**Dana Ferraris, PhD, MBA**

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**Education**

**Johns Hopkins University, Carey Business School** **May 21, 2009**

Master of Business Administration

**Johns Hopkins University**  **May 25, 2000**

Ph.D. in Organic Chemistry, Advisor: Dr. Thomas Lectka

**Lafayette College**  **May 22, 1994**

Bachelor of Arts in Biochemistry

**Professional and Teaching Experience, McDaniel College**

Visiting Assistant Professor of Chemistry **September 2015- December 2016**

Associate Professor of Chemistry**December 2016-present**

Chair, Department of Chemistry **November 2017-present**

**Teaching**

* Prepare lecture materials, homework assignments, exams and laboratory experiments for CHE2217, CHE2218 (Organic Chemistry 1 & 2), CHE3205 (Chemical Literature), CHE3301 (Medicinal Chemistry) and CHE4493 (Senior Seminar)
* Utilize online web learning WileyPLUS and ORION adaptive learning system for practice problems, skill building and homework assignments
* Facilitate group oriented problem solving sessions and group synthesis projects
* Organize tutors and tutoring sessions every night for General and Organic Chemistry
* Design relevant, safe laboratory experiments for Organic Chemistry 1 & 2 to coincide with lecture material

**Undergraduate Research Mentorship**

* Mentored eighteen undergraduate students towards completion of three medicinal chemistry projects and one food science project:
	+ *Design and Synthesis of Selective Inhibitors of mono-(ADP-ribosyl)transferases as Biological Probes –*
		- ***AY 2015-2016*** - Garrett Schey ’16, Matthew Meyers ’17, Evan Callahan ’17, Kristen Upton ’18, Jacob Holechek ’18
		- ***AY 2016-2017*** - Robert Lease ’18, Ryan Grant ’18, Abby Keen ’18, Caitlin McCadden ’19
		- ***AY 2017-2018*** – Robert Lease ’18, Kristen Upton ‘18
		- ***AY 2018-2019*** – Megan Quattrone ’19, Kevin Webster ’19, Kathalyn Urquizo ‘19
	+ *Synthesis of and Evaluation of Dimeric Naphthoquinones as Therapeutics Against Acute Myeloid Leukemia Cells* –
		- ***AY 2015*-2016** - Phuc Truong ’18,
		- ***AY 2016*-2017** - Olivia Kipe ’17, Vi Lam ’17, Riley Palmer ’18, Eli Williams ‘19
		- ***AY 2017-2018*** – Thao Tran ‘18
		- ***AY 2018-2019*** – Kristopher Mason ‘19
	+ *Design and Synthesis of LpxC Inhibitors as Potential Antibiotics against Gram-negative Bacterial Infections*
		- ***AY 2018-2019*** – Randy Hilleary ’20, Katie Holland ’20, Emma Seipp ’20, Brandon Busick ‘20
	+ *Qualitative Analysis of the Concentration of Caffeine using Gas Chromatography**–*
		- ***AY 2016-2017*** *-* Tazhae Williams ‘17
* Established research collaborations with ten groups around the globe including University of Maryland Cancer Center (Dr. Ashkan Emadi and Dr. Rena Lapidus), Karolinska Institutet in Sweden (Dr. Herwig Schüler), University of Iowa Medicine (Dr. Anthony Fehr); JHU School of Public Health (Dr. Anthony Leung); Centre National de la Recherche scientifique, France (Dr. Katia Zanier), University of Turku Institute of Biomedicine, Finland (Dr. Arto Pulliainen), Harvard Medical School (Dr. David Sinclair), University of Manchester, England (Dr. Adam Hurlstone), University of Debrecen, Hungary (Dr. Laszlo Virag), Pennsylvania State University (Dr. Claudia Nicolae)

**Scientific Conference Presentations as Undergraduate Mentor**

\* **McDaniel College Students**

*These poster presentations were given at local and national meetings. The first three and #10 were presented at a local undergraduate poster symposium and each one won either a first or second place prize in the chemical sciences division. Posters #4-9 were presented at the American Chemical Society national meetings. The attendance at these two meetings was in excess of 13,000 scientists and the poster sessions regularly had over 500 attendees.*

1. Holland, K.\*; Hilleary, R.\*; Ferraris, D. “Design and Synthesis of LpxC Inhibitors as Potential Antibiotics against Gram-negative Bacterial Infections” **October 20th, 2019,** 21st Undergraduate Research Symposium in the Chemical and Biological Sciences, UMBC, MD, Poster.
2. Mason, K.\*; Tran, T.\*; Ferraris, D. “Synthetic Optimization of MCD-66, a Promising Therapeutic for the Treatment of Acute Myeloid Leukemia” **October 20th, 2019,** 21st Undergraduate Research Symposium in the Chemical and Biological Sciences, UMBC, MD, Poster.
3. Quattrone, M.; Webster, K.; Holechek, J.; Thorsell, A.-G.; Karlberg, T.; Schuler, H.; Ferraris, D. “Design, Synthesis and Evaluation of Selective Inhibitors of the Mono-(ADP-ribosyl)transferase, PARP10” **October 20th, 2019,** 21st Undergraduate Research Symposium in the Chemical and Biological Sciences, UMBC, MD, Poster.
4. McCadden, C.\*; Grant, R.\*; Thorsell, A.-G.; Holechek, J.\*; Lease, R.\*; Karlberg, T.; Schuler, H.; **Ferraris, D.** “Design, synthesis and evaluation of selective inhibitors of mono-(ADP-ribosyl)transferase, PARP10” **March 18, 2018**, MEDI 127, 255th American Chemical Society National Meeting, New Orleans, LA.
5. Upton, K.\*; Thorsell, A.-G.; Karlberg, T.; Meyers, M.\*; Holechek, J.\*; Lease, R.\*; Schuler, H.; **Ferraris, D.** “Design, Synthesis and evaluation of PARP14 inhibitors as biological probes for target validation” **March 18, 2018**, MEDI 128, 255th American Chemical Society National Meeting, New Orleans, LA.
6. Williams, E.\*; Palmer, R.\*; Carter-Cooper, B.A.; Dash, S.; Truong, P.\*; Lapidus, R.; Emadi, A.; **Ferraris, D.** “Rational design and synthesis of potent and aqueous soluble bis-amino alcohol dimeric naphthoquinones with activity against acute myeloid leukemia cells” March 18, 2018, MEDI 129, 255th American Chemical Society National Meeting, New Orleans, LA.
7. Truong, P.\*; Kipe, O.\*; Lam, V.\*; Carter-Cooper, B. A.; Dash, S.; Lapidus, R. G.; Emadi, A.; **Ferraris, D.** “Design, synthesis, and anti-neoplastic evaluation of dimeric amino-naphthoquinones against acute myeloid leukemia (AML) cells”, **August 21, 2017,** MEDI 74, 254th American Chemical Society National Meeting, Washington, DC.
8. Holechek, J.\*; Lease, R.\*; Thorsell, A.-G.; Grant, R.\*; Keen, A.\*; Karlberg, T.; Schüler, H.; **Ferraris, D.** “Design, synthesis, and evaluation of potent and selective inhibitors of mono-(ADP-ribosyl)transferases, PARP10 and PARP14”, **August 21, 2017,** MEDI 51, 254th American Chemical Society National Meeting, Washington, DC.
9. Meyers, M.\*; Upton, K.\*; Thorsell, A.-G.; Schuler, H.; **Ferraris, D.** “Design, synthesis and evaluation of potent inhibitors of PARP-14/ARTD8, a mono-ADP-ribosyltransferase”, **April 3, 2017,** MEDI 473, 253rd American Chemical Society National Meeting, San Francisco, California.
10. Holechek, J.\*; Callahan, E.\*; Thorsell, A.-G.; Karlberg, T.; Schuler, H.; **Ferraris, D.** “Design, synthesis and evaluation of selective inhibitors of the mono(ADP-ribosyl) transferase, PARP-14” **October 27, 2016**, 19th Undergraduate Research Symposium in the Chemical and Biological Sciences, UMBC, MD, Poster.

*The oral presentations #11 and 12 were given to accepted students and potential honors students to showcase research activities in the Chemistry Department. Oral presentation #13 was presented to the board of trustees to emphasize the need and value of the McDaniel Summer Faculty-Student Mentorship Grants.*

1. Upton, K.\*; Holechek, J.\*; **Ferraris, D. March 6, 2017** “Cancer Research in the Chemistry Department at McDaniel College” Accepted Student Visitation, McDaniel College, Westminster, MD, Talk.
2. Upton, K.\*; Holechek, J.\*; **Ferraris, D. February 22, 2017** “Cancer Research in the Chemistry Department at McDaniel College” Honors Student Visitation, McDaniel College, Westminster, MD, Talk.
3. Callahan, E.\*; Holechek, J.\*; Truong, P.\*; Ferraris, D. **October 14, 2016** “Cancer Research in the Chemistry Department at McDaniel College” Board of Trustees Retreat, McDaniel College, Westminster, MD, Talk.

*The poster presentations below were presented internally to parents and families during parent’s weekend. They showcase the research that was conducted under the McDaniel Summer Faculty-Student Mentorship Grants.*

1. McCadden, C.; Grant, R.; Thorsell, A.-G., Lease, R.; Holechek, J., Karlberg, T.; Schuler, H.; **Ferraris, D.** “Design, synthesis, and evaluation of potent and selective inhibitors of mono-(ADP-ribosyl)transferases, PARP10 and PARP14” **October 21, 2017**, Student-Faculty Summer Research Reception, McDaniel College, Westminster, MD, Poster.
2. Williams, E.; Palmer, R.; Truong, P.; Carter-Cooper, B.; Dash, S.; Lapidus, R.; Emadi, A.; **Ferraris, D.** “Rational Design and Synthesis of Potent and Aqueous Soluble Bis-amino Naphthoquinones with Activity Against Acute Myeloid Leukemia Cells” **October 21, 2017**, Student-Faculty Summer Research Reception, McDaniel College, Westminster, MD, Poster.
3. Holechek, J.\*; Callahan, E.\*; Thorsell, A.-G.; Karlberg, T.; Schuler, H.; **Ferraris, D.** **September 25, 2016** “Design, Synthesis and Evaluation of Specific Inhibitors as Biological Probes of mono-(ADP-ribosyl)Transferases”, Student-Faculty Summer Research Reception, McDaniel College, Westminster, MD, Poster.
4. Truong, P.\*; Dash, S.; Lapidus, R.; Emadi, A.; **Ferraris, D.** **September 25, 2016** “Design, Synthesis and Evaluation of Dimeric Naphthoquinones as Therapeutic Agents Against Acute Myeloid Leukemia”, Student-Faculty Summer Research Reception, McDaniel College, Westminster, MD, Poster.

**College Service/Student Involvement**

* Received the Charles A. Boehlke Jr. Engaged Faculty Fellows Award **2018-present**
	+ Award presented to five faculty members who have demonstrated exceptional mentoring
* Received the Nora Roberts Award for Community Outreach **2016-2017**
	+ Established a High School Science Outreach Program with local area high schools
	+ Gave presentations focused on the challenges of becoming a science major in college to AP science students from 8 local area high schools and the Carroll County Career and Technology Center
	+ Mentored 21 McDaniel science majors to be presenters, facilitators and resources for AP high school science students: Haley Jacobs ’17, Bryan Ruygrok ’17, Olivia Kipe ’17, Meg Rosario ’17, Michelle Mahmood ’17, Amy Watcher ’18, Tommy Schoolman ’18, Jasmine Smith ’18, Jacob Holechek ’18, Robert Lease ‘18, Ornella Ngameni ’18, Kristen Upton ’18, Abby Keen ’18, Phuc Truong ’18, Elijah Williams ’19, Caitlin McCadden ’19, Eric Von Bergen ’20, Randy Hilleary ’20, Katie Holland ’20, Alena Villanueva ’21 and Matt Ulrick ‘21
* Faculty Mentor for McDaniel Women’s Soccer team **2016-present**
	+ Provide informal academic advising focused on time management and career planning
	+ Provide team members with research opportunities, internships and community outreach experiences
	+ Work with coaching staff to organize team breakfasts for home games and care packages for road games
	+ Attend home games
* Member Gamma Sigma Epsilon Chemistry Honors Society **2016-present**
	+ Helped organize events and speakers relevant to chemistry majors

**Professional and Teaching Experience, Stevenson University**

Visiting Assistant Professor of Chemistry  **AY2014-2015**

**Teaching**

* CHEM 116 (General Chemistry) Prepared lecture materials, homework assignments and exams for General Chemistry, Utilized online web learning by Cengage Learning Solutions
* CHEM 210/L (Organic Chemistry/Organic Chemistry Laboratory) online web learning WILEYPLUS for practice problems, skill building and homework assignments, demonstrated and instructed students on the classical techniques necessary for an organic chemistry laboratory, namely reaction set-up, reaction workup, purification, and characterization of organic compounds

**Undergraduate Research Mentorship**

* Mentored two undergraduate students towards completion of a medicinal chemistry project:
	+ *Design and Synthesis of Inhibitors for mono-(ADP-ribosyl) transferases –* Adrianna Lucente ’15 and Emily Wolf ‘17

**Scientific Conference Presentations as Undergraduate Mentor, Stevenson University**

1. Lucente, A.; Wolf, E.; **Ferraris, D.** **2015**, “Design, Synthesis and Evaluation of Specific Inhibitors of Mono(ADP-ribosyl) Transferases as Biological Probes”, *Stevenson University School of Sciences Poster Session,* Stevenson, MD, Poster.
2. Wolf, E.; Lucente, A.; **Ferraris, D.** **2015**, “Design, Synthesis and Evaluation of Specific Inhibitors of mono(ADP-ribosyl) Transferases as Biological Probes using (*Z*)-4-(3-caramoylphenylamino)-4-oxobut-2-enoic acid as a lead compound” *Stevenson University School of Sciences Poster Session,* Stevenson University, Stevenson, MD, Poster.

**Professional Experience, Pharmaceutical/Drug Discovery**

**Johns Hopkins University Brain Science Institute Drug Discovery Program 2009-2014**

Principal Scientist

* **Managed Collaborations** with pharmaceutical companies, academic labs and contract service providers:
* Reviewed internal grants to fund JHU academic labs with the goal of translating exploratory research into validated drug discovery projects
* Evaluated over 60 projects at JHU and initiated collaborations with 6 academic groups for translational research
* Worked with a team of scientists and business development personnel to establish a high throughput screening (HTS) collaboration between JHU and Eisai Pharmaceuticals
* Regularly interacted with Eisai to advance and validate targets for HTS
* Crafted research budget and plan to obtain funding from corporate sources to advance a drug discovery project from validation through lead optimization
* Managed interactions with contract research organizations to obtain over 20 probe compounds to advance exploratory projects from JHU academic labs
* **Managed Translational Drug Discovery Research Teams**:
* Managed medicinal chemistry teams to design and synthesize inhibitors from lead optimization through preclinical characterization for several drug discovery projects including: protein-protein interactions (Glutaminase), metalloproteases (GCPII), Kinases (DLK), and oxidases (DAAO)
* Interacted regularly across disciplines with biologists, computational chemists, pharmacologists, ADME experts, patent attorneys and office of business development
* Wrote research section for two funded RO1 grants: “D-Amino Acid Oxidase Inhibitors for the treatment of Schizophrenia” and “Glutamate Carboxypeptidase II (GCPII) inhibitors for the treatment of neuropathic pain”
* **Taught Graduate-Level Drug Discovery Classes**
* Presented graduate-level drug discovery lectures for multiple courses: “Case Studies in Drug Discovery”, “Introduction to Drug Discovery” and “Neurotherapeutics”

**Awards and Honors**

* Charles A. Boehlke Jr. Engaged Faculty Fellows Award, **2018**
* Scholarly Publications Award, McDaniel College, **2017**
* Nora Roberts Award for Community Outreach, McDaniel College, **AY 2016-2017**
* McDaniel College Summer Research Grant, **2016**: Evan Callahan ’17, Jacob Holechek ’18, Phuc Truong ’18; **2017**: Riley Palmer ’18, Ryan Grant ’18, Caitlin McCadden ’19, Eli Williams ’19; **2018**: Megan Quattrone ’19, Kevin Webster ’19, Kris Mason ’19, Katie Holland ’20, Randy Hilleary ’20
* McDaniel College Research and Creativity Grant, **2015-2016,** Garrett Schey ‘16, Matthew Meyers ’17, Vi Lam ’17, Kristen Upton ’18, Phuc Truong ’18, Caitlin McCadden ‘19
* Ernest M. Marks Award for excellence in chemical research, Johns Hopkins University, **1998**
* William Hart Award for excellence in undergraduate chemistry research, Lafayette College, **1994**
* Aaron O. Hoff Leadership Award, Lafayette College, **1994**
* President’s Cup for outstanding community service and philanthropy, Lafayette College, **1993**

**Professional Affiliation**

**American Chemical Society**

* + - **Member** **1994-present**
		- **Councilor**, Maryland section **2011-present**

Elected official of the American Chemical Society, representing the local section, responsible for voting on issues important to the ACS, primary liaison responsible for dissemination of information and services from the national offices to the local section

* + - **President,** Maryland Section of ACS **2019-present**

Organize regular events and programming for the local section, responsible for communication and dissemination of information, responsible for keeping a balanced budget of ~$50K per year, reporting activities to the national ACS

* **Associate Member,** Budget and Finance Committee **2019-present**

Responsible for receiving and reviewing requests for funding of new and unbudgeted items, recommending approval or disapproval of the requests, and suggesting and identifying sources of funds if the request is to be approved; responsible for recommending to the Board of Directors and Council, as appropriate, an order of priorities, including termination of programs, based upon determination of costs and effectiveness

* + - **Member**, Committee on Economic and Professional Affairs (CEPA)**2012-2018**

*CEPA Subcommittee Chairman – Events, volunteers and employee services*

Responsible for evaluating national career events, hiring career consultants, crafting salary surveys, monitoring and improving career services and researching current macroeconomic trends for employment of chemists

* + - **Remsen Award Chairman** **2010-present**

Responsible for soliciting nominations and managing the committee that selects the recipient of the Remsen award, the most prestigious chemistry award for the state of Maryland

**Publications as an undergraduate mentor**

**\*McDaniel College Students**

**Publications related to PARP (Poly ADP-Ribose Polymerase) inhibitors**

*These publications represent some of the first publications on the use of PARP10 and PARP14 inhibitors as biological probes. Research for publications #2 and #3 below was conducted at McDaniel College. The research team included five students, whose role was the synthesis of a series of molecules that served as tools to validate PARP 10 and PARP14 as a potentially exciting new drug discovery targets for cancer. The compounds that the research team made are some of the first inhibitors of this sub-family of enzymes and some of the most potent in the literature. One of these compounds was used in the first publication to validate the integral role of PARP10 in viral replication.*

1. “The coronavirus macrodomain is required to prevent PARP-mediated inhibition of virus replication and enhancement of IFN expression” Grunewald, M.; Chen, Y.; Kuny, C.; Maejima, T.; Lease, R.\*; **Ferraris, D**.; Aikawa, M.; Sullivan, C.; Perlman, S.; Fehr, A. **2019,** Accepted for publication *PLOS Pathogens*.
2. “Design, synthesis and evaluation of potent and selective inhibitors of mono-(ADP-ribosyl)transferases PARP10 and PARP14” Holechek, J.\*; Lease, R.\*; Thorsell, A.-G.; Karlberg, T.; McCadden, C.\*; Grant, R.\*; Callahan, E.\*; Schuler, H.; **Ferraris, D.** *Bioorg. Med. Chem. Lett.* **2018**, *28*, 2050-2054.
3. “Design and Synthesis of Potent Inhibitors of the mono-(ADP-ribosyl)transferase, PARP14” Upton, K.\*; Meyers, M.\*; Thorsell, A.-G.; Karlberg, T.; Holechek, J.\*; Lease, R.\*; Schey, G.\*; Wolf, E.; Lucente, A.; Schüler, H.; **Ferraris, D.** *Bioorg. Med. Chem. Lett.,* **2017,** *27,* 2907-2911*.*

**Publication related to Naphthoquinones and Acute Myeloid Leukemia**

*This publication describes a novel series of compounds that demonstrate potent activity against several acute myeloid leukemia (AML) cell lines. AML chemotherapy has not changed appreciably for almost 40 years. These compounds provide the basis for new drug discovery efforts for this debilitating disease. My lab is the primary source of intellectual property, design and synthesis of these compounds. The research team consisted of five students whose role was to synthesize molecules that improve the drug-like properties of the lead compound from reference 10. Some of the compounds that the team synthesized improved the solubility, toxicity and potency and were the subject of a provisional patent application filed in August 2017.*

1. “Rational Design, Synthesis and characterization of bis-amino dimeric naphthoquinones with improved solubility and potent activity against acute myeloid leukemia cells” **Ferraris, D.**; Truong, P.\*; Carter-Cooper, B. A.; Dash, S.; Kipe, O.\*; Lam, V.\*; Palmer, R.\*; Williams, E.\*; Mason, K.\*; Lapidus, R.; Emadi, A. To be submitted May 2019**.**
2. “Synthesis, Characterization and Anti-neoplastic Activity of Bis-aziridine Dimeric Naphthoquinone – a Novel Class of Compounds with Potent Activity Against Acute Myeloid Leukemia Cells” Carter-Cooper, B. A.; Fletcher, S.; **Ferraris, D.**; Choi, E. Y.; Kronfli, D.; Dash, S.; Truong, P.\*; Sausville, E. A.; Lapidus, R. G.; Emadi, A. *Bioorg. Med. Chem. Lett.* **2017**, *27*, 6-10.

**Invited Oral Presentations**

* Stevenson University, **October 2015**, Title: *The Evolving Role of Medicinal Chemists in Drug Discovery*
* Johns Hopkins Medical School, **June** **2013**, Title: *Drug Discovery at the Brain Science Institute: Glutamate Carboxypeptidase II as a therapeutic target*
* St. Johns University, **December 2012**, Title: *Poly(ADPribose)polymerases as Therapeutic Targets*
* Celgene Inc., **June 2012,** Title**:** *Poly(ADPribose)polymerases as Therapeutic Targets*
* Lafayette College, **September 2012**, Title: *Current Landscape of Drug Discovery Research: Challenges and Opportunities*
* Johns Hopkins University, **April 2009,** Title: *DAAO Inhibitors for the Treatment of Schizophrenia*
* 227th American Chemical Society National Meeting, **April 2004**, Title: *PARP-1 Inhibitors as Neuroprotective Agents*