

CURRICULUM VITAE

L. NATHAN TUMEY, PH.D.

Assistant Professor
Binghamton University
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EDUCATION

Duke University, Durham, NC.

Ph.D., Organic chemistry, December 2001.

- Dissertation research with Professor Michael Pirrung.
- Certificate in Biological Chemistry (program emphasis)
- Dissertation title: "Medicinal chemistry and high throughput synthesis of inhibitors of lipid A biosynthesis."

King College, Bristol, TN.

B.S., *Summa cum laude*, May 1997. Double major, Chemistry and Biology. Minor, Computer Science.

PROFESSIONAL EXPERIENCE

2022-present	Associate Professor , Binghamton University School of Pharmacy and Pharmaceutical Sciences, Binghamton, NY -Assistant Graduate Director (2022-present) -Courtesy appointment in Chemistry Dept. (2021-present) -Courtesy appointment in Biomedical Engineering (2018-present)
2017-2022	Assistant Professor , Binghamton University School of Pharmacy and Pharmaceutical Sciences, Binghamton, NY
2010-2017	Associate Research Fellow , Pfizer, Groton, CT
2005-2010	Principal Research Scientist , Wyeth Research, Pearl River, NY
2002-2005	Senior Scientist , Athersys Inc., Cleveland, OH
2000-2001	Organic Chemistry Instructor , Kaplan MCAT prep class, Durham, NC
1997-2001	Graduate Assistant , Mentor: Dr. Michael Pirrung, Duke University Department of Chemical Sciences, Durham NC

CONSULTING, ADVISORY, AND LEADERSHIP EXPERIENCE

Expert Witness and Legal Consulting:

Quinn Emmanuel LLP (2021-present)

Latham and Watkins LLP (2021-present)

Professional consulting work:

Heidelberg Pharma (2022-present)

OnCusp Therapeutics (2022-present)

Ardeagen (2021-present)

Bighat Biosciences (2021-2022)

Iksuda Therapeutics (2021-2022)

Synthesis Inc (2019-present)

Loxo Oncology / Eli Lilly (2020-present)

Takeda Pharmaceuticals (2017-2021)

ImmuNext Biopharma (2018-2019)

Cue Biopharma (2018-2019)

Vertex Pharmaceuticals (2019)

Angiex Pharmaceuticals (2018-2020)

GIMV NV (2019)

Pontifax (2019-2020)

Scientific advisory board member,

Araris Biotech AG (2019-present)

Manhattan Biosolutions (2022-present)

Scientific leadership roles:

2022, chair, "Next Generation Payloads" symposium at ADC World Summit.

2022, NIH grant review panel, Gene and Drug Delivery (GDD), ad hoc member. (Oct 25-26, 2022)

2020, NIH grant review panel, Synthetic and Biological Chemistry A (SBCA), ad hoc member. (October 13-14, 2020)

2014-2017, Bioconjugation Network Leadership Team (Pfizer, Inc)

2014, Co-chair, Bioconjugation Summit (Pfizer, Inc)

2015, Chair, Bioconjugation Summit (Pfizer, Inc)

2014-2017, Bioconjugation Network Leadership Team (Pfizer, Inc)

RESEARCH INTERESTS

Targeted drug delivery; Antibody-drug conjugates (ADCs); Auto-immune disease; Oncology medicinal chemistry; Small molecule drug discovery; Immuno-oncology; Drug metabolism/DMPK; Bioanalytical chemistry; Mass spectroscopy.

PRIVATE SECTOR (PHARMACEUTICAL) WORK EXPERIENCE

Associate Research Fellow, Pfizer, Groton, CT (March 2010-January 2017)

Oncology Medicinal Chemistry, ADC bioconjugation.

- Led a small team of synthetic and bioanalytical scientists that design and synthesize antibody-drug conjugates for use in oncology applications. Prepared bioconjugates for *in vitro* and *in vivo* evaluation.
- Optimized conjugation conditions in order to result in conjugates with minimal aggregation and maximal drug-loading. Developed a variety of bioanalytical methods to assess the purity, identity, and stability of preclinical antibody-drug-conjugates in the Pfizer portfolio. Coordinated across sites and departments to harmonize analytical methods and analytical requirements in order to facilitate technology transfer and data analysis.
- Developed patenting strategies to protect key inventions while simultaneously building the visibility of the team through aggressive external publication and presentation strategies.
- Implemented the use of site-specific conjugation techniques to solve metabolic, synthetic, analytical, and stability issues. Worked with biochemists, biologists, and DMPK scientists to better understand the impact of conjugation site on efficacy and PK.
- Served as the chemistry team leader on multiple ADC programs. Worked with key members of the team to decide on ADCs for advancement into PK, efficacy, and toxicology studies.
- Worked with a small team of scientists and IT specialists to establish an informatics system to track ADCs across Pfizer.
- Mentored three direct reports (2 PhD and 1 MS) and a summer intern (BS).

Principal Research Scientist, Wyeth Research, Pearl River, NY (2005-2010)

Chemistry team leader (2008-2009), IRAK4 kinase program (inflammation)

Chemistry team member (2005-2008), PKC θ (inflammation)

- Coordinated efforts of multiple medicinal chemists across two sites ensuring that each individual had an adequate understanding of the project and had appropriate molecular targets/goals. Directly supervised the synthetic chemistry efforts of three chemists and led an outsourced team of five chemists.
- Responsible for managing and prioritizing all secondary assay requests including DMPK studies, *in vivo* efficacy studies, pharmaceutical properties screening, and selectivity screening.
- Worked with team members to identify strategies to address issues with kinase selectivity, DNA binding, pgp efflux, permeability, *in vitro* metabolism, and drug physical properties. Collaborated with scientists from enzymology, analytical chemistry, DMPK, and pharmaceutical profiling in order to study these issues.
- Represented the project to the management team. Responsible for maintaining project timelines and ensuring the meeting of key deliverables.
- Responsible for establishing and maintaining an intellectual property (IP) position around each lead series. Worked with company attorneys and research librarians in order to evaluate related prior art.

Senior Scientist, Athersys Inc., Cleveland, OH (2002-2005)

- Designed two novel series of CRTH2 antagonists based on literature precedent and competitor's compounds. Synthesized numerous analogs and libraries in order to establish key SAR. Lead inventor on two patent applications claiming these series.
- Designed and synthesized selective agonists of 5HT_{2C} for use in obesity and related disorders resulting in multiple patent applications. Established SAR that led to

agonists with excellent selectivity (>100x) over 5HT2A/2B and exhibited good oral bioavailability.

- Responsible for hit-to-lead evaluation, lead-optimization, and molecular design/synthesis.
- Directly supervised two associate chemists.

GRANT FUNDING (active) – total: \$2,612,592 (direct+indirect)

Heidelberg Pharma 12/2022-12/2024
“Optimization of TLR7 Agonist ADCs for the treatment of Cancer”
Total direct costs: \$285,075 (+\$162,493 indirect)
Role: PI

NIH R01 GM144450-01 02/2022-12/2025
“Legumain to the rescue: A new ADC linker strategy to address the limitations of cathepsin cleavage”
Total direct costs: \$800,000 (+\$412,224 indirect)
Role: PI (collaboration with Tracy Brooks)

NIH R01 GM140026-01A1 08/2021-08/2025
“Exploiting the Hydrophobic Glycosyl Pocket of IgG1 for Imaging and Drug Delivery Applications”
Total direct costs: \$800,000 (+\$434,112 indirect)
Role: PI (collaboration with Tracy Brooks and Fake Lu)

NIH R15 AI149755-01 01/2020-01/2023
“Cell-specific blockage of TLR activation: A new strategy for addressing inflammatory disorders.”
Total direct costs: \$300,000 (+\$150,480 indirect)
Role: PI (sole investigator)

NIH R15 CA249793-01, NIH/NCI 07/2020-07/2023
““Synthesis and optimization of antibody:DNAi conjugates targeting the MYC G4”
Total direct costs: \$300,000 (+\$171,000 indirect)
Role: Co-I (PI is Tracy Brooks)

NIH R03 AI156696-01A1 06/2021-06/2023
“Molecular whack-a-mole: Targeting transmembrane-TNFα for the delivery of anti-inflammatory drugs.”
Total direct costs: \$100,000. (+\$57,000 indirect)
Role: PI (sole investigator)

GRANT FUNDING (completed) – total: \$284,738 (direct+indirect)

Binghamton University XCEED Technology Accelerator (ED19HDQ0200038)
09/2021-12/2021
“Development of TLR-activating ADC technology”
Total direct costs: \$24,000.

Role: PI

Synthis Inc., Award 90784

04/2021-07/2021

“Analysis of cell lysate” (testing agreement)
Total direct costs: \$13,816 (+\$3,454 indirect)
Role: PI (sole investigator)

Takeda Pharmaceuticals, Award 83181

11/2018-04/2020

“The identification of lysosomal-selective proteolytically cleavable linkers”
Total direct costs: \$162,217 (+\$95,251 indirect)
Role: PI (sole investigator)

Binghamton University Translational Areas of Excellence.

06/2018-06/2019

“Understanding Antibody-Drug Conjugate (ADC) Internalization Via Stimulated Raman Scattering (SRS) Imaging of Alkyne-Tags in Live Cancer Cells”.
Total direct costs: \$10,000
Role: Co-I (collaboration with Fake Lu / BME)

ORIGINAL ARTICLES, REVIEWS, AND BOOK CHAPTERS

***Indicates corresponding author**

BOOK CHAPTERS

“ADC Linker Strategies for the Release of Alcohol-Containing Payloads”, Miller, Jared T., **Tumey, L. Nathan***, Chemical Linkers in Antibody-Drug Conjugates (ADCs); Royal Society of Chemistry; **2021**, pg 232-262.

“The design and development of antibody-drug conjugates (ADCs) for the treatment of cancer”, **Tumey, L. Nathan***, Burger’s Medicinal Chemistry, Drug Discovery and Development; Wiley Publishing, **2021**.
<https://doi.org/10.1002/0471266949.bmc283>

“An overview of the current ADC discovery landscape”, **Tumey, L. Nathan***, Methods in Molecular Biology, Springer Publishing, **2019**, 1-22.

“Detection and Removal of Small-Molecule and Endotoxin Contaminants in ADC Preparations”, Casavant, Jeffery*; Ratnayake, Anokha S.; Puthenveetil, Sujiet; **Tumey, L. Nathan**, Methods in Molecular Biology, Springer Publishing, **2019**, 291-299.

“Next generation payloads for ADCs” (book chapter), **L. Nathan Tumey***, Springer Publishing, “Innovations for Next-Generation Antibody-Drug Conjugates”, **2018**.

PEER REVIEWED PUBLICATIONS

2023

2022

“Evaluation of an ester-linked immunosuppressive payload: A case study in understanding the stability and cleavability of ester-containing ADC linkers”, Courtney P. Jackson, Siteng Fang, Samantha R. Benjamin, Tchilabalo Alayi,

Yetrib Hathout, Sarah M. Gillen, Jillian P. Handel, Brittany M. Brems, Justin M. Howe, **L. Nathan Tumey***; Bioorganic and Medicinal Chemistry Letters, 75, **2022**. DOI: 10.1016/j.bmcl.2022.128953

“Design and Characterization of Immune-Stimulating Imidazo[4,5-c]quinoline Antibody-Drug Conjugates”, Siteng Fang, Brittany M Brems, Emmanuel O Olawode, Jared T Miller, Tracy A Brooks, **L Nathan Tumey***; Molecular Pharmaceutics, 2022, 19, 9, 3228–3241.
<https://doi.org/10.1021/acs.molpharmaceut.2c00392>

“Indoloquinoline-Mediated Targeted Downregulation of KRAS through Selective Stabilization of the Mid-Promoter G-Quadruplex Structure”, AM Psaras, RK Carty, JT Miller, LN Tumey, TA Brooks; Genes **2022**, 13 (8), 1440

2021

“Enzyme-Agnostic Lysosomal Screen Identifies New Legumain-Cleavable ADC Linkers”, Jared T Miller, Caitlin N Vitro, Siteng Fang, Samantha R Benjamin, **L Nathan Tumey***; Bioconjugate Chemistry, **2021**, 32, 4, 842-858. DOI: <https://doi.org/10.1021/acs.bioconjchem.1c00124>

“Development of Highly Optimized Antibody–Drug Conjugates against CD33 and CD123 for Acute Myeloid Leukemia”, Yoon-Chi Han, Jennifer Kahler, Nicole Piché-Nicholas, Wenye Hu, Stephane Thibault, Fan Jiang, Mauricio Leal, Madan Katragadda, Andreas Maderna, Russell Dushin, Nadira Prashad, Manoj B Charati, Tracey Clark, **L Nathan Tumey**, Xingzhi Tan, Andreas Giannakou, Edward Rosfjord, Hans-Peter Gerber, Lioudmila Tchistiakova, Frank Loganzo, Christopher J O'Donnell, Puja Sapra, Clinical Cancer Research, **2021**, 27(2), 622-631. DOI: 10.1158/1078-0432.CCR-20-2149

“Chemical and Physical Stability of an Admixture Containing Cefepime and Vancomycin in Lactated Ringer Solution”, Pegah Shakeraneh, Risako Robinson, Wesley D Kufel, L Nathan Tumey, Samantha R Benjamin, Christopher D Miller, William Darko, Luke A Probst, Robert W Seabury; Hospital Pharmacy; 2021; <https://doi.org/10.1177/0018578719901278>.

2020

“PF-06804103, A Site-specific Anti-HER2 Antibody–Drug Conjugate for the Treatment of HER2-expressing Breast, Gastric, and Lung Cancers”; Edmund I Graziani, Matthew Sung, Dangshe Ma, Bitha Narayanan, Kimberly Marquette, Sujiet Puthenveetil, **L Nathan Tumey**, Jack Bikker, Jeffrey Casavant, Eric M Bennett, Manoj B Charati, Jonathon Golas, Christine Hosselet, Cynthia M Rohde, George Hu, Magali Guffroy, Hadi Falahatpisheh, Martin Finkelstein, Tracey Clark, Frank Barletta, Lioudmila Tchistiakova, Judy Lucas, Edward Rosfjord, Frank Loganzo, Christopher J O'Donnell, Hans-Peter Gerber, Puja Sapra; Molecular Cancer Therapeutics, **2020**, 19, 10, 2068-2078. DOI: 10.1158/1535-7163.MCT-20-0237

“Expanding the Versatility of Microbial Transglutaminase Using α -Effect Nucleophiles as Noncanonical Substrates.” Tak Ian Chio; Breanna R. Demestichas; Brittany M. Brems; Susan L. Bane*; **L. Nathan Tumey***, Angew. Chemie, 59, 13814–13820 **2020**. (co-corresponding authors) DOI: 10.1002/anie.202001830

2019

“Case report: Albendazole associated psychosis”, Doughty, Bennett; **Tumey, L. Nathan**; Williams, Karen; Mental Health Clinician, November 2019, 9, 6, 397-400. DOI: 10.9740/mhc.2019.11.397

“Thiolation of Q295: Site-specific conjugation of hydrophobic payloads without the need for genetic engineering”, Benjamin, Samantha R.; Jackson, Courtney P.; Fang, Siteng; Carlson, Dane P.; Guo, Zhongyuan; **Tumey, L. Nathan***, Molecular Pharmaceutics, 2019, 16,6, 2795-2807. DOI: 10.1021/acs.molpharmaceut.9b00323

“Site-Specific Bioconjugation and Multi-Bioorthogonal Labeling via Rapid Formation of a Boron–Nitrogen Heterocycle”, Choi, Tak Ian; Gu, Han; Mukherjee, Kamalika; Tumey, **L. Nathan Tumey***; Bane, Susan L. * (co-corresponding authors), Bioconjugate Chemistry, 2019, 30, 5, 1554-1564. DOI: 10.1021/acs.bioconjchem.9b00246

“Natural Product Bis-Intercalator Depsipeptides as a New Class of Payloads for Antibody-Drug Conjugates”, Ratnayake, Anokha S.*; Chang, Li-ping; **Tumey, L. Nathan**; Loganzo, Frank; Chemler, Joseph A.; Wagenaar, Melissa; Musto, Sylvia; Li, Fengping; Janso, Jeffrey E.; Ballard, T. Eric; Rago, Brian; Steele, Greg L.; Ding, WeiDong; Feng, Xidong; Hosselet, Christine; Buklan, Vlad; Lucas, Judy; Koehn, Frank E.; O'Donnell, Christopher J.; Graziani, Edmund I., Bioconjugate Chemistry, 2019, 30(1), 200-209. DOI:10.1021/acs.bioconjchem.8b00843

“Novel PIKK inhibitor antibody-drug conjugates: Synthesis and anti-tumor activity”, Zhou, Dahui*; Casavant, Jeffrey; Graziani, Edmund I.; He, Haiyin; Janso, Jeffrey; Loganzo, Frank; Musto, Sylvia; **Tumey, Nathan**; O'Donnell, Christopher J.; Dushin, Russell, Bioorganic & Medicinal Chemistry Letters, 2019, 29(7), 943-957. DOI:10.1016/j.bmcl.2019.01.009

2017

“Thinking Small and Dreaming Big: Medicinal Chemistry Strategies for Designing Optimal ADCs”, **L. Nathan Tumey***, *Medicinal Chemistry Reviews*, Chapter 19, 2017, 52, 363-379.

“Site selection: A case study in the identification of optimal cysteine engineered ADCs.”, **L. Nathan Tumey***, Fengping Li, Brian Rago, Xiaogang Han, Frank Loganzo, Sylvia Musto, Edmund I. Graziani, Sujiet Puthenveetil, Jeffrey Casavant, Kimberly Marquette, Tracey Clark, Jack Bikker, Eric M. Bennett, Frank Barletta, Nicole Piche-Nicholas, Amy Tam, Christopher J. O'Donnell, Hans Peter Gerber, and Lioudmila Tchistiakova; *AAPS Journal*, 2017, 19(4), 1123-1135.

“Quantitative Conjugated Payload Measurement Using Enzymatic Release of Antibody-Drug Conjugate with Cleavable Linker.”, Brian Rago, **L. Nathan Tumey**, Cong Wei, Frank Barletta, Tracey Clark, Steve Hansel, and Xiaogang Han*; *Bioconjugate Chemistry*, 2017, 28(2), 620-626.

“ADME Considerations for the Development of Biopharmaceutical Conjugates Using Cleavable Linkers”, **L. Nathan Tumey*** and Sean Han, *Current Topics in Medicinal Chemistry*, 2017, 17(32), 3444-3462.

“Multivalent peptidic linker enables identification of preferred sites of conjugation for a potent thialanstatin antibody drug conjugate”, Puthenveetil, Sujiet*; He, Haiyin; Loganzo, Frank; Musto, Sylvia; Teske, Jesse; Green, Michael; Tan, Xingzhi;

Hosselet, Christine; Lucas, Judy; **Tumey, L. Nathan**; Sapra, Puja; Subramanyam, Chakrapani; O'Donnell, Christopher J.; Graziani, Edmund I, 2017, *PLoS One*, 12(5), e0178452/1-e0178452/16.
DOI:10.1371/journal.pone.0178452

2016

- “Optimization of Tubulysin Antibody-Drug-Conjugates: A Case Study in Addressing ADC Metabolism”, **L. Nathan Tumey***, Carolyn A. Leverett, Beth Vetelino, Fengping Li, Brian Rago, Xiaogang Han, Frank Loganzo, Sylvia Musto, Guoyun Bai, Sai Chetan K. Sukuru, Edmund I. Graziani, Sujiet Puthenveetil, Jeffrey Casavant, Anokha Ratnayake, Kimberly Marquette, Sarah Hudson, Venkata Ramana Doppala-pudi, Joseph Stock†, Lioudmilla Tchistiakov, Andrew J. Bessire, Tracey Clark, Judy Lucas, Christine Hosselet, Christopher J. O'Donnell, and Chakrapani Subramanyam; *ACS Medicinal Chemistry Letters*, 2016, 7(11), 977-982. **[Selected as cover article for November 2016 edition]**
- “Calculated conjugated payload from immunoassay and LC-MS intact protein analysis measurements of antibody-drug conjugate”, Brian Rago, Tracey Clark, Lindsay King, Jenny Zhang, **L. Nathan Tumey**, Fengping Li, Frank Barletta, Cong Wei, Mauricio Leal, Steve Hansel*, & Xiaogang Han; *Bioanalysis*, 2016, 8(21), 2205-2217.
- “Natural Product Splicing Inhibitors: A New Class of Antibody-Drug Conjugate (ADC) Payloads”, Puthenveetil, Sujiet*; Loganzo, Frank; He, Haiyin; Dirico, Ken; Green, Michael; Teske, Jesse; Musto, Sylvia; Clark, Tracey; Rago, Brian; Koehn, Frank; Veneziale, Robert; Falahaptisheh, Hadi; Han, Xiaogang; Barletta, Frank; Lucas, Judy; Subramanyam, Chakrapani; O'Donnell, Christopher J.; **Tumey, L. Nathan**; Sapra, Puja; Gerber, Hans Peter; Ma, Dangshe; Graziani, Edmund I; *Bioconjugate Chemistry*, 2016, 27(8), 1880-1888.
- “Where Did the Linker-Payload Go? A Quantitative Investigation on the Destination of the Released Linker-Payload from an Antibody-Drug Conjugate with a Maleimide Linker in Plasma”, Wei, Cong*; Zhang, Guodong; Clark, Tracey; Barletta, Frank; **Tumey, L. Nathan**; Rago, Brian; Hansel, Steven; Han, Xiaogang; *Analytical Chemistry*, 2016, 88(9), 4979.
- “Development of Solid-Phase Site-Specific Conjugation and Its Application toward Generation of Dual Labeled Antibody and Fab Drug Conjugates”, Puthenveetil, Sujiet*; Musto, Sylvia; Loganzo, Frank; **Tumey, L. Nathan**; O'Donnell, Christopher J.; Graziani, Edmund; *Bioconjugate Chemistry*, **2016**, 27(4) 1030.

2015

- “In vivo biotransformations of antibody-drug conjugates”, **Tumey, L. Nathan**; Rago, Brian; Han, Xiaogang*; *Bioanalysis*, 2015, 7(13), 1649.

2014

- “Mild method for succinimide hydrolysis on ADCs: Impact on ADC potency, stability, exposure, and efficacy”, **L. Nathan Tumey***, Manoj Charati, Tao He, Eric Sousa, Dangshe Ma, Xiaogang Han, Tracey Clark, Jeff Casavant, Frank Loganzo, Frank Barletta, Judy Lucas, and Edmund I. Graziani; *Bioconjugate Chemistry*, 2014, 25(10), p1871-1880.

“Identification and optimization of indolo[2,3-c]quinoline inhibitors of IRAK4” **Tumey, L. Nathan***; Boschelli, Diane H.; Bhagirath, Niala; Shim, Jaechul; Murphy, Elizabeth A.; Goodwin, Deborah; Bennett, Eric M.; Wang, Mengmeng; Lin, Lih-Ling; Press, Barry; Shen, Marina; Frisbie, Richard K.; Morgan, Paul; Mohan, Shashi; Shin, Julia; Rao, Vikram R., *Bioorganic and Medicinal Chemistry Letters*, 2014, 24, 2066-2072.

2013

“Recent advances in antibody-drug conjugates” Graziani, Edmund I.*; **Tumey, L. Nathan**, *RSC Drug Discovery Series*, 2013, 36 (Biotherapeutics), 145-175.

2012

“CRTH2 antagonists” **Tumey, L. Nathan*** *RSC Drug Discovery Series*, 2012, 26 (Anti-Inflammatory Drug Discovery), 104-134.

2009

“5-Vinyl-3-pyridinecarbonitrile inhibitors of PKC θ : Optimization of enzymatic and functional activity.”, **Tumey, L. Nathan***; Bhagirath, Niala; Brennan, Agnes; Brooijmans, Natasja; Lee, Julie; Yang, Xiaoke; Boschelli, Diane H., *Bioorg. Med. Chem.*, 2009, 17, 7933-7948.

“First generation 5-vinyl-3-pyridinecarbonitrile PKC- θ inhibitors”, Niu, Chuansheng; Boschelli, Diane H.; **Tumey, L. Nathan**; Bhagirath, Niala; Subrath, Joan; Shim, Jaechul; Wang, Yan; Wu, Biqi; Eid, Clark; Lee, Julie; Yang, Xiaoke; Brennan, Agnes; Chaudhary, Divya, *Bioorg. Med. Chem. Lett.*, 2009, 19(20), 5829-5832.

2008

“2-Alkenylthieno[2,3-b]pyridine-5-carbonitriles: Potent and selective inhibitors of PKC- θ ”, **Tumey, L. Nathan***; Boschelli, Diane H.; Lee, Julie; Chaudhary, Divya. *Bioorg. Med. Chem. Lett.*, 2008, 18(15), 4420-4423.

“A facile, scalable preparation of 4-oxo-4,7-dihydrothieno[2,3-b]pyridine-5-carbonitriles”, **Tumey, L. Nathan**; Bhagirath, Niala; Wu, Biqi; Boschelli, Diane H., *Tetrahedron Lett.*, 2008, 49(48), 6850-6852.

2005

“Isosteric ramatroban analogs: selective and potent CRTH-2 antagonists.”, Robarge, Michael J.; Bom, David C.; **Tumey, L. Nathan**; Varga, Norbert; Gleason, Elizabeth; Silver, Daniel; Song, Jianping; Murphy, Steven M.; Eckema, George; Doucette, Chris; Hanniford, Doug; Palmer, Marc; Pawlowski, Gary; Danzig, Joel; Loftus, Margaret; Hunady, Karen; Sherf, Bruce A; Mays, Robert W; Stricker-Krongrad, Alain; Brunden, Kurt R; Harrington, John J; Bennani, Youssef L, *Bioorg. Med. Chem. Lett.* 2005, 15(6), 1749-1753.

“The identification and optimization of a N-hydroxy urea series of flap endonuclease 1 inhibitors”, **Tumey, L. N.***; Bom, D.; Huck, B.; Gleason, E.; Wang, J.; Silver, D.; Brunden, K.; Boozer, S.; Rundlett, S.; Sherf, B.; Murphy, S.; Dent, T.; Leventhal, C.; Bailey, A; Harrington, J; Bennani, Y. L.”, *Bioorg. Med. Chem. Lett.* 2005, 15(2), 277-81.

2004

“The identification and optimization of 2,4-diketobutyric acids as flap endonuclease 1 inhibitors”, **Tumey, L.N.***; Huck, B.; Gleason, E.; Wang, J.; Silver, D.; Brunden, K.; Boozer, S.; Rundlett, S.; Sherf, B.; Murphy, S.; Bailey, A.; Dent, T.; Leventhal, C.; Harrington, J.; Bennani, Y.L., *Bioorg. Med. Chem. Lett.*, 2004, 14(19), 4915-8.

2003

“High-Throughput Catch-and-Release Synthesis of Oxazoline Hydroxamates. Structure-Activity Relationships in Novel Inhibitors of *Escherichia coli* LpxC: In Vitro Enzyme Inhibition and Antibacterial Properties”, Pirrung, M. C.; **Tumey, L.N.**; McClerren, A. L.; Raetz, C. R. H., *J. Am. Chem. Soc.*, 2003, 125 (6), 1575-1586.

2002

“Inhibition of the antibacterial target UDP-(3-O-acyl)-N-acetylglucosamine deacetylase (LpxC): isoxazoline zinc amidase inhibitors bearing diverse metal binding groups”, Pirrung, M.C.; **Tumey, L.N.**; Raetz, C.R.; Jackman, J.E.; Snehathatha, K.; McClerren, A.L.; Fierke, C.A.; Gantt, S.L.; Rusche, K.M., *J. Med. Chem.*, 2002, 45(19), 4359-70.

“19F-Encoded Combinatorial Libraries: Discovery of Selective Metal Binding and Catalytic Peptoids”, Michael C Pirrung; Kaapjoo Park; L Nathan Tumey, *J. Comb. Chem.*, **2002**, 4, 4, 329-344.

2000

“Antibacterial agents that target lipid A biosynthesis in gram-negative bacteria. Inhibition of diverse UDP-3-O-(r-3-hydroxymyristoyl)-n-acetylglucosamine deacetylases by substrate analogs containing zinc binding motifs.”, Jackman JE; Fierke CA; Tumey LN; Pirrung M; Uchiyama T; Tahir SH; Hindsgaul O; Raetz CR., *J. Biol. Chem.*, **2000**, 275(15), 11002-9.

“Oxazoline Synthesis from Hydroxyamides by Resin Capture and Ring-Forming Release”, Michael C. Pirrung; L. Nathan Tumey, *J. Comb. Chem.*, **2000**, 2, 6, 675-680.

EDITORIAL / PEER REVIEW / REFEREE EXPERIENCE

Book Editor:

Springer, Method in Molecular Biology, “Antibody-Drug Conjugates: Methods and Protocols”. Publishing date: Fall 2019. Served as lead editor for this 26-chapter volume. Authored two of the chapters.

Referee service: (typically ~10 per year)

ACS Medchem Letters,
Bioconjugate Chemistry
Protein Engineering, Design, and Selection
Molecular Cancer Therapeutics
Analytical Chemistry
Pharmaceutical Medicine
ACS Omega
Currents in Pharmacy Teaching and Learning (CPTL)
Angewandte Chemie

External examiner, PhD thesis Committee (outside of Binghamton University)
S. R. Shindi, external examiner (thesis committee) – PhD pharmaceutical sciences,
2022, University of Kwazulu-Natal (Nigeria)

PROFESSIONAL AFFILIATIONS

American Chemical Society (1995-present)
American Association of Pharmaceutical Sciences (2017-present)
American Associate of Colleges of Pharmacy (2017-2019)
Society for the Immunotherapy of Cancer (SITC) (2022-present)

TEACHING EXPERIENCE

PHRM501 “Foundations of Pharmacology”. Delivered ~15 hours of lectures plus one group “case study” and multiple review sessions. Content: Medicinal chemistry, drug design, drug metabolism.

Delivered: Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021

PHRM515 “Pharmaceutics II: Dosage Forms and Drug Delivery”. Delivered 9 hours of lectures plus 3h of review sessions. Content: Parenteral drug delivery, dispersed systems.

Delivered: Spring 2018

PHRM522 “Integrated Pharmacotherapy IV: Endocrine, Renal and Reproductive Health”. Delivered ~7 hours of lectures plus various review sessions. Content: Medicinal chemistry of diabetic drugs, glucocorticoids, mineralocorticoids, diuretics, birth control, PBH, and erectile dysfunction.

Delivered: Fall 2018, Fall 2019 [*co-coordinator*], Fall 2020

PHRM524 “Integrated Pharmacotherapy VI: Infections Diseases”. Delivered ~15 hours of lecture and active learning activities. Content: Medicinal chemistry and pharmacology of antiviral agents, antifungal agents, and antibacterial agents.

Delivered: Spring 2019, spring 2020, spring 2021

PHRM523 “Integrated pharmacotherapy V: Neurology, Psychiatry, Anesthesiology”. Delivered ~2 hours of lectures. Content: Medicinal chemistry of drugs for multiple sclerosis and Alzheimer’s disease.

Delivered: Spring 2019

PHRM542 “Integrated Pharmacotherapy VIII: Hematology / Oncology / Autoimmune Diseases” Delivered ~13 hours of lectures plus various review sessions. Content: Medicinal chemistry of immunomodulating agents and chemotherapeutic agents.

Delivered: Fall 2019, Fall 2020, Fall 2021

PHRM580E “Drug discovery and development”. *Course designer / coordinator*.

Content: Delivered ~15h of lectures and active learning. Coordinated all guest lectures, exams, and projects. Instructor of record.

Delivered: Fall 2020

UNIV101S “Science, Faith, and Ethics”. [Class delivered for Harpur College] Delivered ~15 hours of lectures and class activities. Content: Philosophy of science, ethical theories, and history of science and faith. *Course designer / coordinator*.

Delivered: Fall 2019

BME442/542 “Nanotechnology and Drug Delivery” [Class in Watson], delivered ~5h of lectures each year on pharmacokinetics and pharmacodynamics. *Guest lecturer.*
Delivered: Fall 2020, Fall 2021

MENTORSHIP OF STUDENTS AND POSTDOCTORAL FELLOWS [@BINGHAMTON]

Year	Name	Program of study	Outcome / current position
2017-2019	Courtney Jackson	-Undergraduate independent study -Completed honors thesis -Pharmacy School Summer Intern Program (full time)	PharmD candidate, UNC Chapel Hill
2017-2020	Tak Ian Choi	PhD student (co-mentor)	Postdoctoral fellow, U. Penn.
2018	Zhongyuan “Lenny” Guo	Postdoctoral Fellow	Postdoctoral fellow, Harvard School of Public Health
2018-2019	Dane Carlson	MS Student (BME)	R&D associate, Regeneron Pharmaceuticals
2018-2020	Emanuel Oladwode	Postdoctoral Fellow	Assistant Professor of Pharmaceutical Sciences
2018-2020	Kelsey Watts	Undergraduate independent study	Scientific writer, Regeneron Pharmaceuticals
2018-2021	Jared Miller	-Undergraduate independent study -Completed honors thesis -Summer researcher (full time)	PhD candidate at Scripps Research Institute
2018-present	Siteng Fang	PhD Student, BME	Current student
2019-2021	Caitlin Vitro	-Undergraduate independent study -Completed honors thesis -Summer researcher (full time)	PhD candidate at UNC Chapel Hill
2019-2021	Brittany Bremms	-Undergraduate independent study -Completed Honors thesis -Summer researcher (full time)	PhD candidate at Northeastern University
2019-2021	James “JP” Maher	PharmD student researcher	PharmD graduate
2019	Sarah Gillen	NSF REU student	Engineer at

			MedTronic
2019	Jared Frick	Undergraduate independent study	Medical Student at Albany College of Medicine
2020-2021	Rhea Johns	MS Student (BME)	PhD candidate, Virginia Tech
2020-2022	Katherine J Leong	-Undergraduate independent study -Pharmacy School Summer Intern Program (full time)	Researcher at New York Blood Center
2020-present	Samantha Benjamin	PhD Student, Chemistry	Current student
2021-2022	Daniel Wheeler	-Undergraduate independent study -Summer researcher (full time) -Summer Scholars and Artists Program (2021)	Current student
2021-2022	Caleb Manheim	Undergraduate independent study	MS student at Binghamton University
2021-present	Emma DeYoung	-Undergraduate independent study -Summer researcher (full time)	Current student
2020-2022	Justin M Howe	-Undergraduate independent study -Summer researcher (full time) -Summer Scholars and Artists Program (2020)	Medical student at Virginia Tech Carilion School of Medicine
2021	Sophia Cook	NSF REU student	Student at Rowan University
2021-2022	Jillian P. Handel	-Undergraduate independent study	MS Student at Binghamton University (PharmSci)
2022	Karina Zielenski	-Undergraduate independent study	Current student
2022	Steven McKay	-Undergraduate independent study	PhD student at Binghamton University
2022	Victor Ojo	-PhD candidate	Current student
2022	Megan Grey	-PharmD student (research track)	Current student
2022	Nicholas Bianchi	-Undergraduate independent study	Current student

2023	Lina Wu	-Undergraduate independent study	Current student
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Graduate Student Committee Service, not listed above:

- **Julien Avelino Viel**, external examiner (thesis committee) – PhD Chemistry, 2021
- **Laura Zielewicz**, external examiner (thesis committee) – PhD Chemistry, 2021
- **Soujanya Karantha**, external examiner (thesis committee) – PhD Biomedical Engineering, 2021
- **Victor Wamboa**, external examiner (thesis committee) – PhD Chemistry, 2020
- **Yuhao Yuan**, thesis committee member, Biomedical Engineering. (completed comprehensive exam and prospectus. Expected graduation ~2022)
- **Stephanie Zhang**, thesis committee member, Biomedical Engineering. (completed comprehensive exam and prospectus. Expected graduation ~2022)
- **Yundi Chen**, MS/PhD defense committee, Biomedical Engineering, 2020-2022.
- **Saptarshi Ghosh**, external examiner (thesis committee) – PhD Chemistry, 2020
- **S. R. Shindi**, external examiner (thesis committee) – PhD pharmaceutical sciences, 2022, University of Kwazulu-Natal (Nigeria)

Faculty mentorship, not listed above:

- Tony Davis, 2020-present. (SOPPS faculty mentorship committee member)

MANAGERIAL EXPERIENCE (direct reports, full time)

Fanny Xu (2021-present) – Research technician, Binghamton University
Jared Miller (2020-2021) – Research technician, Binghamton University
Samantha Benjamin (2017-2020) – Research technician, Binghamton University
Jeff Casavant (2013-2017) – Associate Scientist, Pfizer Inc.
Anokha Ratneyake, PhD (2015-2017) – Senior Scientist, Pfizer Inc.
Sujiet Puthenveetil, PhD (2013-2017) – Senior Scientist, Pfizer Inc.
Niala Bhagirath (2006-2010) - Assistant Research Scientist, Wyeth Pharmaceuticals
Joan Subrath (2008-2010) - Assistant Research Scientist, Wyeth Pharmaceuticals
Elizabeth Gleason (2002-2006) – Research Associate, Athersys Inc.

INVITED SEMINARS / ORAL PRESENTATIONS

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|------|---|
| 2023 | Hanson-Wade Linker and Conjugation Summit, August 2023. “Demonstrating the pharmacology and utility of legumain-cleavable ADC linkers” |
| 2023 | PEGS, May 15-19, Boston MA. “Dual-function antibody conjugates: Combining multiple modes of action to maximize ADC efficacy” |
| 2022 | Northeast Regional ADC Meeting (NERM), October 4 2022. “Design, synthesis, and evaluation of anti-inflammatory antibody-drug-conjugates (ADCs) that target monocytes and macrophages” |

- 2022 ADC World Summit, San Diego, CA, September 6, 2022 “New Strategies for the Design of TRL7 Agonist ADCs”
- 2021 ADC World Summit, October 14-15 2021, “Design & Optimization of TLR-activating ADCs for Use in Cancer & Infectious Diseases”
- 2021 Loxo Oncology, invited lecture, February 12 2021, “Challenges and opportunities in the design of antibody-drug conjugates”
- 2021 Bighat Biosciences, ADC workshop leader. April 16, April 29, May 13. Led a 4.5 hour training workshop on antibody-drug-conjugate design.
- 2021 PEGS 2021 Protein Engineering and Cell Therapy Summit, May 13, 2021. “Alternatives to ValCitPABC: New Cleavable Linker and Self-Immolation Strategies for ADCs”
- 2020 Takeda Pharmaceutical Company, invited lecture, October 19, 2020. “New proteolytic linker strategies for ADCs”
- 2020 European Antibody Congress, Oct. 22 2020. “New proteolytic linker strategies for ADCs”
- 2019 Wells College, Nov. 8, 2019. “Macromolecular Medicinal Chemistry: Strategies for Optimizing Antibody-Drug-Conjugates”
- 2018 Binghamton University, Department of Chemistry, March 9, 2018. “Macromolecular Medicinal Chemistry.”
- 2018 Takeda Pharmaceutical Company, invited lecturer, May 22nd, 2018. “Macromolecular Medicinal Chemistry.”
- 2018 “Bioanalysis on a Budget”, L. Nathan Tumey, ADC World Summit, San Diego, CA, November 2018.
- 2017 University of Buffalo, School of Pharmacy, Sept. 14, 2017. “Dreaming Big and Thinking Small: Medicinal Chemistry Strategies for the Optimization of Antibody Drug Conjugates.”
- 2017 Binghamton University, Biomedical Engineering, Sept. 26, 2017. “Dreaming Big and Thinking Small: Medicinal Chemistry Strategies for the Optimization of Antibody Drug Conjugates.”
- 2017 Binghamton University, Department of Pharmacy and Pharmaceutical Sciences, Oct. 19, 2017. “Macromolecular Medicinal Chemistry.”
- 2016 “Site-specific Conjugation for the Advancement of New Linker-Payloads”, ADC World Summit, Berlin, Germany, February 2016.

- 2016 “Dreaming Big and Thinking Small: Applying Medicinal Chemistry Strategy to Antibody-Drug-Conjugates”, ACS Webinar, June 2016. *[Recording available upon request]*
- 2015 “ADC Biotransformation: Metabolism of ADC Linkers & Payloads in vitro and in vivo”, WRIB, Miami, FL, March 2015.
- 2014 “Metabolism of ADC linkers and payloads – how in vivo and in vitro stability data is used to advance decision making”, ADC World Summit, San Diego, CA, October 26-29, 2014.
- 2014 “In Vivo ADC Stability”, Hanson-Wade webinar, June 3rd, 2014. *[Recording available upon request]*
- 2013 “An Approach For Assessing and Optimizing ADC Linker Stability”, Boston, MA; PEGS; May 2, 2013.
- 2013 “The Impact of Conjugation and Linker Chemistry on ADC Stability”, Frankfurt, GE; ADC World Summit; February 27, 2013.
- 2011 “Identification and optimization of a series of indolo[2,3-c]quinoline IRAK4 inhibitors”, Anaheim, CA; 241st ACS National Meeting & Exposition, MEDI-3, March 27, 2011.
- 2004 “The identification and optimization of a N-hydroxy urea series of flap endonuclease 1 inhibitors,” *Gordon Conference on Medicinal Chemistry*, August 2004.

POSTERS / ABSTRACTS

- 2023 PEGS (4 posters)
- 2023 “Design, Evaluation, and Optimization of Immune Stimulating Antibody-drug Conjugates for Cancer Therapy”, Siteng Fang, Brittany Brems, Victor Ojo, Tracy A. Brooks, and Lawrence N. Tumey; March 31, 2023, AAPS NERDG meeting, St. Johns University, Queens NY.
- 2023 “Design, Synthesis, and Characterization of MYC-targeting DNAi with Improved Pharmaceutical Properties”, Samantha R. Benjamin, Alexandra Maria Psaras, Daniel Watson, Katherine J. Leong, Tracy A. Brooks, and L. Nathan Tumey; March 31, 2023, AAPS NERDG meeting, St. Johns University, Queens NY.
- 2022 “Visualizing Drug-induced Lipid Accumulation in Lysosomes with Quantitative Stimulated Raman Imaging of Chemical Bonds”, Yuhao Yuan, L. Nathan Tumey, Fake Lu; April 25, 2022; BME Department Research Exposition Conference, Binghamton NY.
- 2022 Abstract #584: “Solid-phase Site-Specific Antibody Conjugation Method Leads to ADCs with Retained Efficacy and Improved Stability.” F. Xu, V.T. Ojo, K.J. Leong, L.N.

Tumey; MARM 2022, 6/1/2022, Trenton NJ

- 2022 Abstract #588: “Preparation of indoloquinoline TLR7 agonists with improved potency for use in ADC and targeted delivery applications.” E.G. DeYoung, J.M. Howe, D.R. Wheeler, J.T. Miller, L.N. Tumey; MARM 2022, 6/1/2022, Trenton NJ
- 2022 Abstract #97: “Design, Synthesis, and Characterization of MYC-targeting DNAl with Improved Pharmaceutical Properties. S.R. Benjamin, A.M. Psaras, K.J. Leong, T.A. Brooks, L.N. Tumey”; MARM 2022, 6/1/2022, Trenton NJ
- 2022 “Tumor Targeted Delivery of TLR7 Agonists For The Treatment of Cancer”; Siteng Fang, Brittany Brems, Emmanuel Olawode, and L. Nathan Tumey; Protein Engineering Summit (PEGS), May 2022, Boston, MA.
- 2021 “Design & Optimization of TLR-activating ADCs for Use in Cancer & Infectious Diseases”, L. Nathan Tumey, World ADC Summit, San Diego, Oct. 11, 2021.
- 2021 “Abstract 1246: Anticancer activity of indolo[2,3-c]quinoline stabilization of the KRAS promoter G4mid structure”, Alexandra Maria Psaras, Jared Miller, L. Nathan Tumey, Tracy A Brooks, American Association for Cancer Research, 2021.
- 2021 “Antibody-Mediated Target Delivery of TLR7/8 Agonists”, Siteng Fang and L. Nathan Tumey. PEGS, May 11, 2021.
- 2021 “Design of a Turn-on Fluorescence Assay for the Identification and Application of Improved ADC Linkers”; Caitlin N. Vitro, Samantha R. Benjamin, Jared T. Miller, Siteng Fang, L. Nathan Tumey; PAPER ID: 3554709; ACS National Meeting, Spring 2021. Technical division: MEDI
- 2021 “Targeted Delivery of TLR-Agonists Using ADC Technology”, Brittany Brems, Emmanuel Olawode, Siteng Fang, L. Nathan Tumey; PAPER ID: 3553214; ACS National Meeting, Spring 2021. Technical division: MEDI
- 2021 “GlyPro as a self-immolative spacer for the release of payloads from antibody-drug-conjugates”; Justin M. Howe, Jillian P. Handel, Kelsey A. Watts, Samantha R. Benjamin, Courtney P. Jackson, Brittany Brems, Siteng Fang, Tchilabolo Alayi, Yetrib Hathout, and L. Nathan Tumey. ACS National Meeting, Spring 2021.
- 2020 “New proteolytic linker strategies for ADCs”; L. Nathan Tumey. European Antibody Congress, Fall 2020. (Oct 20th 2020)
- 2020 “ α -Effect nucleophiles as noncanonical substrates for microbial transglutaminase”, Chio, Tak Ian; Demestichas, Breanna R.; Brems, Brittany M.; Bane, Susan L.; Tumey, Lawrence Nathan; From Abstracts of Papers, 259th ACS National Meeting & Exposition, Philadelphia, PA, United States, March 22-26, 2020 (2020), BIOL-0015.
- 2020 “Design and optimization of a turn-on fluorescence assay for the identification of improved ADC linkers”, Vitro, Caitlin N.; Miller, Jared; Benjamin, Samantha Rene; Tumey, Lawrence Nathan; From Abstracts of Papers, 259th ACS National

Meeting & Exposition, Philadelphia, PA, United States, March 22-26, 2020 (2020), CHED-0641.

- 2020 "Evaluation of a FRET-based peptide-library aimed at the identification of improved proteolytic substrates for cleavable linkers", Miller, Jared; Benjamin, Samantha Rene; Tumey, Lawrence Nathan; From Abstracts of Papers, 259th ACS National Meeting & Exposition, Philadelphia, PA, United States, March 22-26, 2020 (2020), CHED-0098.
- 2020 "Optimization of ADC linkers: Design and evaluation of a FRET-based ADC linker-library", Miller, Jared; Benjamin, Samantha Rene; Tumey, Lawrence Nathan; From Abstracts of Papers, 259th ACS National Meeting & Exposition, Philadelphia, PA, United States, March 22-26, 2020 (2020), MEDI-0184.
- 2020 "Optimizing conditions for the conjugation of unusual substrates to IgG1 antibodies using microbial transglutaminase", Brems, Brittany M.; Demestichas, Breanna R.; Chio, Tak Ian; Bane, Susan L.; Tumey, Lawrence Nathan; From Abstracts of Papers, 259th ACS National Meeting & Exposition, Philadelphia, PA, United States, March 22-26, 2020 (2020), CHED-0648.
- 2019 "Bioconjugation via zwitterionic boron-nitrogen heterocycles", Chio, Tak Ian; Gu, Han; Mukherjee, Kamalika; Tumey, L. Nathan; Bane, Susan L.; From Abstracts of Papers, 258th ACS National Meeting & Exposition, San Diego, CA, United States, August 25-29, 2019 (2019), ORGN-0279
- 2019 "Catabolism and Stability of Site-Specific Antibody-Drug Conjugates", Courtney Jackson, Samantha Benjamin, Zhongyuan Guo, and L. Nathan Tumey. Binghamton University Research Days, April 12th, 2019.
- 2019 "Thiolation of Q295: A Simple Strategy for the Site-Specific Conjugation of Hydrophobic Payloads to Native Antibodies"; Samantha R. Benjamin, Courtney P. Jackson, Siteng Fang, Dane P. Carlson, Zhongyuan Guo, L. Nathan Tumey. April 9-11, 2019.
- 2018 "Investigating Non-Canonical Transglutaminase Substrates for Bioconjugate Formation"; Breanna Demestichas, Tak Ian Chio, Dr. Susan Bane, Dr. L. Nathan Tumey; Binghamton University Department of Chemistry Undergraduate Research Conference, November 17th, 2018.
- 2018 "Novel Chemistry for Site-Specific Antibody Bioconjugates", Tak Ian Chio, Han Gu, Kamalika Mukherjee, L. Nathan Tumey, Susan L. Bane; Next Generation Protein Summit, June 10, 2018.
- 2018 "Novel chemistry for site-specific antibody bioconjugates", Chio, Tak; Gu, Han; Mukherjee, Kamalika; Tumey, L. Nathan; Bane, Susan. 256th ACS National Meeting & Exposition, Boston, MA, United States, August 19-23, 2018 (2018), BIOL-33.
- 2009 "SAR of substituted 2-phenyl thieno[2,3-b]pyridine-5-carbonitrile PKC-theta inhibitors", Tumey, L. Nathan; Wu, Biqu; Boschelli, Diane H.; Lee, Julie; Yang, Xiaoke; Brennan, Agnes; Chaudhary, Divya, Medicinal and Bioorganic Chemistry Foundation 9th Winter Conference, Steamboat Springs, CO, January 25-29, 2009.
- 2008 "2-Alkenyl thieno[2,3-b]pyridine-5-carbonitriles: Potent and selective inhibitors of PKC-theta", Tumey, L. Nathan; Boschelli, Diane H.; Chaudhary, Divya; Lee,

PATENTS (FILED)

- 2023 “TARGETED DELIVERY OF DUAL PAYLOAD OF MMAF OR MMAE AND TLR7 AGONISTS FOR THE TREATMENT OF CANCER”, Filed May 15, 2023. L. Nathan Tumey and Victor Ojo. U.S. Application No.: 63/502,176
- 2022 “Targeted-Delivery of TLR7/8 Agonists for the Treatment of Cancer and/or Infectious Diseases”; WO2022187809, filed March 1, **2022**. L. Nathan Tumey and Emmanuel Olawode.
- 2020 “Calicheamicin derivatives and antibody drug conjugates thereof”, Omar Khaled Ahmad, Stephen Paul Brown, Kenneth John Dirico, Russell Dushin, Gary Frederick Filzen, Sujiet Puthenveetil, Pavel Strop, Chakrapani Subramanyam, Lawrence N Tumey (**2020**), US16477290.
- 2019 “Antibodies and antibody-drug conjugates specific for CD123 for cancer immunotherapy”, Charati, Manoj Baburao; Han, Yoon-Chi; Katragadda, Madan; Piche-Nicholas, Nicole Melissa; Tumey, Lawrence Nathan (**2019**), WO 2019082020.
- 2019 “Cysteine engineered antibody drug conjugates”, Katragadda, Madan; Dushin, Russell; Tumey, Lawrence Nathan (**2019**), US 20190099499.
- 2018 “Preparation of calicheamicin derivatives and antibody drug conjugates thereof”, Ahmad, Omar Khaled; Brown, Stephen Paul; Dirico, Kenneth John; Dushin, Russell; Filzen, Gary Frederick; Puthenveetil, Sujiet; Strop, Pavel; Subramanyam, Chakrapani; Tumey, Lawrence N. (**2018**), WO 2018138591.
- 2018 “Heteroaryl sulfone-based conjugation handles, methods for their preparation, and their use in synthesizing antibody drug conjugates”, Dushin, Russell George; Abramite, Joseph A.; Casavant, Jeffrey M.; Che, Ye; Filzen, Gary Frederick; Flanagan, Mark Edward; Gilbert, Adam Matthew; Moine, Ludivine; O'Donnell, Christopher John; Roberts, Lee; Starr, Jeremy; **Tumey, Lawrence N.**; Uccello, Daniel P.; Young, Jennifer (**2018**), WO 2018025168.
- 2017 “Antibodies comprising a substituted cysteine in constant region for site-specific conjugation”, Ma, Dangshe; Marquette, Kimberly Ann; Graziani, Edmund Idris; Sapra, Puja; Tumey, Lawrence Nathan; Prashad, Nadira Anarkali; Khandke, Kiran Manohar; Bennett, Eric M.; Tchistiakova, Lioudmila (**2017**), WO 2017093845.

- 2016 “Antibodies and antibody fragments for site-specific conjugation”, Ma, Dangshe; Marquette, Kimberly Ann; Graziani, Edmund Idris; Sapra, Puja; **Tumey, Lawrence Nathan**; Prashad, Nadira Anarkali; Khandke, Kiran Manohar; Bennet, Eric M.; Tchistiakova, Lioudmila (**2016**), US2017/0216452.
- 2016 “Tubulysin analogs and methods for their preparation”, Subramanyam, Chakrapani; Tumey, Lawrence N.; Xie, Longfei; Leverett, Carolyn A.; Vetelino, Beth C.; Sukuru, Sai Chetan K.; Hudson, Sarah; Doppalapudi, Venkata Ramana; Bhat, Abhijit S. (**2016**), WO2017134547A1.
- 2016 “Bifunctional cytotoxic agents containing the CTI pharmacophore”, Maderna, Andreas; Subramanyam, Chakrapani; Tumey, Lawrence N.; Chen, Zecheng; Casavant, Jeffrey M. (**2016**), US 20160271270.
- 2013 “Engineered antibody constant regions for site-specific conjugation with therapeutic and for treatment of cancer, autoimmune, inflammatory, infectious or other disease” Marquette, Kimberly; Bennett, Eric; Tchistiakova, Lioudmila; Tumey, L. Nathan (Pfizer) PCT Int. Appl. (**2013**), WO 2013093809.
- 2009 “5-Alkyl/alkenyl-3-cyanopyridines as kinase inhibitor and their preparation, pharmaceutical compositions and use in the treatment of kinase-mediate diseases.”, Tumey, Lawrence Nathan; Boschelli, Diane Harris; Bhagirath, Niala; Chen, Joan Jowen; Floyd, Middleton Brawner; Li, Zhong; Niu, Chuansheng; Shim, Jaechul; Wang, Yan; Wang, Yanong Daniel; Wu, Biqu; Eid, Clark N. (Wyeth Pharmaceuticals, USA) PCT Int. Appl. (**2009**) WO 2009076602.
- 2008 “Process for the preparation of 4-hydroxythieno[2,3-b]pyridine-5-carbonitriles by thermal cyclization”, Tumey, L. Nathan; Boschelli, Diane. (Wyeth Pharmaceuticals, USA), U.S. Pat. Appl. Publ. (**2008**) US 2008076926.
- 2007 “Substituted 3-cyanopyridines as protein kinase inhibitors and their preparation, pharmaceutical compositions and use in the treatment of autoimmune and inflammatory diseases”, Cole, Derek Cecil; Boschelli, Diane Harris; Wang, Yanong Daniel; Asselin, Magda; Joseph-Mccarthy, Diane Marie; Prashad, Amarnauth Shastrie; Wissner, Allan; Dushin, Russell; Wu, Biqu; Tumey, Lawrence Nathan; Niu, Chuan S.; Chen, Joan. (Wyeth Pharmaceuticals, USA) U.S. Pat. Appl. Publ. (**2007**) US 2007287708.
- 2007 “Preparation of thiophenyl and pyrrolyl azepines as serotonin 5-HT_{2c} receptor ligands”, Tumey, L. Nathan; Bom, David C.; Bennani, Youssef L.; Robarge, Michael J. (Athersys Inc, USA) PCT Int. Appl. (**2007**) WO2007084622.
- 2006 “Preparation of fused azepines as serotonin 5-HT_{2c} receptor modulators”, Bennani, Youssef L.; Huck, Bayard; Robarge, Michael J.; Bom, David C.; Varga, Norbert; Tumey, Lawrence N. (Athersys Inc., USA), U.S. Pat. Appl. Publ. (**2006**), US2006003990.
- 2006 “Indole acetic acids exhibiting CRTH₂ receptor antagonism and their preparation, pharmaceutical compositions, and uses for treatment of diseases responsive to binding inhibition of prostaglandin D₂ and its metabolites to the

CRTH2 receptor”, Tumey, L.N.; Bennani, Y.; Gleason, E.A.; Robarge, M.J. (Athersys Inc., USA), PCT Int. Appl. **(2006)** WO2006034419.

2006 “Preparation of fused 3-hydroxypyrimidine-2,4-diones as inhibitors of flap endonuclease”, Tumey, Lawrence N.; Bennani, Youssef; Huck, Bayard; Bom, David C. **(2006)**, WO2006014647.