

Gregory B. Dudley, Ph.D.

Primary professional appointments

National Science Foundation, Alexandria, VA

- Program Director, NSF Division of Chemistry 08/2024–present

West Virginia University, Morgantown, WV

- Eberly Family Distinguished Professor of Chemistry 07/2016–present
- Chair, C. Eugene Bennett Department of Chemistry 07/2016–06/2024

Florida State University, Tallahassee, FL

- Professor of Chemistry and Biochemistry 08/2015–07/2016
- Associate Department Chair 08/2012–07/2016
- Associate Professor of Organic Chemistry 08/2008–07/2015
 - Raymond Cottrell Family Professor 08/2008–07/2012
- Assistant Professor of Organic Chemistry 08/2002–07/2008

Education

Massachusetts Institute of Technology, Cambridge, MA

- Ph.D. in Organic Chemistry 09/1995–08/2000
Research Advisor: Professor Rick L. Danheiser
Dissertation: *A Total Synthesis of (-)-Ascochlorin*

Florida State University, Tallahassee, FL

- B.A. degree in Chemistry, with Honors - *magna cum laude* 08/1991–05/1995
Research Advisor: Professor Martin A. Schwartz

Selected professional development

University of California at Berkeley, CA

- Executive Leadership Academy 07/2024
Center for Studies in Higher Education, Goldman School of Public Policy

American Chemical Society, Washington D.C.

- Academic Leadership Training 02/2017
Cottrell Scholars Collaborative

Memorial Sloan-Kettering Cancer Center, New York, NY

- NIH Postdoctoral Fellow 10/2000–05/2002
Research Advisor: Professor Samuel J. Danishefsky

University of Kansas, Lawrence, KS

- NSF Research Experience for Undergraduates (REU) Program 06/1994–08/1994
Research Advisor: Professor Richard S. Givens

Selected synergistic activities

Program Director, NSF Division of Chemistry, 2024–present

Responsibilities include leadership and direction in the Chemical Mechanism, Function, and Properties (CMFP) program, Chemical Catalysis (CAT) program, and Chemical Synthesis (SYN) program as well as ad hoc assignments and community outreach. Program Directors oversee the NSF merit review process, interact with research principal investigators (PIs), coordinate proposal review, form and facilitate review panels, recommend funding decisions, and suggest new funding opportunities.

Department Chair: C. Eugene Bennett Department of Chemistry, 2016–2024

Responsible for management and leadership direction of the chemistry department in keeping with the mission and vision of WVU. Responsibilities include leading shared governance and strategic planning, personnel, recruiting and retention, curriculum and program development, research and scholarship, facilities, budget and fiscal management, fundraising, etc. Additional information on this experience and relevant accomplishments is provided on the following pages.

Science policy contributor, consultant, and expert witness, 2012–2024

Public sector work toward better science-based policies and practices. Consulted on >100 Federal drug cases and testified >40 times related to the regulatory challenges of emerging designer drugs; given lectures to conventions of attorneys; helped draft an *Amicus* [brief](#) for the US Supreme Court; worked with a non-profit organization and White House counsel on a [clemency](#) case; and provided policy recommendations and [testimony](#) for the US Sentencing Commission ([twice](#)).

Eberly Edge working group: Promoting Liberal Arts Education, 2023

Part of a small working group assembled to advocate for better recognition of the value of the liberal arts in promoting critical thinking, problem-solving, communication, and resiliency for long-term personal and professional success, and help develop a core curriculum for the College.

Eberly College Social Justice Think Tank, Founding Member, 2020–2022

One of the founding members of the Social Justice Think Tank, helping chart a course for the Eberly College in the broad and inclusive area of social justice. The focus of my two-year term was on best practices in faculty evaluations and promotion and tenure processes.

WVU Inclusive Hiring Initiative, Facilitator, 2020–2022

Facilitator for a Provost Office initiative, coordinated through the WVU ADVANCE Center, to promote equitable and inclusive hiring practices that lead to a stronger and more diverse faculty.

WVU Academic Innovation Summit, Facilitator, 2021

Facilitator for a Provost Office initiative, coordinated through the WVU Research Office, working with multidisciplinary teams from across campus on specific challenges facing rural Appalachia.

WVU ADVANCE Center, Change Agent Course 2020–2021

Course for faculty interested in equity-promoting transformative action within their units and the larger institution.

ACS DOC Executive Committee, Member-at-Large, 2019–2021

Nationally elected board member, with duties including strategic planning and coordination of American Chemical Society Division of Organic Chemistry activities.

FSU Associate Chair for Curriculum, 2012–2016

Responsible for curriculum design, teaching assignments, instructor supervision, course creation and approval, and other duties.

Selected leadership experiences and accomplishments

Shared governance

- Established shared governance in the unit; created robust policy, committee, and decision structures for maximum engagement with clear accountability
- Elevated the authority and agency of other unit leaders to promote shared governance and professional development and facilitate leadership succession planning
- Coordinated and led pandemic and WVU Academic Transformation responses

Strategic planning and vision

- Led annual faculty retreats for strategic planning, setting priorities, and coordinating service activities
- Drafted mission, vision, and values statements for the unit to guide strategic plans
- Created 10-year strategic plans for recruiting and retention, curriculum, and infrastructure

Teaching and assessment

- Orchestrated a multi-year assessment and accreditation plan
- Drafted clear policies on course assignments to promote equity in teaching workloads
- Invested in curriculum development and tracked multi-semester student success metrics
 - increased passing rates and learning gains in undergraduate courses
- Worked with College and Provost offices on enforcement of academic integrity policies

Research and scholarship

- Restructured graduate program with clearer structure and milestones
 - improved PhD recruiting, retention, and time to degree
- Created objective workload criteria for allocating research time to research-active faculty
 - doubled per capita external Federal grant awards from <0.5 to ≥ 1 awards per PI
- Maintained my research activity: published >30 papers, secured $>\$1M$ in Federal funding, and mentored >20 lab students while serving as Chair; PI on active NSF and NIH awards along with other sponsored research activity

Equity and inclusion

- Improved salary equity, including with significant salary enhancements for women
- Helped draft more inclusive and mission-aligned College criteria for faculty evaluation and promotion through work with the Eberly College Social Justice Think Tank
- Promoted equity and best practices in faculty recruiting through the Provost's Inclusive Hiring Initiative
- Implemented better practices for faculty recruiting in our unit to mitigate implicit biases
 - improved gender representation of tenure-track faculty from 14% to 37% women

Recruiting, retention, and professional development

- Advocated for faculty recruiting consistent with our vision and 10-year strategic plan
- Supported mentoring plans and immersive professional development workshops
- Created professional development funds and mechanisms for faculty to earn such funds
- Engaged purposefully to align workload assignments with goals, strengths, and interests
- Worked on multiple successful tenure and promotion cases
- Led leadership recruiting efforts for other units, identifying strong candidates for two units in the Eberly College and one in the Statler College (engineering)

Public engagement

- Supported and expanded public engagement activities including the [Bennett Careers for Chemists](#) program, [CESTA](#) (Community Engagement in Science Through Art) projects, Chemistry Children's Show and hands-on activities, and the WV Science Public Outreach Team ([SPOT](#))
- Engaged personally in public policy work at the intersection of chemistry and law
- Elected and served on a national executive committee for my professional society

Budget and fiscal administration

- Oversaw an annual unit operations budget of ca. \$2M plus personnel, a sponsored research portfolio of ca. \$10M, and a development portfolio of ca. \$7M
- Created a detailed budget plan, with line items for recruiting and retention, professional development, deferred maintenance, and other priorities
- Doubled unit discretionary revenue from internal incentive programs

Alumni relations and fundraising

- Established a department visiting committee
- Connected philanthropic interests with the vision and priorities of the unit
 - oversaw a partial renovation and update of teaching labs
 - secured new and recurring support for undergraduate research and scholarships
 - established and operationalized a plan for a shared research instrumentation suite

Selected classroom teaching

West Virginia University

- Introduction to Chemistry, CHEM 110
Course Description: preparatory chemistry course for aspiring science majors
- Advanced Organic Chemistry 2, CHEM 532
Course Description: graduate course focused on organic synthesis

Florida State University

- General Chemistry I, CHM 1045C
Course Description: introductory chemistry course for science majors
- Survey of Organic Chemistry, CHM 2200
Course Description: one-semester organic chemistry for allied health majors
- Organic Chemistry I, CHM 2210 (and Honors version)
Course Description: introductory undergraduate organic chemistry course
- Organic Chemistry II, CHM 2211 (and Honors version)
Course Description: second-semester undergraduate organic chemistry course
- Advanced Organic Chemistry — Reactions, CHM 5226
Course Description: graduate course on important organic methodology
- Synthetic Organic Chemistry, CHM 5250
Course Description: graduate course on organic reactions and synthesis
- Chemical Reactivity — Bioorthogonal Chemistry, CHM 5555
Course Description: graduate course on a cutting-edge topic in the chemical sciences

University of Ottawa

- Advanced Topics in Organic Chemistry: Alkynes, CHM 8304J
Course Description: graduate course on modern alkyne chemistry

Selected honors and awards

- Eberly Family Distinguished Professorship, West Virginia University, 2016–present
- Brodie Research Innovation Award, 2019–2020
- Raymond Cottrell Family Professor, 2008–2012
- FSU Developing Scholar Award, 2010
- FSU Undergraduate Teaching Award, 2010
- FSU Innovator Award, 2006, 2007, 2008, 2010, 2012
- NIH Postdoctoral Fellowship, 2000–2002
- Bristol-Myers Squibb Predoctoral Fellowship, 1999–2000
- Roche Award for Excellence in Organic Chemistry, 1999
- MIT Chemistry Outreach Fellowship, 1997

Selected publications ([comprehensive list here](#))

Selected Dudley Lab research publications:

- (100) Tavakoli, A.; Dudley, G. B. Regioselective [2+2+2] Alkyne Cyclotrimerizations to Hexasubstituted Benzenes: Syntheses of Fomajorin D and Fomajorin S. *J. Org. Chem.* **2024**, *89*, 6847–6852.
- (97) Wang, H.; Gaston, R., Jr.; Ahmed, K. T.; Dudley, G. B.; Barrios, A. M. Derivatives of the fungal natural product illudalic acid inhibit the activity of protein histidine phosphatase PHPT1. *ChemMedChem* **2023**, *18*, e202300187. [Very Important Paper \(VIP\)](#)
- (96) Tavakoli, A.; Dudley, G. B. Synthesis of coprinol and several alcyopterosin sesquiterpenes by regioselective [2 + 2 + 2] alkyne cyclotrimerization. *J. Org. Chem.* **2022**, *87*, 14909–14914. [Org. Chem. Highlights](#)
- (93) Tavakoli, A.; Stiegman, A. E.; Dudley, G. B. Mixed solvent system for selective microwave heating: accelerated thermal reaction kinetics of a microwave-transparent substrate. *Phys. Chem. Chem. Phys.* **2022**, *24*, 2794–2799. (PCCP HOT Article)
- (89) Fulo, H. F.; Shoeib, A.; Cabanlong, C. V.; Williams, A. H.; Zhan, C.-G.; Prather, P. L.; Dudley, G. B. Synthesis, molecular pharmacology, and structure-activity relationships of 3-(indanoyl)indoles as selective cannabinoid type 2 receptor antagonists. *J. Med. Chem.* **2021**, *64*, 6381–6396. Highlighted in [Synfacts 2021, 17, 0816](#)
- (86) Gaston, R., Jr.; Geldenhuys, W. J.; Dudley, G. B. Synthesis of illudinine from dimedone and identification of activity as a monoamine oxidase inhibitor. *J. Org. Chem.* **2020**, *85*, 13429–13437. (JOC [Featured Article](#))
- (85) Frasso, M. A.; Stiegman, A. E.; Dudley, G. B. Microwave-specific acceleration of a retro-Diels-Alder reaction. *Chem. Commun.* **2020**, *56*, 11247–11250. [Chemistry World feature](#)
- (64) Wright, A. K.; Batsomboon, P.; Dai, J.; Hung, I.; Zhou, H.-X.; Dudley, G. B.; Cross, T. A. Differential binding of rimantadine enantiomers to influenza A M2 proton channel. *J. Am. Chem. Soc.* **2016**, *138*, 1506–1509.
- (58) Rosana, M. R.; Hunt, J.; Ferrari, A.; [Southworth](#), T.; Tao, Y.; Stiegman, A. E.; Dudley, G. B. Microwave-Specific Acceleration of a Friedel–Crafts Reaction: Evidence for Selective Heating in Homogeneous Solution. *J. Org. Chem.* **2014**, *79*, 7437–7450.
Featured in [Chemical and Engineering News](#) and [Chemistry World](#)
- (54) Dudley, G. B.; Stiegman, A. E.; Rosana, M. R. Correspondence on microwave effects in organic synthesis. *Angew. Chem. Int. Ed.* **2013**, *52*, 7918–7923.
Featured in [Chemical and Engineering News](#)

- (52) Gold, B.; Dudley, G. B.; Alabugin, I. V. Moderating strain without sacrificing reactivity: Design of fast and tunable noncatalyzed alkyne-azide cycloadditions via stereoelectronically controlled transition state stabilization. *J. Am. Chem. Soc.* **2013**, *135*, 1558–1569.
- (45) Rosana, M. R.; Tao, Y.; Stiegman, A. E.; Dudley, G. B. On the rational design of microwave-actuated organic reactions. *Chem. Sci.* **2012**, *3*, 1240–1244.
Featured in [Chemical and Engineering News](#) and *Chemistry World* ([2012](#) and [2024](#))
- (29) Engel, D. A.; Dudley, G. B. The Meyer–Schuster rearrangement for the synthesis of α,β -unsaturated carbonyls. *Org. Biomol. Chem.* **2009**, *7*, 4149–4158. (Perspective Article)
- (26) Tummatorn, J.; Dudley, G. B. Ring opening / fragmentation of dihydropyrones for the synthesis of homopropargyl alcohols. *J. Am. Chem. Soc.* **2008**, *130*, 5050–5051.
- (18) Poon, K. W. C.; Albinia, P. A.; Dudley, G. B. Protection of alcohols using 2-benzyloxy-1-methylpyridinium trifluoromethanesulfonate: methyl (*R*)-(–)-3-benzyloxy-2-methyl propanoate. *Org. Synth.* **2007**, *84*, 295–305. (Featured in *ChemFiles* **2007**, *7*, 3.)
Title reagent manufactured and [marketed](#) by Sigma–Aldrich Chemical Co, catalog #679674
- (16) Nwoye, E. O.; Dudley, G. B. A method for the synthesis of *para*-methoxybenzyl (PMB) ethers under effectively neutral conditions. *Chem. Commun.* **2007**, 1436–1437.
Title reagent manufactured and [marketed](#) by Sigma–Aldrich Chemical Co, catalog #701440
- (13) Kamijo, S.; Dudley, G. B. Tandem nucleophilic addition/fragmentation reactions and synthetic versatility of vinylogous acyl triflates. *J. Am. Chem. Soc.* **2006**, *128*, 6499–6507.
- (3) Kamijo, S.; Dudley, G. B. A tandem carbanion addition/carbon–carbon bond cleavage reaction yields alkynyl ketones. *J. Am. Chem. Soc.* **2005**, *127*, 5028–5029.

Selected patents:

- Dudley, G. B. Reagent for synthesis of *para*-methoxybenzyl (PMB) ethers and associated methods. U.S. Patent No. 7,960,553 (2011). Licensed by Sigma–Aldrich.
- Dudley, G. B. Compounds and methods of arylmethylation (benzylation) as protection for alcohol groups during chemical synthesis. U.S. Patents 7,754,909 (2010), 7,915,437 (2011), 8,008,531 (2011), 8,334,414 (2012), 8,580,992 (2013). Licensed by Sigma–Aldrich.

Selected other works:

- Dudley, G. B. US fentanyl rules are so strict they may prevent life-saving research. Invited Commentary in [New Scientist](#); 19 January 2023.
- Mandal, M.; Yun, H.; Dudley, G. B.; Lin, S.; Tan, D. S.; Danishefsky, S. J. Total synthesis of guanacastepene A: a route to enantiomeric control. *J. Org. Chem.* **2005**, *70*, 10619–10637.
- Dudley, G. B.; Takaki, K. S.; Cha, D. C.; Danheiser, R. L. Total synthesis of (–)-ascochlorin via a cyclobutenone-based benzannulation strategy. *Org. Lett.* **2000**, *2*, 3407–3410.
- Gee, K. R.; Kueper, L. W., III; Barnes, J.; Dudley, G. B.; Givens, R. S. Desyl esters of amino acid neurotransmitters. Phototriggers for biologically active neurotransmitters. *J. Org. Chem.* **1996**, *61*, 1228–1233.

Financial Support

Selected Current Funding

- 08/2022–07/2025 *Chemical synthesis of illudalic acid analogs for stimulant use disorder*
Source: National Institutes of Health – National Institute on Drug Abuse
Award (Amount): NIH R15DA056843 (\$380,000 total; \$250,000 direct)
- 08/2022–07/2025 *Regioselective [2+2+2] Cyclotrimerizations*
Source: National Science Foundation
Award (Amount): CHE-2154773 (\$525,000 total; \$355,358 direct)

Selected Prior Funding

- 08/2020–07/2022 *Design and synthesis of phosphatase inhibitors as potential chemotherapeutics for chronic disease*
Source: WV INBRE Chronic Disease Research Program (CDRP)
Award (Amount): \$136,800 total; \$90,000 direct
- 08/2017–07/2022 *Dielectric Loss Processes and Microwave Effects on Reactions in Homogeneous Solutions*
Source: National Science Foundation
Award (Amount): NSF-CHE 1665029 (\$470,000 total; \$382,432 direct)
WVU subcontract: \$221,750 total; \$154,500 direct
- 09/2013–09/2018 *Synthesis of high-value alkynes*
Source: National Science Foundation
Award (Amount): NSF-CHE 1300722 (\$450,000 total; \$336,615 direct)
- 07/2008–06/2011 *New fragmentation reactions and strategies for chemical synthesis*
Source: National Science Foundation
Award (Amount): NSF-CHE 0749918 (\$378,000 total; \$272,677 direct)
- 07/2005–06/2008 *Organic Synthesis and Methodology for Roseophilin, A Pharmacologically Active Natural Product*
Source: James and Ester King Biomedical Research Program, Florida Department of Health
Award (Amount): FBRP-DOH, 016272 (\$450,000 total; \$429,618 direct)

Research Associates

Postdoctoral associates:

Dr. Samantha Ottavi, 10/2023–present
Dr. Michael P. Frasso, 08/2018–05/2020
Dr. Paratchata “Tae” Batsomboon, 06/2017–12/2019
Prof. Gaspar Diaz Muñoz, 01/2012–01/2013
Dr. Jumreang Tummatorn, 12/2009–06/2011
Dr. Philip A. Albiniaak, 08/2006 – 02/2009
Dr. Jeannie H. Jeong, 08/2007 – 12/2008
Dr. Sreenivas Katukojvala, 08/2005–07/2006
Dr. Kevin Wing C. Poon, 01/2004 – 06/2006
Dr. Shin Kamijo, 01/2004 – 03/2006
Dr. Timothy F. Briggs, 10/2003 – 10/2005
Dr. Hubert T.-C. Lam, 01/2003 – 09/2005

Graduate students:

Nathan Selvaraj, 2022-present
Kh Tanvir Ahmed, PhD 2025
Amir Tavakoli, PhD 2023
Bobby Gaston, Ph.D. 2023
Alexa C. Martin, Ph.D. 2022
Harvey F. Fullo, Ph.D. 2021
Ron R. Ramsbhag, Ph.D. 2017
Alec Morrison, Ph.D. 2017
Paratchata “Tae” Batsomboon, Ph.D. 2016
Tung Hoang, Ph.D. 2015
Rimantas Slegieris, Ph.D. 2015
Michael R. Rosana, Ph.D. 2014

Marilda P. Lisboa, Ph.D. 2013
Jingyue Yang, Ph.D. 2011
Sami F. Tlais, Ph.D. 2011
David M. Jones, Ph.D. 2009
Douglas A. Engel, Ph.D. 2009
Mariya V. Kozytska, Ph.D. 2008
Susana S. Lopez, M.S. 2009
Ernest O. Nwoye, M.S. 2008
Samuel G. Salamone, M.S. 2005

Selected undergraduate students:

Jada Berg, junior
Marisa Organiscak, B.S. 2023
Alex Ziegelmeier, B.S. 2020
Chelsea Massaro, B.S. Honors 2016
Apiwat Wangweerawong, B.S. Honors 2011
Cecelia C. O’Leary, B.S. Honors 2010
Sarah E. House, B.S. Honors 2005
James D. Sunderhaus, B.S. Honors 2003
Colleen Keohane, B.S. 2013
Rojay Gordon, B.S. 2013
Claudia R. Avalos, B.S. 2010
Shawn M. Amisial, B.S. 2007
Jeananne A. Singletary, B.S. 2004

RAP/CHM 1051L (honors first-year) students:

Margaret E. Matthews (2007), Joseph P. Hernandez (2007), Alyson W. West (2008),

Edward F. Kuester (2008), James Hoang (2013), Jillian Jones (2013), Samantha Shornack (2021-2022), Marisa Organiscak (2021-2023), Kayla Baselj (2022-2023), Jada Berg (2022-2023)

Selected visiting, exchange, and REU students:
Victoria Iacobucci (NIDA intern 2023),
Jacqueline Pinkerton (REU 2022), Caitlin

Thebeault (REU 2021), Chuthamat Duangkamol (RGJ Scholar, 2018-2019), Maria Vidaca (REU 2018), Morgan Vincent (REU 2018), Perez Youmbi (REU 2017), Mélodie Birepinte (2016), Vincent Vedovato (2014), Teng-wei Wang (2011), Jumreang Tummatorn (RGJ Scholar, 2007–2008), Maureen K. Reilly (2006)

Student Dissertations and Theses (with type and title)

18. Kh Tanvir Ahmed (PhD 2025) “*Approaches to the Synthesis of Highly Substituted Arenes*”
 17. Amir Tavakoli (PhD 2023) “*Enabling technologies for chemical synthesis: I. Selective microwave heating; II. Synthesis and regioselective cyclotrimerizations of tethered 1,6-diyne*”
 16. Robert Gaston, Jr (PhD, 2023) “*Synthesis and Pharmacology of Illudalic Acid and Analogous Chemical Structures*”
 15. Alexa C. Martin (PhD, 2022) “*Synthesis and Cyclotrimerization of Sulfonyl Enynes.*”
 14. Harvey F. Fulo (PhD, 2021) “*Enabling Technologies for Medicinal Chemistry and Synthesis: I. Cannabinoids; II. Illudalic Acid; III. Microwave Chemistry.*”
 13. Nicholas Kramer (PhD, 2017) “*Reaction discovery using neopentylene-tethered coupling partners: methodology and applications of diyne cycloisomerizations.*”
 12. Ron Ramsuhag (PhD, 2017) “*Applications of alkynogenic fragmentation products derived from vinylogous acyl triflates.*”
 11. Alec Morrison (PhD, 2017) “*Thermal cycloisomerizations of 1,6-enynes for the synthesis of illudinine and other high-value polycyclic aromatic structures.*”
 10. Paratchata “Tae” Batsomboon (PhD, 2016) “*Part I: Fragmentation reactions generating acyclic and cyclic alkynes. Part II: A second-generation formal synthesis of palmerolide A.*”
 9. Tung Hoang (PhD, 2015) “*Tandem processes involving an alkynogenic fragmentation and applications in sesquiterpene syntheses*”
 8. Rimantas Slegieris (PhD, 2015) “*Process improvements in the total chemical synthesis of progesterone, and other synthetic studies*”
 7. Michael R. Rosana (PhD, 2014) “*Selective heating of polar solutes in a homogeneous solution: evidence of microwave-specific effects and a method to quantify these effects*”
 6. Marilda P. Lisboa (PhD, 2013) “*Formal synthesis of palmerolide A using fragmentation methodology*”
 5. Jingyue Yang (PhD, 2011) “*Anionic rearrangement of 2-benzyloxy pyridine derivatives and a synthetic approach to aldingenin B*”
 4. Sami F. Tlais (PhD, 2011) “*I. para-Siletanylbenzyl (PSB) protecting group II. Stereocontrol of 5,5-spiroketals in the synthesis of cephalosporolides H, E, and F*”
 3. David M. Jones (PhD, 2009) “*Addition / C–C bond cleavage reactions of vinylogous acyl triflates and their application to natural products synthesis*”
 2. Douglas A. Engel (PhD, 2009) “*Organic synthesis and methodology related to the malaria drug artemisinin*”
 1. Mariya V. Kozytska (PhD, 2008) “*I. Siletanylmethylithium, an ambiphilic siletane. II. Synthetic approach to basilolide B*”
- Kristen Nerbecki (MS, 2022) “*Tandem Addition/Fragmentation Reactions of Vinylogous Acyl Sulfonates*”
 - Susana S. Lopez (MS, 2009) “*Methodology for the olefination of aldehydes and ketones via the Meyer-Schuster reaction*”
 - Samuel G. Salamone (MS, 2005) “*A ring expansion approach to roseophilin*”
 - Chelsea Massaro (BS, 2016) “*gem-Dimethylcyclopentane-fused pharmacophores*”

- Apiwat Wangweerawong (BS, 2011) “*Scope of a novel [1,2]-anionic rearrangement of 2-benzyloxy pyridine derivatives*”
- Cecelia C. O’Leary (BS, 2010) “*A novel protocol for the synthesis of aryl Grignard reagents at low heat*”
- Sarah E. House (BS, 2005) “*para-Silylbenzyl: a novel hydroxyl protecting group*”

Legal consulting and engagement

Representative public contributions:

- [Brief Of Expert Forensic Scientists As Amici Curiae In Support Of Petitioner Stephen McFadden](#) (Stephen Dominick McFadden v. United States of America)
 - Amicus Brief to the Supreme Court of the United States
- [Opinion testimony on designer drugs](#) (US Sentencing Commission, 04/18/2017)
- [Opinion testimony on synthetic cathinones](#) (US Sentencing Commission, 10/04/2017)
- [Panel on Fentanyl-Related Substances](#) (US Senate Staff Briefing, June 10, 2022)

Selected and recent expert witness and testimony experience:

50. United States Federal Court, Southern District of Florida, West Palm Beach, 2024-02-06
Case 9:23-cr-80156-DMM: *Sentencing hearing for a criminal proceeding* (remote)
Defendant: Humberto Jose Forte
Critical review, expert opinion, and testimony on chemistry, pharmacology, and sentencing guideline considerations for tapentadol as compared to tramadol and morphine.
37. United States Federal Court, District of Nevada, Las Vegas, 2019-06-26
Case 2:15-cr-00285-APG-GWF: *Criminal trial by jury*
Defendant: Burton Ritchie
Expert testimony and opinion on the chemical structure of synthetic cannabinoid substances including XLR-11, which was alleged to be a Controlled Substance Analogue of JWH-018.
26. United States Federal Court, District of Kansas, Topeka, 2017-03-07
Case 5:14-cr-40005-DDC: *Criminal trial by jury*
Defendant: Craig Broombaugh
Expert testimony and opinion on the chemical structure of synthetic cannabinoid, cathinone, and amphetamine substances that were alleged to be Controlled Substance Analogues.
21. United States Federal Court, Middle District of Florida, Orlando, 2016-09-14
6:16-cr-00024-GAP-DAB: *Criminal trial by jury*
Defendant: Jason Phifer
Expert testimony and opinion on the chemical structures of butylone and ethylone on whether ethylone qualifies as a “positional isomer” of butylone based on various definitions.
20. United States Federal Court, Middle District of Florida, Tampa, 2016-07-15
Case 8:15-cr-00410-JDW-TBM: *Sentencing hearing for a criminal proceeding*
Defendant: Omar Zeidan Zeidan
Expert testimony and opinion on the preparation, chemical structure, pharmacology, and central nervous system effects of synthetic cannabinoids compared to marijuana and THC.
2. United States Federal Court, Eastern District of Wisconsin, Milwaukee, 2013-02-28
Case 2:12-cv-01186-RTR: *Hearing on a petition for return of property*
Petitioner: The Smoke Shop, LLC
Expert testimony and opinion on the chemical structure and pharmacological effects of UR-144 and XLR-11, alleged to be Controlled Substance Analogues of JWH-018