioorganic Chemistry (PHRX 3002), a first year pharmacy course	
Graduate Chemistry Teaching Assistant	August 2010- May 2014
University of Wisconsin-Milwaukee	
General Chemistry for Non-majors (100), engineering (105) and nursing (101), Introductory Biochemistry for nursing (103), Organic Chemistry for Majors and Pre-professional (344)	
Undergraduate Chemistry Teaching Assistant	January 2009- May 2010
Illinois State University	
General Chemistry (Majors and non-majors), Organic Chemistry, and Analytical Chemistry	

MENTORSHIP

Graduate Students:

- Frank Buranek, PhD Candidate 2019- current
Research: "Design of Small Molecule Inhibitors of the eIF4E/eIF4G Protein-Protein Interaction through Computational Modeling"
- Emile Van Meter, PhD Candidate 2018- current
Research: "Exploring Small Molecule Inhibition of hnRNP A1 Binding to primary microRNA-18a"
- Jackline Onyango, Masters Candidate 2018-current
Research: "Screening for Small Molecule Inhibitors of Preliminary microRNA-31 Processing"
Funding: COAS Graduate Research Assistantship Award (Summer II 2019, \$6884 stipend/tuition)

Undergraduate Students:

- John Getson Fall 2019-current
Research: "Synthesis of Small Molecule Inhibitors Targeting Aberrant microRNA-31 Function"
- Makenzie Kuhns Fall 2019-current
Research: "High-Throughput Screening for Identification of microRNA-31 Inhibitor"
- Madeline Hinkley, University of Michigan Undergraduate Visiting Researcher Summer 2019
Research: "Synthesis of 2,4-diphenyl-quinazoline analogues"
- Nick Sienkiewicz Spring 2019-current
Research: "Evaluation of microRNA-31 expression levels in lung and colon cancer cell lines"
Funding: OVPR Undergraduate Research Award and Creative Scholarship Excellence Award (Spring 2019, \$500 stipend)
- Josh Collingwood Spring 2019-Summer 2019
Research: "Synthesis of Small Molecule Inhibitors Targeting Aberrant microRNA-31 Function"
Funding: OVPR Undergraduate Research Award and Creative Scholarship Excellence Award (Spring 2019, \$500 stipend)

High School Students:

- Christian Saman, Kalamazoo Area Math and Science Center Fall 2019- current

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Research: "Exploring Small Molecule Inhibition of hnRNP A1 Binding to primary microRNA-18a (Working with Emile Van Meter)"

- Saad Ahsan Qureshi, Kalamazoo Area Math and Science Center Fall 2019- current
Research: "Exploring Small Molecule Inhibition of hnRNP A1 Binding to primary microRNA-18a (Working with Emile Van Meter)"
- Yanari Raines, Kalamazoo Central High School, ACS SEED Project Student Summer 2019
Research: "The Synthesis and Biological Evaluation of Global Enhancers of Downregulated microRNA"

Mentorship Prior to Western Michigan University:

- Shana Morel, University of Connecticut Undergraduate Researcher 2017-2018
Research: "Determining the Effects Azole Antifungal Inhibitors have on Hedgehog Signaling in Murine Basal Cell Carcinoma Cell Line, ASZ"
- Luis Sanchez, University of Wisconsin- Milwaukee Undergraduate Researcher 2014-2015
Research: "Development and Synthesis of Potential Non-Steroidal VDR-Coactivator Inhibitors"
- Surajadeen Omolabake, University of Wisconsin- Milwaukee Graduate TA Spring 2014
- Jon Bogart, University of Wisconsin- Milwaukee Undergraduate Researcher 2013-2014
Research: "The Synthesis and Evaluation of Potential Non-Steroidal VDR-Coactivator Inhibitors"
- Quint Owen, University of Wisconsin- Milwaukee Graduate TA Fall 2013
- Praveen Ghosh, University of Wisconsin- Milwaukee Undergraduate TA Spring 2013
- Nicholas Nassif, University of Wisconsin- Milwaukee Undergraduate Researcher 2012-2013
Research: "Expression and Purification of the Vitamin D Receptor Ligand Binding Domain for the Identification of Vitamin D Receptor-Coactivator Inhibitors"
- Rajwana Jahan, University of Wisconsin- Milwaukee Graduate TA Fall 2012
- Angela Zivkovic, University of Wisconsin- Milwaukee Undergraduate Researcher 2011-2012
Research: "Synthesis of Novel Non-secosteroidal Vitamin D Receptor Agonist"

COMMUNITY OUTREACH

Experiments with Woodstock Academy (Connecticut High School) June 2016 and June 2017

Description: As part of a biotechnology class, Woodstock Academy visited the Hadden lab and we taught them how to run biological assays.

Career Day at Schmid Elementary (Chicago Public School) May 2014

Description: I met with different grades (K- 5th grade) and encouraged students to pursue a career in science by performing a fun and slightly messy "food coloring and milk experiment" with them.

SAS Performed Experiments with Wisconsin Local High Schools September 2012

Description: Performed experiments at St. Thomas More High School and Kettle Moraine High School. Students used portable UV-vis instruments to determine which car was involved in a fictional hit and run. They were given unknown paint samples that each had their own unique UV trace. When compared to the paint left on the car in the crash they were able to identify which car was involved.

SERVICE

Thesis Committees

1. Temitope Nathan (PI: Dr. Ekk Sinn)
2. Dominic Millheim (PI: Dr. Elke Schoffers)
3. Kristi Tullis (PI: Dr. Megan Kowalske)
4. Roshan Javanshad (PI: Dr. Andre Ventre)

Assessment Committee (Summer 2019-current)

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Instruments and Space Committee (*Spring 2019-current*)

Seminar Committee (*Spring 2019-current*)

ChemClub Advisor (*Spring 2019-current*)

Kalamazoo American Chemical Society Interim Secretary (*February 2019-current*)