

Gregory B. Dudley, Ph.D.

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| Eberly Family Distinguished Professor and Department Chair | |
| C. Eugene Bennett Department of Chemistry | Office: 222 Clark Hall |
| Eberly College of Arts and Sciences | Phone: (304) 293-0179 |
| West Virginia University | Email: gregory.dudley@mail.wvu.edu |
| Morgantown, WV 26506-6045 | Web: www.chemistry.wvu.edu/dudley |

Professional Appointments

West Virginia University, Morgantown, WV

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

Florida State University, Tallahassee, FL

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

Florida A&M University, Tallahassee, FL

- Graduate Faculty of Pharmacy and Pharmaceutical Sciences 2016

University of Ottawa, Canada

- Visiting Professor of Organic Chemistry 2011

Education and Professional Development

Sloan-Kettering Institute for Cancer Research, New York, NY

- NIH Postdoctoral Fellow, 2000–2002
- Molecular Pharmacology and Chemistry Program
- *Advisor*: Professor Samuel J. Danishefsky
- Research Topic: *Total Synthesis of Guanacastepene A*

Massachusetts Institute of Technology, Cambridge, MA

- September 1995 to August 2000
- Ph.D. in Organic Chemistry
- *Research Advisor*: Professor Rick L. Danheiser
- Thesis: *A Total Synthesis of (-)-Ascochlorin*

Florida State University, Tallahassee, FL

- August 1991 to May 1995
- B.A. degree in Chemistry, with Honors - *magna cum laude*
- *Research Advisor*: Professor Martin A. Schwartz

University of Kansas, Lawrence, KS

- June 1994 to August 1994
- NSF-REU (Research Experience for Undergraduates) Program
- *Research Advisor*: Professor Richard S. Givens

Selected Honors and Awards

- Eberly Family Distinguished Professorship, West Virginia University, 2016–present
- Brodie Research Innovation Award, 2019–2020
- *Syngenta* Lecturer, Groupe D'Etudes de Chemie Organique 57, Ascain, France, 2016
- *Organic Syntheses* Lecturer, University of New Hampshire, 2012
- Raymond Cottrell Family Professor, 2008–2012
- Highlighted in Florida Trend Magazine, “Person to Watch”, 2010
- FSU Developing Scholar Award, 2010
- FSU Undergraduate Teaching Award, 2010
- FSU Innovator Award, 2006, 2007, 2008, 2010, 2012
- Featured in Tallahassee Magazine, “The New Establishment”, 2006
- NIH Postdoctoral Fellowship, 2000–2002
- Bristol-Myers Squibb Predoctoral Fellowship, 1999–2000
- Roche Award for Excellence in Organic Chemistry, 1999
- Boehringer Ingelheim Predoctoral Fellowship, 1997–1998
- MIT Chemistry Outreach Fellowship, 1997

Selected Professional Activities

- Department Chair: Bennett Department of Chemistry, 2016–present
Responsible for management and leadership direction of the chemistry department in keeping with the mission and vision of WVU. Responsibilities include leading shared governance, strategic planning, budget and facilities, fundraising, personnel management, recruiting and retention, curriculum and program development, research and scholarship, etc.
- WVU Inclusive Hiring Initiative, Facilitator, 2020–present
Trained facilitator in a Provost Office initiative, coordinated through the WVU ADVANCE Center, to promote equitable and inclusive hiring practices that lead to better representational diversity and a stronger faculty.
- Science policy consultant, contributor, and expert witness, 2012–present
Public sector work toward better science-based policies and practices. Consulted on >100 Federal drug cases and testified >30 times related to the regulatory challenges of emerging designer drugs; helped author a public letter from concerned scientists about fentanyl-related substances; helped draft an *Amicus* brief for the US Supreme Court in the case of *McFadden v. US*; worked successfully with a non-profit organization and White House counsel on a clemency case; and twice provided invited policy recommendations and opinion testimony before the US Sentencing Commission in Washington: recommendations included categorical coverage of cathinones and cannabinoids as now reflected in the US Sentencing Guidelines.
- 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 faculty evaluations: helping create policy to ensure that contributions related to social justice, equity and inclusion, and public engagement are recognized and rewarded.
- ACS DOC Executive Committee, Member-at-Large, 2019–2021
Served on the Executive Committee for the American Chemical Society Division of Organic Chemistry, with duties including strategic planning and coordination of ACS DOC activities; selected by national election of ACS DOC members.
- Conference Organizer: Enabling Technology for Reactions and Processes, 2015–2017
Initiated and coordinated an annual workshop for synthetic and physical organic chemists on modern tools and methods for chemical synthesis. This workshop was part of the Telluride Science Research Center (TSRC) summer conference series in Telluride, CO.
- Associate Chair: FSU Chemistry and Biochemistry Department Curriculum, 2012–2016

- Responsible for curriculum design, teaching assignments, instructor supervision, course creation and approval, and other duties.
- Faculty Advisor: FSU Chemistry Outreach, 2004–2013
Initiated and served as faculty mentor for a program in which graduate students visit area high schools, interact with students in the chemistry classes, and perform demonstrations
 - Faculty Advisor: FSU Alpha Phi Omega, 2007–2013
Served as faculty advisor and mentor for the FSU chapter of Alpha Phi Omega (ΑΦΩ), the national undergraduate service fraternity
 - Faculty Advisor: FSU ChemPreneurs pilot program, 2009
Led a ChemPreneur team, comprising a chemistry graduate student and a business school entrepreneur student, in the development of a business plan based on chemical technology

Classroom Teaching

West Virginia University

- Instructor: Introduction to Chemistry, CHEM 110
Course Description: preparatory chemistry course for aspiring science majors (2021)
- Instructor: Advanced Organic Chemistry 2, CHEM 532
Course Description: graduate course focused on organic synthesis (2022, 2023)

Florida State University

- Instructor: General Chemistry I, CHM 1045C
Course Description: introductory chemistry course for science majors (2004–2005, 2007)
- Instructor: Survey of Organic Chemistry, CHM 2200
Course Description: one-semester organic chemistry for allied health majors (2011–2013)
- Instructor: Organic Chemistry I, CHM 2210
Course Description: introductory undergraduate organic chemistry course (2010, 2015x2)
- Instructor: Organic Chemistry II, CHM 2211
Course Description: second-semester undergraduate organic chemistry course (2009)
- Instructor: Honors Organic Chemistry I, CHM 2210
Course Description: undergraduate organic chemistry course for honors students (2007–2008)
- Instructor: Honors Organic Chemistry II, CHM 2211
Course Description: undergraduate organic chemistry course for honors students (2008–2009)
- Instructor: Advanced Organic Chemistry — Reactions, CHM 5226
Course Description: graduate course on important organic methodology (2002–2006, 2011)
- Instructor: Synthetic Organic Chemistry, CHM 5250
Course Description: graduate course on organic reactions and synthesis (2014x2)
- Instructor: Chemical Reactivity — Bioorthogonal Chemistry, CHM 5555
Course Description: graduate course on a cutting-edge topic in the chemical sciences (2012)

University of Ottawa

- Instructor: Advanced Topics in Organic Chemistry: Alkynes, CHM 8304J (2011)
Course Description: graduate course on modern alkyne chemistry (2011)

Research Associates

Graduate Students

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| Amir Tavakoli | 5 th year student from Sharif Univ. of Technology, Iran |
| Bobby Gaston | 5 th year student from Franklin & Marshall College, PA |
| Kh Tanvir Ahmed | 2 nd year student from Duquesne University, PA |
| Sohag Ahmed | 1 st year student from University of Dhaka, Bangladesh |
| Eustace Amadi | 1 st year student from University of Nigeria Nsukka |

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| Abra Dadum | 1 st year student from Indiana University of Pennsylvania |
| Nathan Selvaraj | 1 st year student from West Virginia University |
| <i>Undergraduate Students</i> | |
| Marisa Organiscak | Junior CHEM 497 research student |
| Kayla Baselj | Sophomore WVU RAP HONR 297 student |
| Jada Berg | First-year WVU RAP HONR 297 student |
| <i>Previous Group Members</i> | |
| <i>Former postdoctoral associates:</i> | |
| Dr. Michael P. Frasso, 08/2018–05/2020 | Cecelia C. O’Leary, B.S. Honors 2010 |
| Dr. Paratchata “Tae” Batsomboon, 06/2017–12/2019 | Sarah E. House, B.S. Honors 2005 |
| Prof. Gaspar Diaz Muñoz, 01/2012–01/2013 | James D. Sunderhaus, B.S. Honors 2003 |
| Dr. Jumreang Tummatorn, 12/2009–06/2011 | Andrew Janeczek, B.S. 2016 |
| Dr. Philip A. Albiniaak, 08/2006 – 02/2009 | Christina Dadich, B.S. 2015 |
| Dr. Jeannie H. Jeong, 08/2007 – 12/2008 | Taylor Southworth, B.S. 2013 |
| Dr. Sreenivas Katukojvala, 08/2005–07/2006 | Colleen Keohane, B.S. 2013 |
| Dr. Kevin Wing C. Poon, 01/2004 – 06/2006 | Rojay Gordon, B.S. 2013 |
| Dr. Shin Kamijo, 01/2004 – 03/2006 | Janet Simon, B.S. 2012 |
| Dr. Timothy F. Briggs, 10/2003 – 10/2005 | Claudia R. Avalos, B.S. 2010 |
| Dr. Hubert T.-C. Lam, 01/2003 – 09/2005 | Shawn M. Amisial, B.S. 2007 |
| | Jeananne A. Singletary, B.S. 2004 |
| <i>Former graduate students:</i> | |
| Alexa C. Martin, Ph.D. 2022 | <i>RAP/CHM 1051L (honors first-year) students:</i> |
| Harvey F. Fullo, Ph.D. 2021 | Margaret E. Matthews (2007), Joseph P. |
| Ron R. Ramsubhag, Ph.D. 2017 | Hernandez (2007), Alyson W. West (2008), |
| Alec Morrison, Ph.D. 2017 | Edward F. Kuester (2008), James Hoang |
| Paratchata “Tae” Batsomboon, Ph.D. 2016 | (2013), Jillian Jones (2013), Samantha |
| Tung Hoang, Ph.D. 2015 | Shornack (2021-2022), Marisa Organiscak |
| Rimantas Slegieris, Ph.D. 2015 | (2021-2023), Kayla Baselj (2022-2023), Jada |
| Michael R. Rosana, Ph.D. 2014 | Berg (2022-2023) |
| Marilda P. Lisboa, Ph.D. 2013 | <i>Visiting, exchange, and REU students:</i> |
| Jingyue Yang, Ph.D. 2011 | Jacqueline Pinkerton (REU 2022), Caitlin |
| Sami F. Tlais, Ph.D. 2011 | Thebeault (REU 2021), Chuthamat |
| David M. Jones, Ph.D. 2009 | Duangkamol (RGJ Scholar, 2018-2019), |
| Douglas A. Engel, Ph.D. 2009 | Maria Vidaca (REU 2018), Morgan Vincent |
| Mariya V. Kozytska, Ph.D. 2008 | (REU 2018), Perez Youmbi (REU 2017), |
| Susana S. Lopez, M.S. 2009 | Mélodie Birepinte (2016), Suzan Al-Anwar |
| Daniella M. Barker, M.S. 2009 | (2015), Vincent Vedovato (2014), Andrew |
| Dena R. Hodges, M.S. 2008 | Royappa (2013), Vitchaphol “Ton” |
| Ernest O. Nwoye, M.S. 2008 | Motaneeyachart (2012), Sanpitcha “Jae” |
| Samuel G. Salamone, M.S. 2005 | Siangsuebchart (2012), Cristiano Leandro |
| | (2012), Teng-wei Wang (2011), Tanit |
| <i>Selected former undergraduate students:</i> | Intaranukulkit (2011), Thitiya “Whan” |
| Alex Ziegelmeier, B.S. 2020 | Patarakosol (2009), Viriya “Joy” |
| Chelsea Massaro, B.S. Honors 2016 | Boonmuang (2009), Jumreang Tummatorn |
| Apiwat Wangweerawong, B.S. Honors 2011 | (RGJ Scholar, 2007–2008), Maureen K. |
| | Reilly (2006) |

Student Dissertations and Theses (with type and title)

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 dienyne cycloisomerizations.*”
 12. Ron Ramsubhag (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. Siletanylmethyl lithium, an ambiphilic siletane. II. Synthetic approach to basiliolide 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, Honors 2016) “*gem-Dimethylcyclopentane-fused pharmacophores*”
 - Apiwat Wangweerawong (BS, Honors 2011) “*Scope of a novel [1,2]-anionic rearrangement of 2-benzyloxy pyridine derivatives*”
 - Cecelia C. O’Leary (BS, Honors 2010) “*A novel protocol for the synthesis of aryl Grignard reagents at low heat*”
 - Sarah E. House (BS, Honors 2005) “*para-Siletanylbenzyl: a novel hydroxyl protecting group*”

Publications

Dudley Lab Original Research Publications: (undergraduate co-authors underlined)

- (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.
DOI: 10.1021/acs.joc.2c01741
<https://pubs.acs.org/doi/full/10.1021/acs.joc.2c01741>
- (95) Tavakoli, A.; Dudley, G. B. Synthesis of 4,4-dimethyl-1,6-heptadiyne and other neopentylene-tethered (NPT) 1,6-diynes. *J. Org. Chem.* **2022**, *87*, 5775–5784.
DOI: 10.1021/acs.joc.2c00110
<https://pubs.acs.org/doi/full/10.1021/acs.joc.2c00110>
- (94) Blake, M. R.; Gardner, R. T.; Jin, H.; Staffenson, M.; Rueb, N. J.; Barrios, A. M.; Dudley, G. B.; Cohen, M. S.; Habecker, B. A. Small molecules targeting PTP σ —Trk interactions promote sympathetic nerve regeneration. *ACS Chem. Neurosci.* **2022**, *13*, 688–699.
DOI: 10.1021/acschemneuro.1c00854
<https://pubs.acs.org/doi/full/10.1021/acschemneuro.1c00854>
- (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)
DOI: 10.1039/D1CP04883J
<https://pubs.rsc.org/en/content/articlelanding/2022/CP/D1CP04883J>
- (92) Fullo, H. F.; Rueb, N. J.; Gaston, R., Jr.; Batsomboon, P.; Ahmed, K. T.; Barrios, A. M.; Dudley, G. B. Synthesis of illudalic acid and analogous phosphatase inhibitors. *Org. Biomol. Chem.* **2021**, *19*, 10596–10600.
DOI: 10.1039/d1ob02106k
<https://pubs.rsc.org/en/content/articlelanding/2021/ob/d1ob02106k>
- (91) Zhang, L.; Jin, T.; Guo, Y.; Martin, A. C.; Sun, K.; Dudley, G. B.; Yang, J. Synthesis of *gem*-dimethylcyclopentane-fused arenes with various topologies via TBD-mediated dehydro-Diels-Alder reaction. *J. Org. Chem.* **2021**, *86*, 16716–16724.
DOI: 10.1021/acs.joc.1c01957
<https://pubs.acs.org/doi/abs/10.1021/acs.joc.1c01957>
- (90) Martin, A. C.; Rogers, J. A.; Batsomboon, P.; Morrison, A. E.; Ramsubhag, R.; Popp, B. V.; Dudley, G. B. Benzannulation and hydrocarboxylation methods for the synthesis of a neopentylene-fused analogue of ibuprofen. *ACS Omega* **2021**, *6*, 30108–30114.
DOI: 10.1021/acsomega.1c04943
<https://pubs.acs.org/doi/10.1021/acsomega.1c04943>
- (89) Fullo, 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.
DOI: 10.1021/acs.jmedchem.1c00442
<https://pubs.acs.org/doi/10.1021/acs.jmedchem.1c00442>
• Highlighted in *Synfacts* **2021**, *17*, 0816; DOI: 10.1055/s-0040-1719639
- (88) Tao, Y.; Teng, C.; Musho, T. D.; van de Burgt, L. J.; Lochner, E.; Heller, W. T.; Strouse, G. F.; Dudley, G. B.; Stiegman, A. E. Direct measurement of the selective microwave-induced heating of agglomerates of dipolar molecules: the origin of and parameters

- controlling a microwave specific superheating effect. *J. Phys. Chem. B* **2021**, 125, 2146–2156.
DOI: 10.1021/acs.jpcc.0c10291
<https://pubs.acs.org/doi/10.1021/acs.jpcc.0c10291>
- (87) Tavakoli, A.; Dudley, G. B. Synthesis of 4,4-dimethyl-1,6-heptadiyne and alcyopterosin O. *Org. Lett.* **2020**, 22, 8947–8951.
DOI: 10.1021/acs.orglett.0c03356
<https://pubs.acs.org/doi/full/10.1021/acs.orglett.0c03356>
- (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. (Featured Article)
DOI: 10.1021/acs.joc.0c01301
<https://pubs.acs.org/doi/10.1021/acs.joc.0c01301>
- (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.
DOI: 10.1039/d0cc04584e
<https://pubs.rsc.org/en/content/articlelanding/2020/CC/D0CC04584E>
Chemistry World feature article: <https://www.chemistryworld.com/news/retro-diels-alder-study-links-solvent-viscosity-to-reaction-rate-under-microwave-heating/4012425.article>
- (84) Fulo, H. F.; Vincent, M. A.; Stiegman, A. E.; Dudley, G. B. Cooperative application of conventional and microwave heating. *Asian J. Org. Chem.* **2020**, 9, 961–966.
DOI: 10.1002/ajoc.202000157
<https://onlinelibrary.wiley.com/doi/abs/10.1002/ajoc.202000157>
- (83) Frasso, M. A.; Stiegman, A. E.; Dudley, G. B. International perspectives on microwave heating in organic synthesis. *Kagaku to Kogyo (Chemistry and Chemical Industry, ISSN: 0368-5918)* **2020**, 73, 244–245.
(invited contribution to special issue on microwave chemistry)
- (82) McCullough, B. S.; Batsomboon, P.; Hutchinson, K. B.; Dudley, G. B.; Barrios, A. M. Synthesis and PTP inhibitory activity of illudalic acid and its methyl ether, with insights into selectivity for LAR PTP over other tyrosine phosphatases under physiologically relevant conditions. *J. Nat. Prod.* **2019**, 82, 3386–3393.
<https://pubs.acs.org/doi/full/10.1021/acs.jnatprod.9b00663>
- (81) Yang, J.; Guo, Y.; Wang, J.; Dudley, G. B.; Sun, K. DFT study on the reaction mechanism and regioselectivity for the [1,2]-anionic rearrangement of 2-benzyloxy pyridine derivatives. *Tetrahedron* **2019**, 75, 4451–4457.
<https://www.sciencedirect.com/science/article/pii/S0040402019306787>
- (80) Duangkamol, C.; Batsomboon, P.; Stiegman, A. E.; Dudley, G. B. Microwave heating outperforms conventional heating for a thermal reaction that produces a thermally labile product: Observations consistent with selective microwave heating. *Chem.–Asian J.* **2019**, 14, 2594–2597. DOI: 10.1002/asia.201900625
<https://onlinelibrary.wiley.com/doi/abs/10.1002/asia.201900625>
- (79) Yang, J.; Hoang, T. T.; Dudley, G. B. Alkynogenic fragmentation. *Org. Chem. Front.* **2019**, 6, 2560–2569.
<https://pubs.rsc.org/en/content/articlelanding/2019/qo/c9qo00266a/>
- (78) Fulo, H. F.; Albinak, P. A.; Dudley, G. B. Discussion Addendum for Protection of Alcohols using 2-Benzyloxy-1-methylpyridinium Trifluoromethanesulfonate: Methyl (*R*)-(-)-3-Benzyloxy-2-methyl Propanoate. *Org. Synth.* **2019**, 96, 124–136.

- <http://orgsyn.org/Content/pdfs/procedures/v96p0124.pdf>
- (77) Hayes, K.; Batsomboon, P.; Chen, W.-C. Becker, A.; Escherich, S.; Yang, Y.; Robart, A. R.; Dudley, G. B.; Geldenhuys, W. J.; Hazlehurst, L. A. Inhibition of the FAD containing ER oxidoreductin 1 (Ero1) protein by EN-460, a strategy for treatment of multiple myeloma. *Bioorg. Med. Chem.* **2019**, *27*, 1479–1488.
<https://www.sciencedirect.com/science/article/pii/S0968089618318856>
- (76) dos Passos Gomes, G.; Morrison, A. E.; Dudley, G. B.; Alabugin, I. V. Optimizing amine-mediated alkyne-allene isomerization to improve benzannulation cascades: synergy between theory and experiments. *Eur. J. Org. Chem.* **2019**, *2/3*, 512–518.
(Special Issue: Organic Reaction Mechanisms)
<https://onlinelibrary.wiley.com/doi/10.1002/ejoc.201801052>
- (75) El Anwar, S.; Laila, Z.; Ramsubhag, R.; Tlais, S.; Safa, A.; Dudley, G.; Naoufal, D. Synthesis and characterization of click-decahydrodecaborate derivatives by the copper(I) catalyzed [3+2] azide-alkyne cycloaddition reaction. *J. Organomet. Chem.* **2018**, *865*, 89–94.
(Special Issue: Organometallic Chemistry of Boranes and Carboranes)
<https://www.sciencedirect.com/science/article/pii/S0022328X18300482>
- (74) Dudley, G. B.; Stiegman, A. E. Changing perspectives on the strategic use of microwave heating in organic synthesis. *Chem. Rec.* **2018**, *18*, 381–389.
DOI: 10.1002/tcr.201700044
<http://onlinelibrary.wiley.com/doi/10.1002/tcr.201700044/abstract>
- (73) Kramer, N. J.; Hoang, T. T.; Dudley, G. B. Reaction discovery using neopentylene-tethered coupling partners: cycloisomerization/oxidation of electron-deficient dienyne. *Org. Lett.* **2017**, *19*, 4636–4639.
<http://pubs.acs.org/doi/abs/10.1021/acs.orglett.7b02261>
- (72) Morrison, A. E.; Hoang, T. T.; Birepinte, M.; Dudley, G. B. Synthesis of illudinine from dimedone. *Org. Lett.* **2017**, *19*, 858–861.
<http://pubs.acs.org/doi/abs/10.1021/acs.orglett.6b03887>
<https://doi.org/10.1021/acs.orglett.6b03887>
- (71) Wu, Y.; Gagnier, J.; Dudley, G. B.; Stiegman, A. E. The “chaperone” effect in microwave-driven reactions. *Chem. Commun.* **2016**, *52*, 11281–11283.
<http://pubs.rsc.org/en/content/articlelanding/2016/cc/c6cc06032c#!divAbstract>
- (70) Ramsubhag, R. R.; Massaro, C. L.; Dadich, C. M.; Janeczek, A. J.; Hoang, T. T.; Mazzio, E. A.; Eyunni, S.; Soliman, K. F. A.; Dudley, G. B. Synthesis of “neoprofen”, a rigidified analogue of ibuprofen, exemplifying synthetic methodology for altering the 3-D topology of pharmaceutical substances. *Org. Biomol. Chem.* **2016**, *14*, 7855–7858.
(Themed collection: Contemporary Synthetic Chemistry in Drug Discovery)
<http://pubs.rsc.org/en/content/articlelanding/2016/ob/c6ob01351a>
- (69) Morrison, A. E.; Hrudka, J. J.; Dudley, G. B. Thermal cycloisomerization of putative allenylpyridines for the synthesis of isoquinoline derivatives. *Org. Lett.* **2016**, *18*, 4104–4107.
<http://pubsdc3.acs.org/doi/abs/10.1021/acs.orglett.6b02034>
- (68) Batsomboon, P.; Dudley, G. B. Synthesis of C1-C15 of palmerolide A: tactical advances that can lead to better design strategies for polyketide synthesis. *Tetrahedron Lett.* **2016**, *57*, 3757–3759.
<http://www.sciencedirect.com/science/article/pii/S0040403916308358>

- (67) Hoang, T. T.; Birepinte, M.; Kramer, N. J.; Dudley, G. B. Six-step synthesis of alcyopterosin A, a bioactive illudalane sesquiterpene with a *gem*-dimethylcyclopentane ring. *Org. Lett.* **2016**, *18*, 3470–3473.
<http://pubsdc3.acs.org/doi/abs/10.1021/acs.orglett.6b01665>
- (66) Slegeris, R.; Dudley, G. B. Alternative synthetic approaches to *rac*-progesterone by way of the classic Johnson cationic polycyclization strategy. *Tetrahedron* **2016**, *72*, 3666–3672.
 (Special issue: Tetrahedron Young Investigator Award Symposium in Print)
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- (VII) Hoang, T. T.; Dudley, G. B.; Williams, L. J. Fragmentation Reactions. In *Comprehensive Organic Synthesis*, 2nd Edition; Molander, G., Knochel, P., Eds.; Elsevier: Oxford, 2014; Vol. 6, Chap. 30, 842–860.
- (VI) Dudley, G. B. Silacyclobutane, 1-[4-(bromomethyl)phenyl]-1-methyl- (and alcohol). In *Encyclopedia of Reagents for Organic Synthesis* [Online]; Crich, D., Fuchs, P. L., Charette, A. B., Rovis, T., Eds., John Wiley & Sons: Chichester. DOI: 10.1002/047084289X.rn01526, Article Online Posting Date: May 3, 2013.
<http://onlinelibrary.wiley.com/o/eros/articles/rn01526/frame.html>
- (V) Dudley, G. B. 2-(4-Methoxybenzyloxy)-4-methylquinoline. In *Encyclopedia of Reagents for Organic Synthesis* [Online]; Crich, D., Charette, A. B., Fuchs, P. L., Molander, G. A., Eds., John Wiley & Sons: Chichester. DOI: 10.1002/047084289X.rn01183, Article Online Posting Date: October 15, 2010.
<http://onlinelibrary.wiley.com/o/eros/articles/rn01183/frame.html>
- (IV) Dudley, G. B. 2-Benzyloxy-1-methylpyridinium trifluoromethanesulfonate. In *Encyclopedia of Reagents for Organic Synthesis* [Online]; Paquette, L., Fuchs, P., Crich, D., Molander, G., Eds., John Wiley & Sons: Chichester. DOI: 10.1002/047084289X.rn00906, Article Online Posting Date: September 15, 2008.
<http://onlinelibrary.wiley.com/o/eros/articles/rn00906/frame.html>
- (III) Kozytska, M. V.; Dudley, G. B. Four-membered rings with one silicon, germanium, tin, or lead atom. *Reference Module in Chemistry, Molecular Sciences and Chemical Engineering*, In *Comprehensive Heterocyclic Chemistry III*; Katritzky, A. R., Ramsden, C. A., Scriven, E. F. V., Taylor, R. J. K., Eds., Elsevier: Oxford, 2008; vol 2, pp 513–554.
<http://www.sciencedirect.com/science/article/pii/B978008044992000211X>
- (II) Danheiser, R. L.; Dudley, G. B.; Austin, W. F. Product class 13: alkenylketenes. In *Science of Synthesis: Houben–Weyl Methods of Molecular Transformation*. Bellus, D., Danheiser, R. L., Eds., Thieme: Stuttgart, 2006; Vol. 23, Chapter 13, pp 492–568.
- (I) Austin, W. F.; Kowalczyk, J. J.; Dudley, G. B.; Danheiser, R. L. Product class 7: alkylideneketenes. In *Science of Synthesis: Houben–Weyl Methods of Molecular Transformation*. Bellus, D., Danheiser, R. L., Eds., Thieme: Stuttgart, 2006; Vol. 23, Chapter 7, pp 245–258.

Patents:

- (iii) Dudley, G. B.; Batsomboon, P.; Gaston, R, Jr.; Fulo, H. F. *Selective Phosphatase Inhibitors Based On Illudalic Acid*. International Patent Application PCT/US2021/043713 (July 29, 2021); US National Phase App. 18/007,296 filed January 27, 2023.
- (ii) Dudley, G. B. Reagent for synthesis of para-methoxybenzyl (PMB) ethers and associated methods. U.S. Patent No. 7,960,553 (2011).
1 patent, licensed from FSU by Sigma–Aldrich Chemical Company.
- (i) 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).
5 patents, licensed from FSU by Sigma–Aldrich Chemical Company.

Research and Scholarly Presentations

- upcoming**
193. University of Louisville, KY
192. Northern Kentucky University, Highland Heights, KY
- 2022**
191. ACS Southeast Meeting (SERMACS), San Juan, Puerto Rico (med chem talk)
190. ACS Southeast Meeting (SERMACS), San Juan, Puerto Rico (MW chem talk)
189. Chemistry and Pharmacology of Drug Abuse (CPDA) Conference, Boston, MA
188. Natural Products Gordon Conference
187. International Microwave Power Institute IMPI 54 Symposium, Savannah, GA
186. ACS Middle Atlantic Regional Meeting (MARM), New Jersey
185. Florida Heterocyclic Conference, Gainesville
- 2021**
184. Pacificchem 2021 Conference (virtual)
183. ACS Southeast Meeting (SERMACS), Birmingham, AL
- 2020**
182. Hamline College, St Paul, MN (virtual)
- 2019**
181. ACS Southeast Meeting, Savannah, GA (Microwave Chemistry Symposium)
- 2018**
180. Japan Society of Electromagnetic Wave Energy Applications (JEMEA) Symposium, Kitakyushu, Japan
179. Keio University, Tokyo, Japan
178. EYELA Corp, Tokyo, Japan
177. Asia-Pacific Microwave Conf., Kyoto, Japan
176. JSPS 188 Committee, Kyoto, Japan
175. WVU Health Sciences, Morgantown, WV
174. Kasetsart University, Bangkok, Thailand
173. IUPAC Green Chem. Conf., Bangkok, Thailand
172. National Fed. Sentencing Seminar, Orlando, FL
171. Yanshan University, Qinhuangdao, China
170. East China University of Science and Technology (ECUST), Shanghai
- 2017**
169. ACS Southeast Meeting, Charlotte, NC (Organic Chemistry)
168. ACS Southeast Meeting, Charlotte, NC (Chemistry and the Law)
167. ACS Southeast Meeting, Charlotte, NC (CEM Microwave Chemistry Symposium)
166. ACS Southwest Meeting, Lubbock, TX (Rising Stars in Organic Chemistry)
165. ACS Southwest Meeting, Lubbock, TX (Enabling Techniques for Organic Synthesis)
164. Youngstown State University, OH
163. National Fed. Sentencing Seminar, Tampa, FL
162. TSRC Enabling Technology for Reactions and Processes Conference, Telluride, CO
161. 18th RGJ PhD Congress, Bangkok, Thailand
160. Chulabhorn Research Institute, Thailand
159. Chiang Mai University, Thailand
158. Middle Florida Federal Defenders, Orlando, FL
157. ACS National Meeting (ORGN), San Fran, CA
156. ACS National Meeting (CHAL), San Fran, CA
155. ACS National Meeting (ORGN), San Fran, CA
154. University of Pittsburgh, PA
- 2016**
153. WVU Health Sciences, Morgantown, WV
152. 57th Groupement d'Etude de Chimie Organique (GECO), Basque Region, Ascaïn, France
151. TSRC Enabling Technology for Reactions and Processes Conference, Telluride, CO

150. West Virginia University, Morgantown
149. Rensselaer Polytechnic Institute, Troy, NY
148. Mona Symposium on Natural Products and Medicinal Chemistry, Kingston, Jamaica

2015

147. Pacificchem 2015, Honolulu, HI (*organic*)
146. Pacificchem 2015, Honolulu, HI (*clean energy*)
145. TSRC Enabling Technology for Reactions and Processes Conference, Telluride, CO
144. ACS Florida Meeting, Tampa (*chem ed*)
143. ACS Florida Meeting, Tampa (*organic*)
142. Georgia State University, Atlanta
141. University of California, San Francisco
140. Rigel Pharmaceuticals, San Francisco
139. Auburn University, AL
138. Rutgers University, Piscataway, NJ

2014

137. University of Kansas, Lawrence
136. North Carolina Federal Defenders, Raleigh, NC
135. CEM Corporation, Matthews, NC
134. University of North Carolina, Greensboro
133. Wake Forest University, Winston-Salem, NC
132. University of California, Merced
131. Utah State University, Logan
130. Brigham Young University, Provo, UT
129. Cubist Pharmaceuticals, Lexington, MA
128. Ensemble Pharmaceuticals, Cambridge, MA
127. TSRC Accelerating Reaction Discovery Conference, Telluride, CO
126. Natural Products Gordon Conference
125. Organic Reactions Gordon Conference
124. National Federal Defenders Convention, Cleveland, OH
123. Florida Heterocyclic Conference, Gainesville
122. Florida State University, Tallahassee

2013

121. Lebanese University, Beirut
120. University of New Mexico, Albuquerque
119. New Mexico State University, Las Cruces
118. University of South Alabama, Mobile
117. University of West Florida, Pensacola

2012

116. Max Plank Institute, Potsdam, Germany
115. University of Hannover, Germany
114. Technical University, Dortmund, Germany
113. Louisiana State University, Baton Rouge
112. Notre Dame University, South Bend, IN
111. University of Chicago, IL
110. University of Illinois, Chicago

109. University of New Hampshire, Durham
108. Dartmouth College, Hanover, NH
107. University of the South, Sewanee, TN
106. University of Tennessee, Knoxville
105. Middle Tenn State Univ, Murfreesboro, TN
104. ACS National Meeting, Philadelphia, PA
103. ACS National Meeting, Philadelphia, PA
102. ACS Florida Meeting, Tampa
101. Organic Faculty of Florida Conference
100. FAMU-FSU Engineering, Tallahassee
99. FSU Biomedical Sciences Symposium

2011

98. University of Virginia, Charlottesville
97. Univ of Mary Washington, Fredericksburg, VA
96. ACS Southeast Meeting, Richmond, VA
95. NanoFlorida Conference, Miami, FL
94. University of Houston, TX
93. University of Texas, San Antonio
92. University of Minnesota, Twin Cities
91. University of Minnesota, Duluth
90. North Dakota State University, Fargo
89. NSERC-CREATE Program, Ottawa, Canada
88. University of Ottawa, Canada
87. Florida Heterocyclic Conference, Gainesville

2010

86. Federal University of Ouro Preto, Brazil
85. Federal University of Minas Gerais, Brazil
84. Federal University of Fluminense, Brazil
83. Federal University of Rio de Janeiro, Brazil
82. UNICAMP, Campinas, Brazil
81. University of Sao Paulo, Brazil
80. Sunrise Rotary Club, Tallahassee, FL
79. Tallahassee Economic Develop. Council, FL

2009

78. University of Toledo, Ohio
77. Wayne State University, Detroit, MI
76. University of California, Berkeley
75. Rigel Pharmaceuticals, San Francisco, CA
74. FSU College of Medicine, Tallahassee
73. Univ of Southern Mississippi, Hattiesburg
72. University of South Florida, Tampa
71. Natural Products Gordon Conference
70. Innovation Park, Tallahassee, FL
69. University of Oregon, Eugene
68. Oregon State University, Corvallis
67. Berry College, Mt Berry, GA

2008

66. BioFine Chemical Process Design Conference, Sanibel Island, FL

65. ACS Southeast Meeting, Nashville, TN
 64. University of Vermont, Burlington
 63. Schering–Plough Research, Cambridge, MA
 62. Nanyang Technical University, Singapore
 61. A*Star Institute of Chemical and Engineering Sciences, Singapore
 60. National University of Singapore
 59. Chulabhorn Research Institute, Thailand
 58. Chulalongkorn Univ, Bangkok, Thailand
 57. Schering–Plough Research, Kenilworth, NJ
 56. ACS Florida Meeting, Orlando
 55. U of British Columbia, Vancouver, Canada
 54. Simon Fraser University, Burnaby, Canada
 53. University of Washington, Seattle
 52. Organic Faculty of Florida Conference
 51. Texas Christian University, Fort Worth
 50. University of Texas, Arlington
 49. U of Texas Southwestern Med Center, Dallas
- 2007**
48. Florida State University, Tallahassee
 47. International Conference on the Chemistry of Antibiotics (ICCA-X), Nashville, TN
 46. ACS Florida Meeting, Orlando
 45. University of Wisconsin, Milwaukee
 44. Marquette University, Milwaukee, WI
 43. ACS National Meeting, Chicago, IL
 42. University of Pennsylvania, Philadelphia
 41. University of California, Santa Barbara
 40. University of California, San Diego
 39. Emory University, Atlanta, GA
 38. Tennessee State University, Nashville
- 2006**
37. University of Arkansas, Fayetteville
 36. University of Delaware, Wilmington
 35. Temple University, Philadelphia, PA
 34. ACS Southeast Meeting, Augusta, GA
 33. East Carolina Univ, Greenville, NC
32. ACS National Meeting, San Francisco, CA
 31. Organic Reactions Gordon Conference
 30. Eli Lilly Pharmaceuticals, Indianapolis, IN
 29. ACS Florida Meeting, Orlando
 27. Organic Faculty of Florida Conference
 27. Univ of North Florida, Jacksonville
 26. Vanderbilt University, Nashville, TN
 25. Austin Peay State Univ, Clarksville, TN
 24. Merck Research, Rahway, NJ
 23. Univ of North Carolina, Chapel Hill
 22. GlaxoSmithKline, RTP, NC
 21. Duke University, Durham, NC
- 2005**
20. Univ of Massachusetts, Amherst
 19. Smith College, Northampton, MA
 18. University of Connecticut, Storrs
 17. University of Houston, TX
 16. University of Florida, Gainesville
 15. University of Georgia, Athens
 14. Gulf Coast Chemistry Conference
 13. Natural Products Gordon Conference
 12. University of Alabama, Tuscaloosa
 11. University of West Florida, Pensacola
- 2004**
10. Rutgers University, New Brunswick, NJ
 9. Barry University, Miami, FL
 8. Southern University, Baton Rouge, LA
 7. Kennesaw State University, Kennesaw, GA
 6. ACS Florida Meeting, Orlando
 5. Organic Faculty of Florida Conference
- 2003**
4. Florida Institute of Technology, Melbourne
 3. College of Charleston, SC
 2. Florida International University, Miami
 1. University of Miami, FL

Financial Support

Current Funding

- 08/01/2022–07/31/2025 *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)
 Role: PI (100%)
- 08/01/2022–07/31/2025 *Regioselective [2+2+2] Cyclotrimerizations*
 Source: National Science Foundation
 Award (Amount): CHE-2154773 (\$525,000 total; \$355,358 direct)
 Role: PI (67%); co-PI: Brian Popp (33%)

- 08/2022–07/2024 *Mode of Action and Improving the Efficacy of the Novel Antibiotics Resazomycins*
 Source: WV INBRE Major PUI Research Award
 Award to West Liberty University (WLU) (Amount): \$351,250 total; \$250,000 direct
 WVU budget (Amount): \$25,000 total; \$25,000 direct
 Role: Collaborator (100% on WVU budget) (Project PI: Deanna Schmitt, WLU)

Prior Funding

- 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
 Role: co-PI (50%); PI: Al Stiegman, Florida State University (50%)
- 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
 Role: PI (80%); co-I's: Justin Legleiter (10%) and Aaron Robart (10%)
- 08/2020–12/2021 *Regioselective Nickel-Catalyzed [2+2+2] Cyclotrimerizations*
 Source: WVU Program to Stimulate Competitive Research (PSCoR)
 Award (Amount): \$22,400 direct
 Role: PI (50%); co-PI: Brian Popp (50%)
- 05/2019–12/2020 *Neopentylene-based synthetic building blocks for organic and medicinal chemistry*
 Source: Don and Linda Brodie Resource Fund for Innovation, WVU
 Award (Amount): \$38,000 direct
 Role: PI (50%); co-PI: Brian Popp (50%)
- 07/2018–06/2020 *Experimental therapeutics synthesis collaborative*
 Source: The Estate of Dr. William Price Bittinger
 Award (Amount): WVU-SOM Foundation (\$96,626 total; \$96,626 direct)
 Role: PI; co-PI: Paul Lockman
- 09/2013–09/2018 *Synthesis of high-value alkynes*
 Source: National Science Foundation
 Award (Amount): NSF-CHE 1300722 (\$450,000 total; \$336,615 direct)
 Role: PI (80%); co-PI: Igor Alabugin (20%)
- 07/2011–08/2013 *New fragmentation reactions and strategies for chemical synthesis*
 Source: FSU Research Foundation
 Award (Amount): FSU-BRIDGE (\$84,814)
 Role: PI
- 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)
 Role: PI
- 05/2011–08/2011 *Microwave-actuated organic reagents*
 Source: FSU Committee on Faculty Research Support (COFRS)
 Award (Amount): Faculty Summer Awards (\$14,000)
 Role: PI
- 04/2010–03/2011 *Developing scholar award*
 Source: FSU Council on Research Creativity (CRC)

- Award (Amount): Developing Scholars 2010 Award (\$10,000)
Role: PI
- 01/2008–12/2008 *Organic Reagents for Current and Future Markets*
Source: FSU Research Foundation
Award (Amount): GAP award (\$46,400)
Role: PI
 - 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)
Role: PI
 - 01/2004–12/2007 *Ring Expansion Strategies for Preparing Cyclophanes: Concise Syntheses of Roseophilin and Floresolide A*
Source: Research Corporation
Award (Amount): Research Innovation Award, RI1161 (\$35,000)
Role: PI
 - 06/2005–08/2007 *An Allene-Centered Pericyclic Reaction Sequence for the Synthesis of the Cyathane Diterpenes*
Source: American Chemical Society, Petroleum Research Fund
Award (Amount): PRF Type G, 42180-G1 (\$35,000)
Role: PI
 - 05/2004 *Synthesis of Cytotoxic Cyclophanes: Haouamine A*
Source: Oak Ridge Associated Universities
Award (Amount): Ralph E. Powe Junior Faculty Enhancement Award (\$10,000)
Role: PI
 - 05/2003–08/2003 *New Reagents for Organic Synthesis: Strained Silacycles*
Source: FSU Council for Research and Creativity (CRC)
Award (Amount): First Year Assistant Professor Award (\$12,000)
Role: PI

Expert Witness and Legal Consulting

Representative Reports:

- *Scientific analysis and opinion on the “substantially similar” standard for Prong One of the definition of Controlled Substance Analogues*
- *Summary of scientific opinion on chemical structures*
- *Expert opinion [on] the comparative pharmacology of JWH-018 and XLR-11*
- *4-ANPP and its structural relationship to fentanyl*
- *Affidavit on extraction of DMT from MHRB*
- *Sentencing guideline considerations for synthetic cannabinoids*
- *Expert evaluation / opinion regarding cocaine base isomers*
- *Evaluation of state and federal schedules of controlled substances*
- *Expert evaluation and opinions regarding opiate narcotic drug controlled substances in New York, New Jersey, and/or Federal law*
- *Isomers of cocaine and heroin under Michigan and Federal law*
- *Is dibutylone a “positional isomer” of pentylone?*
- *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

- Counsel of Record: Prof. Gerald M. Finkel, Charleston School of Law
<http://sblog.s3.amazonaws.com/wp-content/uploads/2015/03/14-378-tsac-Joseph-Bono.pdf>
- *Opinion testimony before the US Sentencing Commission*
 - Corresponding oral testimony at the public hearing on April 18, 2017 available at:
<https://www.ussc.gov/policymaking/meetings-hearings/public-hearing-april-18-2017>
- *Opinion testimony on synthetic cathinones for the public hearing on October 4, 2017*
 - Oral testimony available at:
<https://www.ussc.gov/policymaking/meetings-hearings/public-hearing-october-4-2017>

Expert witness and testimony experience:

47. United States Federal Court, Northern District of Ohio, Cleveland, 2022-12-21
Case 1:22-cr-00050-BYP: *Sentencing hearing for a criminal proceeding* (remote)
Defendant: Peter Dill Lowe
Provided expert testimony on fentanyl, fentanyl analogues, and 4-ANPP.
46. United States Federal Court, Eastern District of Michigan, Detroit, 2022-08-09
Case 2:20-cr-20449-PDB-APP: *Evidentiary hearing for a criminal proceeding*
Defendant: Robert Lee Taylor
Provided expert testimony on chemistry terminology related to isomers of cocaine.
45. United States Federal Court, Western District of Michigan, Grand Rapids, 2022-07-08
Case 1:21-cr-00034-PLM: *Sentencing hearing for a criminal proceeding* (remote)
Defendant: Delando Johnson
Provided expert testimony on chemistry terminology related to isomers of cocaine.
44. United States Senate Briefing, Washington, DC (virtual), 2022-06-10
Panel on Fentanyl-Related Substances, organized by Senator Cory Booker's office and the Drug Policy Alliance, to discuss policy considerations related to controlling substances that may be regarded as similar to fentanyl in chemical structure.
Video available at: <https://www.youtube.com/watch?v=myl6I3vLXb8>
43. United States Federal Court, Western District of Michigan, Grand Rapids, 2022-05-12
Case 1:21-cr-00042-JTN: *Evidentiary hearing for a criminal proceeding* (remote)
Defendant: Idris Quintell Wilkes
Provided expert testimony on chemistry terminology related to isomers of cocaine.
42. United States Federal Court, Western District of Michigan, Grand Rapids, 2022-02-04
Case 1:21-cr-00118-PLM: *Evidentiary hearing for a criminal proceeding* (remote)
Defendant: James Robinson
Provided expert testimony on chemistry terminology related to isomers of cocaine.
41. State of Florida 13th Judicial Circuit, Hillsborough County, 2021-03-04
Case No. 18-CF-007123-B: *Motion Hearing* (remote)
Defendant: Donya Kareem Hussein
Provided expert testimony and opinion on chemical composition of marijuana and synthetic marijuana as they may relate to detection by drug-sniffing dogs.
40. United States Federal Court, District of Nevada, Las Vegas, 2020-01-10
Case 2:15-cr-00285-APG-GWF: *Sentencing hearing for a criminal proceeding*
Defendant: Burton Ritchie
Provided expert testimony and opinion on the chemical structure and sentencing guideline considerations for synthetic cannabinoid substances including XLR-11.
39. United States Federal Court, Middle District of Florida, Tampa, 2019-08-27

- Case 8:13-cr-00269-JDW-CPT: *Sentencing hearing for a criminal proceeding*
Defendant: Mobashar Z. Tahir
Provided expert testimony and opinion on the chemical structures of synthetic cannabinoids including JWH-018, UR-144, and XLR-11 for considerations relevant to regulatory controls of controlled substances and controlled substance analogues.
38. United States Federal Court, Northern District of New York, Albany, 2019-08-20
Case 1:18-cr-00150-GLS: *Sentencing hearing for a criminal proceeding*
Defendant: Mansoor A. Ghaleb
Provided expert testimony and opinion on the chemistry, pharmacology, and sentencing guideline considerations for synthetic cannabinoids including AMB-FUBINACA (aka FUB-AMB) compared to actual marijuana and THC.
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
Provided 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.
36. United States Federal Court, Southern District of Florida, Miami, 2018-12-12
Case 1:17-CR-20904-Ungaro/O’Sullivan: *Sentencing hearing for a criminal proceeding*
Defendant: Danny Rodriguez
Provided expert testimony and opinion on the chemistry and pharmacology of synthetic cannabinoids including ADB-FUBINACA as compared to actual marijuana and THC.
35. United States Federal Court, Northern District of Georgia, Gainesville, 2018-10-10
Case 2:16-CR-032-03-RWS: *Sentencing hearing for a criminal proceeding*
Defendant: Lora Pace
Provided expert testimony and opinion on the preparation, composition, molecular structure and pharmacology, and effects on the central nervous system of the synthetic cannabinoids XLR-11, AB-CHMINACA, and FUB-AMB as ingredients of “synthetic marijuana” (aka smokeable synthetic cannabinoids) as compared to actual marijuana and THC.
34. United States Federal Court, Middle District of Florida, Jacksonville, 2018-09-28
Case 3:17-cr-00086-TJC-JRK: *Evidentiary Daubert-type hearing for a criminal proceeding*
Defendant: Kevin Clark
Provided expert testimony and opinion on the chemical structure, molecular pharmacology, and stimulant effects of MPHP as related to other stimulants including pyrovalerone, α -PVP, cocaine, and methamphetamine in connection to criminal indictment under the Controlled Substance Analogue Enforcement Act.
33. United States Federal Court, Eastern District of California, Fresno, 2018-06-28
15-cr-101-DAD: *Criminal trial by jury*
Defendant: Douglas Jason Way
Provided 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.
32. United States Federal Court, Northern District of Texas, Dallas, 2018-06-18
Case 3:14-cr-00298-M: *Daubert hearing for expert witnesses in a criminal proceeding*
Defendant: Gas Pipe, Inc.

Provided expert testimony and opinion on the synthetic cannabinoid substances AM-2201, XLR-11, JWH-250, and PB-22, which were alleged to be Controlled Substance Analogues of JWH-018; 5F-PB-22 and THJ-2201, which were alleged to be Controlled Substance Analogues of AM-2201; and FUB-PB-22, which was alleged to be a Controlled Substance Analogue of 5F-PB-22.

31. United States Federal Court, Middle District of Florida, Orlando, 2018-01-24
6:17-CR-165-Orl-40KRS-Byron: *Criminal trial by jury*
Defendant: Jeremy Achey
Provided expert testimony and opinion on the chemical structure of synthetic substances including 4-AcO-DMT and tetrahydrofuranlyl fentanyl, which were alleged to be Controlled Substance Analogues of psilocin and fentanyl, respectively.
30. United States Federal Court, Northern District of Texas, Dallas, 2017-12-21
Case 3:16-CR-00419-Fitzwater: *Sentencing hearing for a criminal proceeding*
Defendant: Gabrielle Armstrong
Provided expert testimony and opinion on the chemical structure of *N*-ethylpentylone (a structural analogue of pentylone) and its putative pharmacological effects (based on the structure-activity relationship in medicinal chemistry) relative to substances referenced in the Sentencing Guidelines for the purposes of sentencing considerations.
29. United States Sentencing Commission, Washington, DC, 2017-10-04
Review of Sentencing Guidelines: *Public hearing on synthetic cathinones*
Provided invited written opinion report and oral testimony on revisions to the Guidelines being considered in light of emerging synthetic cathinone drugs of abuse. Testimony included recommendations for specific and categorical coverage of cathinone drugs. Written report and video of panel testimony and discussion (Panel 3) available at the link provided below:
<https://www.ussc.gov/policymaking/meetings-hearings/public-hearing-october-4-2017>
28. United States Sentencing Commission, Washington, DC, 2017-04-18
Review of Sentencing Guidelines: *Public hearing on synthetic drugs*
Provided invited written opinion report and oral testimony on revisions to the Guidelines being considered in light of emerging synthetic drugs of abuse. Testimony included recommendations for improving the consistency and clarity of the Guidelines and for the addition of new synthetic cannabinoid and cathinone substances. Written report and video of panel testimony and discussion (Panel 5) available at the link provided below:
<http://www.ussc.gov/policymaking/meetings-hearings/public-hearing-april-18-2017>
27. United States Federal Court, Northern District of West Virginia, Clarksburg, 2017-03-27
Case 1:16-cr-00065-IMK-JES: *Daubert hearing for experts in a criminal proceeding*
Defendant: Graziano
Prepared expert testimony and opinion on the chemical structures of synthetic substances including UR-144, XLR-11, AB-FUBINACA, STS-135, and FUB-PB-22, which were alleged to be Controlled Substance Analogues (*plea agreement reached prior to hearing*).
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
Provided expert testimony and opinion on the chemical structure of synthetic cannabinoid, cathinone, and amphetamine substances including JWH-122, AM-2201, JWH-210, MAM-

- 2201, JWH-081, RCS-4, JWH-250, UR-144, XLR-11, MePPP, MXE, 5-MeO-DALT, pentedrone, 4-FMC, and 4-FA, which were alleged to be Controlled Substance Analogues.
25. United States Federal Court, Southern District of Florida, West Palm Beach, 2017-01-31
Case 2:16-14002-CR-Rosenberg: *Sentencing hearing for a criminal proceeding*
Defendant: Julius Reason
Provided expert testimony and opinion on the chemical structures of ethylone and dibutylone, the putative pharmacological effects of ethylone, and their respective similarities and differences with respect to substances referenced in the Sentencing Guidelines for the purposes of sentencing considerations.
24. United States Federal Court, Eastern District of Virginia, Norfolk, 2017-01-19
Case 4:15-cr-0018-Jackson: *Criminal trial by jury (re-trial after hung jury in October)*
Defendant: Burton Ritchie
Provided expert testimony and opinion on the chemical structure of synthetic cannabinoid substances including UR-144 and XLR-11, which were alleged to be Controlled Substance Analogues of JWH-018.
23. United States Federal Court, Eastern District of Virginia, Norfolk, 2016-10-14
4:15-cr-0018-Jackson: *Criminal trial by jury*
Defendant: Burton Ritchie
Provided expert testimony and opinion on the chemical structure of synthetic cannabinoid substances including UR-144 and XLR-11, which were alleged to be Controlled Substance Analogues of JWH-018.
22. United States Federal Court, District of New Jersey, 2016-10-13
Case 2:14-cr-00186-KSH: *Sentencing hearing for a criminal proceeding*
Defendant: Pedro Arroyo
Provided expert testimony and opinion on the chemical structure, pharmacological effects, and potency of the controlled substance, methylenedioxymethcathinone (methylone).
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
Provided expert testimony and opinion on the chemical structures of butylone and ethylone as to whether or not ethylone qualifies as a positional isomer of butylone based on various definitions of the term “positional isomer”.
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
Provided expert testimony and opinion on the preparation, chemical structure, molecular pharmacology, and effects on the central nervous system of the synthetic cannabinoids XLR-11 and AB-FUBINACA as ingredients of so-called “synthetic marijuana” or “Spice” as compared to actual marijuana and THC.
19. United States Federal Court, Southern District of Florida, West Palm Beach, 2016-05-20
Case 2:15-80068-CR-Rosenberg: *Sentencing hearing for a criminal proceeding*
Defendant: Kevin Raphael Bully
Provided expert testimony and opinion on the chemical structures of controlled substances methylenedioxyethcathinone (MDEC, ethylone) and α -pyrrolidinovalerophenone (α -PVP) and their respective similarities and differences with respect to substances referenced in the Guidelines Manual for the purposes of sentencing considerations.

18. United States Federal Court, Middle District of Florida, Tampa, 2016-05-18
Case 8:15-cr-00064-CEH-TBM: *Sentencing hearing for a criminal proceeding*
Defendant: Saher Abdullah
Provided expert testimony and opinion on the preparation, molecular pharmacology, and pharmacological effects of so-called “synthetic marijuana” containing the controlled substance XLR-11 as compared to marijuana and THC.
17. United States Federal Court, District of New Mexico, Santa Fe, 2016-05-10
Case 1:12-cr-001766 MCA: *Daubert hearing for expert witnesses in a criminal proceeding*
Defendant: Hussein Al-Omari
Prepared expert testimony and opinion on the chemical structure and pharmacological effects of synthetic substances including AM-2201, UR-144, 4-MEC, and α -PVP, which were alleged to be Controlled Substance Analogues (*charges dropped prior to hearing*).
16. United States Federal Court, Middle District of Florida, Ft. Myers, 2016-03-28
Case 2:15-cr-00004-SPC-CM: *Sentencing hearing for a criminal proceeding*
Defendant: Travis Riddle
Provided expert testimony and opinion on the controlled substance dimethyltryptamine (DMT): extraction from natural sources, methods of abuse, and pharmacological effects
15. United States Federal Court, District of Utah, Salt Lake City, 2016-02-29
Case 2:13-cr-00780-CW-DBP: *Daubert hearing for experts in a criminal proceeding*
Defendant: Muhammad Mansoor
Prepared expert testimony and opinion on the chemical structure and pharmacological effects of synthetic substances including AM-2201, JWH-122, MAM-2201, UR-144, XLR-11, and 5-MeO-DALT, which were alleged to be Controlled Substance Analogues (*charges dropped at the start of the hearing*).
14. United States Federal Court, Southern District of Florida, West Palm Beach, 2015-12-11
Case 2:15-cr-14034-DMM: *Sentencing hearing for a criminal proceeding*
Defendant: Saiful Hossain
Provided expert testimony and opinion on molecular pharmacology and pharmacological effects of so-called “synthetic marijuana” containing the controlled substance XLR-11 as compared to marijuana and THC
13. State of Florida 15th Judicial Circuit, Palm Beach County, 2015-11-05
Case No. 2013CF009053BMB: *Criminal trial by jury*
Defendant: William Sands
Provided expert testimony and opinion on substances alleged to be synthetic marijuana, and on the forensic detection and analysis of the controlled substance PB-22
12. United States Federal Court, Southern District of Florida, Miami, 2015-10-23
Case 2:15-20350-CR: *Sentencing hearing for a criminal proceeding*
Defendant: Mario Malespin
Provided expert testimony and opinion on the chemical structure, pharmacological effects, and potency of the controlled substance, methylenedioxyethcathinone (MDEC, ethylone)
11. United States Federal Court, District of New Mexico, Albuquerque, 2015-07-07
Case 1:13-cr-00571-MCA: *Daubert hearing for expert witnesses in a criminal proceeding*
Defendant: Nathan Coccimiglio

- Provided expert testimony and opinion on synthetic cannabinoid substances including AM-2201, AM-694, JWH-250, UR-144, and XLR-11, which were alleged to be Controlled Substance Analogues of JWH-018
10. United States Federal Court, Middle District of Florida, Tampa, 2015-05-05
Case 8:14-cr-00409-CEH-TBM: *Sentencing hearing for a criminal proceeding*
Defendant: Wagner Cruz
Provided expert testimony and opinion on the chemical structure, pharmacological effects, and potency of the controlled substance, methylenedioxyethcathinone (MDEC, ethylone)
 9. United States Federal Court, Middle District of Florida, Ft. Myers, 2015-04-28
Case 2:14-CR-79-FIM-38DNF: *Sentencing hearing for a criminal proceeding*
Defendant: Ferenc Palfalvi
Provided expert testimony and opinion on the chemical structure, pharmacological effects, and potency of the controlled substance, methylenedioxyethcathinone (MDEC, ethylone)
 8. United States Federal Court, Middle District of Florida, Tampa, 2015-01-27
Case 8:14-cr-00387-VMC-TBM: *Sentencing hearing for a criminal proceeding*
Defendant: Donald Reche Caldwell
Provided expert testimony and opinion on the chemical structure, pharmacological effects, and potency of the controlled substance, methylenedioxyethcathinone (MDEC, ethylone)
 7. United States Federal Court, District of Nevada, Las Vegas, 2014-12-03
Case 2:13-cr-00255-JAD-GWF: *Sentencing hearing for a criminal proceeding*
Defendant: Syvilay Thannavongsa
(telephonic testimony) Provided expert testimony and opinion on the chemical structure of the controlled substance, methylenedioxymethcathinone (MDMC, methylone)
 6. United States Federal Court, Middle District of Florida, Tampa, 2014-11-18
Case 8:13-cr-00421-MSS-TGW: *Sentencing hearing for a criminal proceeding*
Defendant: John McGuire
Provided expert testimony and opinion on the chemical structure of the controlled substance, methylenedioxymethcathinone (MDMC, methylone)
 5. United States Federal Court, Eastern District of New York, Brooklyn, 2014-08-20
Case 13CR00570 (JBW): *Sentencing hearing for a criminal proceeding*
Defendant: Chin Chong
(telephonic testimony) Provided expert testimony and opinion on the chemical structure of the controlled substance, methylenedioxymethcathinone (MDMC, methylone)
 4. United States Federal Court, District of Minnesota, Minneapolis, 2013-09-30
CASE 0:12-cr-00305-DSD-LIB: *Criminal trial by jury*
Defendant: James Robert Carlson
Provided expert testimony and opinion on the chemical structure and pharmacological effects of synthetic cannabinoid substances including AM-2201, UR-144, and XLR-11, which were alleged to be Controlled Substance Analogues of JWH-018
 3. State of Louisiana 22nd Judicial District Court, Parish of St Tammany, 2013-02-06
Case No. 524706/7 D: *Hearing on a motion to quash a criminal indictment*
Defendant: David D'Aquin
Provided expert testimony and opinion on the chemical structure and pharmacological effects of synthetic cannabinoid substances of UR-144 and XLR-11, which were alleged to be Controlled Substance Analogues of JWH-018

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
Provided 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
1. United States Federal Court, Middle District of Florida, Orlando, 2012-12-06
6:12-cr-209-Orl-37DAB: *Joint hearing on a motion to dismiss a criminal indictment and a petition for return of property*
Defendants: Ilan Fedida and Timothy Hummel
Attended the hearing and wrote a brief on scientific considerations for the Court