

Sudeshna Roy, Ph.D.

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Department of BioMolecular Sciences
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PROFESSIONAL APPOINTMENTS

Assistant Professor of Medicinal Chemistry and Pharmacognosy Department of BioMolecular Sciences, The University of Mississippi	7/2017–current
Research Assistant Professor in the Research Institute of Pharmaceutical Sciences School of Pharmacy, The University of Mississippi	7/2017–current

EDUCATION

Postdoctoral Studies	University of North Carolina at Chapel Hill Division of Chemical Biology and Medicinal Chemistry, School of Pharmacy Advisor: Jeffrey Aubé, Ph.D.	2015–2017
Postdoctoral Studies	University of Kansas Department of Medicinal Chemistry, School of Pharmacy Advisor: Jeffrey Aubé, Ph.D.	2012–2015
Ph.D.	University of Missouri-St. Louis Dissertation: <i>Studies Toward Tetrahydrofuran-containing Natural Products: Total Synthesis of Amphidinolide C and Oxylipids</i> Advisor: Christopher D. Spilling, Ph.D.	2007–2012
M.S.	University of Missouri-St. Louis Specialization: Organic Chemistry	2007–2009
M.Sc.	University of Delhi, India Specialization: Organic Chemistry	2005–2007
B.Sc.	St. Stephen's College, Delhi, India Major: Chemistry	2002–2005

RESEARCH INTERESTS

1. Target-based discovery of chemotherapeutics against *Mycobacterium tuberculosis* and other antibiotic-resistant bacterial infections and targeted protein degradation.
2. Functionalization of fluoroalkenes.

HONORS AND AWARDS

Inducted to The Rho Chi Pharmacy Honors Society	2020–Present
Awarded the Best Pharmacy Year1 Teaching Team of the Year (served as a co-instructor)	2020
Selected for NIGMS Mentoring Workshop for New Faculty in Organic and Biological Chemistry	2019
Travel Award, NSF Chemistry Early Career Investigator Workshop	2018
Selected for NSF Chemistry Early Career Investigator Workshop	2018
Elected member of the UNC-Chapel Hill chapter of Sigma Xi, The Scientific Research Honor Society	2016–2017
Chancellor's Graduate Scholars Dissertation Fellowship, University of Missouri-St. Louis	2011–2012
Sigma Xi Award by the Graduate School, University of Missouri-St. Louis	2011
ACS Travel Award from the Division of Organic Chemistry for the 242nd National in Denver	2011
Graduate Research Fair Award, Ph.D. Natural Sciences Division	2009–2011
Outstanding Graduate Student Recognition from the Center of Teaching & Learning	2009–2010

RESEARCH SUPPORT (Completed & Ongoing)

Nacuity Pharmaceuticals (Roy) 05/23/2022–12/31/2023

Role: PI

Fluorinated & deuterated analogs of N-acetyl cysteine amide

NIH R21 #AI142210 in NIAID (Roy) 7/1/2019–6/30/2022 (NCE)

Role: PI

Target-based Chemotherapeutics Development Against Mycobacterium tuberculosis

NSF XSEDE (Roy) 10/23/2019–04/22/2021

Role: PI

Extended all-atom molecular dynamics simulations to understand the conformational changes of MraY_{Mtb} and its binding interactions with small molecule inhibitors

NIH P30 #GM122733 in NIGMS CORE-NPN COBRE 5/31/2020–10/22/2021

Role: PI of CORE Voucher

Search for natural product-inspired new chemical entities to treat pain, neuropsychiatric disorders, and addiction

RESEARCH SUPPORT (Submitted & Pending)

NIH R35 MIRA (Roy) Submitted on 10/03/22

Role: PI

New Methods and Chemical Tools Against Multi Drug-resistant Bacterial Infections.

Nacuity Pharmaceuticals (Roy)- pending final amended agreement 01/2/2023–12/31/2023

Role: PI

Fluorinated & deuterated analogs of N-acetyl cysteine amide

NIH P20GM130460 in NIGMS GLYCORE (Roy) Submitted on 06/15/22

Role: Pilot Project (recommended for funding, waiting on NoA)

Chemical Programming of Bacterial Protease for Targeted Degradation of Peptidoglycan Biosynthesis

NIH R01 in NIAID (Roy) To be Submitted on 02/05/22

Role: PI

Development of new classes of narrow-spectrum antimycobacterial chemotherapeutics

COLLABORATORS

1. Christina Stallings, Ph.D., Washington University in St. Louis
2. Robert Doerksen, Ph.D., University of Mississippi
3. Christian Ducho, Ph.D., Saarland University, Germany
4. Ryan Fortenberry, Ph.D., University of Mississippi
5. Michael Wall, Ph.D., Nacuity Pharmaceuticals

SERVICE

- Journal Referee
Nature Communications, MedChemComm, Journal of Natural Products, Israel Journal of Chemistry, Translational Research, Beilstein Journal of Organic Chemistry, Chemical Science, Organic and BioMolecular Chemistry, Chemical Toxicology, ACS Infectious Diseases, ACS Medicinal Chemistry Letters, European Journal of Organic Chemistry
- Review Panel
2019 American Chemical Society Petroleum Research Fund (ACS PRF) Doctoral New Investigator (DNI) research proposal
2020 NIGMS, Synthetic and Biological Chemistry B Study Section (SBCB) Review Panel
2022 NIAID SBIR
- Founder of the Chemistry Graduate Student Association, Treasurer at UMSL, 2009–2011
- Representative of Dept. of Chemistry & Biochemistry for Graduate Student Committee (Nominated), 2009–2011
- Participant in NIH Sponsored Fragment-based Drug Design Workshop, University of Kansas 2013
- NIH Sponsored Contemporary Medicinal Chemistry Workshop, University of Kansas 2012
The Optimization of Drug Physicochemical Properties in Early Drug Discovery at KU Med Chem Fall Retreat 2012
- University of North Carolina at Chapel Hill's chapter of Sigma Xi, The Scientific Research Honor Society, 2016–Present
- American Chemical Society, 2008–Present
- American Association Pharmaceutical Sciences, 2017–Present
- Discussion leader at the Heterocycles Gordon Conference, 2022

OUTREACH

1. Hosted the following high school students for 4 weeks that participated in the ARISE@UM, A Research Immersive STEM Experience at the University of Mississippi, program
 - Participated in a zoom seminar, Summer 2020 & 2021 (in person activities canceled due to COVID-19)
 - Claire Cizdziel, Oxford High School, Summer 2019
 - Abigail Moeller, Excelsior Classical, Summer 2019
 - Lithika Polepalli, Mississippi School of Math and Science, Summer 2018
 - Sarena Patel, Mississippi School of Math and Science, Summer 2018
2. Participated in the UM Science Technology Engineering Math Summer Research Experience of Undergraduate Program (STEMS REU) as a sponsoring faculty and hosted the following students
 - Program for summer 2020 canceled due to COVID-19
 - Matthew Saucier, University of Mississippi, Summer 2019
 - Matthew Saucier, University of Mississippi, Summer 2018

- Peggy McCluggage, University of Mississippi, Summer 2018
3. Participated in the UM pharmacy SRFP, Summer Research Fellowship Program, as a sponsoring faculty and hosted the following students
 - J.D. Olivet, University of Mississippi, Summer 2019

TEACHING EXPERIENCE

University of Mississippi

1. **PHCY 401: Foundations of BioMolecular Sciences I, 3 Credit Hours**
Fall 2018, 107 Pharmacy Year I students. Instructor for 4 weeks
Fall 2019, 109 Pharmacy Year I students. Instructor for 4 weeks
Fall 2020, 98 Pharmacy Year I students. Instructor for 4 weeks
Fall 2021, 106 Pharmacy Year I students. Instructor for 4 weeks
Fall 2022, 77 Pharmacy Year I students. Instructor for 4 weeks
2. **MEDC 416: Medicinal Chemistry of Therapeutic Agents I, 3 Credit Hours**
Fall 2018, 120 Pharmacy Year II students. Instructor for 2 weeks
3. **MEDC 501: Advanced Medicinal Chemistry I, 3 Credit Hours**
Fall 2018, 1 BioMolecular Sciences graduate student. Instructor for 4 weeks
Fall 2019, 5 BioMolecular Sciences graduate students. Instructor for 4 weeks
Fall 2020, 7 BioMolecular Sciences graduate students. Instructor for 4 weeks
Fall 2021, 5 BioMolecular Sciences graduate students. Instructor for 4 weeks
Fall 2022, 2 BioMolecular Sciences graduate students. Instructor for 4 weeks
4. **MEDC 714: Chemotherapeutic Agents, 3 Credit Hours**
Spring 2019, 6 BioMolecular Sciences graduate students. Instructor of Record
Spring 2022, 9 BioMolecular Sciences graduate students. Instructor of Record
5. **MEDC 507: Chemotherapeutic Agents, 3 Credit Hours**
Spring 2020, 6 BioMolecular Sciences graduate students. Instructor of Record
6. **PHCY 603: Professional studies in Integrated Systems – Genitourinary and Reproductive Health, 3 Credit Hours**
Fall 2020, Pharmacy Year 3 students. Total contact time 4+ hours as an instructor.
Fall 2021, Pharmacy Year 3 students. Total contact time 3+ hours as an instructor.
Fall 2022, Pharmacy Year 3 students. Total contact time 3+ hours as an instructor.

University of Missouri-St. Louis as a graduate student

1. Instructor of Organic Chemistry Laboratory Course
Summer 2012
2. Laboratory & Workshop Teaching Assistant for General Chemistry
Spring 2011, Fall 2007
3. Laboratory Teaching Assistant for Organic Chemistry
Summer–Fall 2010, Spring 2011
4. Laboratory & Workshop Teaching Assistant for General Chemistry
Spring 2008

CURRENT RESEARCH GROUP

Graduate Research Assistants (duration, department)

1. Tomayo Berida (Jul 2018–current, Pharmacognosy div in BioMolecular Sciences). Expected graduation May 2023.
2. Mario Djugovski (Aug 2020–current, Medicinal Chemistry div in BioMolecular Sciences). Expected graduation May 2025.

- Destinee Manning (Jul 2021–current, Medicinal Chemistry div in BioMolecular Sciences). Expected graduation May 2025.
- Tzu-Yu Huang (Sept 2021–current, Medicinal Chemistry div in BioMolecular Sciences). Expected graduation May 2025.

PAST MEMBERS

Postdoctoral Research Associates (duration)

- Sampad Jana (Mar 2018–Sept 2019)
- Shamba Chatterjee (Apr 2018–May 2021)

Associate R&D Staff

- Sweta Adhikari (Jan 2020–Jun 2020)
- Matt Saucier (Aug 2020–June 2021)
- Peggy McCluggage (Aug 2020–June 2021)

Graduate Students (time in lab, graduation date)

- Sweta Adhikari, M.S. (Jul 2017–Dec 2019) in Pharmaceutical Sciences with emphasis on Medicinal Chemistry
Thesis: A Study to Regioselectively Access Fluorinated Triazoles and Isoxazoles
- Michael Ryan Cox (Jan 2019–Dec 2020, exited the graduate curriculum)
- Hamdan Alferaei, M.S. (Jan 2020–Dec 2021) in Pharmaceutical Sciences with emphasis on Medicinal Chemistry
Thesis: Applications of Fluoronitroalkenes in 1,3-Dipolar Cycloaddition and 1,4-Conjugate Addition

Undergraduate Students (time in the lab, degree program, graduation date)

- Hannah Chasteen (Aug–Dec 2017, B.S. in Forensic Chemistry, *transferred*)
- Lilly Nguyen (Aug 2017–May 2018, B.S. in Biology, May 2020)
- Galina Ostrovsky* (Jan 2018–Nov 2018, B.A. in Biochemistry and Spanish, May 2019)
- Jay D. Olivet* (Jan 2018–May 2019, B.S. in Pharmaceutical Sciences, May 2020, *transferred to Samford University*)
- Matthew Saucier* (Jan 2018–May 2020, B.A. in Biochemistry, May 2020)
- Peggy McCluggage* (Jan 2018–May 2020, B.A. in Biochemistry, May 2020)
- Micah Stewart* (Jan 2019–May 2020, B.A. in Biochemistry, May 2020)
- Emmanuel Hodges (Fall 2019, B.S. in Pharmaceutical Sciences, May 2021)
- Micaela Shields* (Aug 2020–Dec 2020, B.A. in Biochemistry, May 2023)
- Lindsey Hohlt (Aug 2020–May 2021, B.S. in Pharmaceutical Sciences, May 2022)

**Indicates Honors Program*

RESEARCH COMMITTEE MEMBER

Type: Dissertation (duration, degree, department)

- Amna Adam (Fall 2015–May 2020, Ph.D., Medicinal Chemistry div in BioMolecular Sciences)
- Mohammed Hawwal (Fall 2016–May 2021, Ph.D., Pharmacognosy div in BioMolecular Sciences)
- Shukria Akbar (Fall 2016– May 2021, Ph.D., Pharmacognosy div in BioMolecular Sciences)
- Barbara I. Adaikpoh (Fall 2016–May 2021, Ph.D., Pharmacognosy div in BioMolecular Sciences)
- AyoOluwa O. Aderibigbe (Fall 2016–July 2021, Ph.D., Medicinal Chemistry div in BioMolecular Sciences).
- Anthony Devdass (Fall 2017–May 2022, Ph.D., Inorganic div in Chemistry and Biochemistry)
- Vijayan Sajith (Fall 2017– May 2022, Ph.D., Organic div in Chemistry and Biochemistry)
- Nicholas Akins (Fall 2017–May 2021, Ph.D., Medicinal Chemistry div in BioMolecular Sciences)

9. Kayleigh Barlow (Spring 2018–current, Ph.D., Physical Chemistry div in Chemistry and Biochemistry)
10. Md Imdadul Khan (Fall 2018–November 2022, Ph.D., Medicinal Chemistry div in BioMolecular Sciences)
11. Christine Curiac (Fall 2018–November 2022, Ph.D., Organic div in Chemistry and Biochemistry)
12. Morgan Perkins (Fall 2018–November 2022, Ph.D., Physical Chemistry div in Chemistry and Biochemistry)
13. Megan Davis (Spring 2019–February 2023, Ph.D., Physical Chemistry div in Chemistry and Biochemistry)
14. Ravinder Kaur (Fall 2019–current, Ph.D., Organic div in Chemistry and Biochemistry)

Type: Thesis (duration, degree, department, graduation date)

1. Maali Alshammari (Spring 2017–May 2019, M.S. in Pharmaceutical Sciences, Medicinal Chemistry div in BioMolecular Sciences, May 2019)
Title: Synthesis of Fluoroflavones as Potential Neuroprotective Agents.
2. Ibrahim Almarabi (Spring 2017–May 2019, M.S. in Pharmaceutical Sciences, Pharmacognosy div in BioMolecular Sciences, May 2019)
Thesis Title: Phytochemical Investigations and Drug Interaction Potential of Cyanotis vaga (Luor.) Schult. & Schult. f.
3. Kyra Dodson (Fall 2016–Jul 2019, M.S. in Chemistry, Organic div Chemistry and Biochemistry, Dec 2019)
Title: Design Strategies for Histone Deacetylase Inhibitors.
4. Sweta Adhikari (Fall 2017–Fall 2019, M.S. in Pharmaceutical Sciences, Medicinal Chemistry div in BioMolecular Sciences, Dec 2019)
5. Hamdan Alferaei (Spring 2020–Fall 2021, M.S. in Pharmaceutical Sciences, Medicinal Chemistry div in BioMolecular Sciences, Dec 2021)

Type: Honors College Thesis (degree program, graduation date)

1. Cassidy Baldwin (B.S. in Biology, May 2018)
Title: Techniques for the synthesis of difluorinated organic molecules using magnesium bases.
2. Matt Saucier (B.A. in Biochemistry with Minor in Biology, May 2020)
Title: Synthesis of Fluorinated Pyrazoles via Intra- and Intermolecular Cyclization Reactions.
3. Peggy McCluggage (B.A. in Biochemistry with Minor in Biology, May 2020)
Title: Design and Synthesis of Novel Analogs as Potential Antitubercular Agents.
4. Micah Stewart (B.A. in Biochemistry with Minor in Biology, May 2020)
Title: Silver-Catalyzed Synthesis of Disubstituted Fluorinated Isoxazoles.
5. Eli Bettiga (B.A. in Biology with Minor in Biochemistry, May 2021)
Title: Synthesis of Novel Long Chain Unsaturated Fatty Acids Analogs of Capsaicin.

PUBLICATIONS

24. Berida, T.; McKee, S. R.; Chatterjee, S.; Li, W.; Pandey, P.; Tripathi, S. D.; Doerksen, R. D.; Jackson, M.; Ducho, C.; Stallings, C. L.; **Roy, S.** "Discovery, Synthesis, and Optimization of 1,2,4-Triazolyl Pyridines Targeting *Mycobacterium tuberculosis*" *bioRxiv*. 2022.11.14.516356.
23. Huang, T.-Y.; Djugovski, M.; Manning, D. L.; Adhikari, S.; **Roy, S.** "Morpholine-mediated defluorinative cycloaddition of gem-difluoroalkenes and organic azides" *Submitted*
22. Saucier, A. M.; Alrefaei, H.; McCluggage, P. A.; Jana, S.; Fortenberry, R. C.; **Roy, S.** "Divergent Reactivity of Hydrazones: 1,4-Addition vs. [3+2] Cycloaddition with α -Fluoronitroalkenes" *Submitted*
21. Wu, X.; Ramesh, R.; Wang, J.; Zheng, Y.-G.; Armaly, A.; Wei, L.; Xing, M.; **Roy, S.**; Lan, L.; Gao, P.; Miao, Y.; Xu, L.; Aubé, J. "Small molecules targeting the RNA-binding protein HuR inhibit tumor growth in xenografts" *Accepted at Journal of Medicinal Chemistry*, **2022**.
20. Green, L. C.; Slone, S.; Anthony, S. R.; Guarnieri, A. Parkins, S.; Shearer, S. M.; Neiman, M. L.; **Roy, S.**; Aubé, J.; Wu, X.; *Sudeshna Roy, Ph.D. – C.V. updated January 2023*

Xu, L., Tranter, M. "HuR-dependent expression of Wisp1 is necessary for TGF-induced cardiac myofibroblast activity." *Accepted at Journal of Molecular and Cellular Cardiology*, **2022**.

19. Pandey, P.; Chatterjee, S.; Berida, T.; Doerksen, R. J.; **Roy, S.** "Identification of Potential Non-nucleoside MraY Inhibitors for Tuberculosis Chemotherapy from Structure-Based Virtual Screening" *Journal of Biomolecular Structure & Dynamics*, **2022**, 40, 4832. DOI: 10.1080/07391102.2020.1862705
18. Stoddard, S. V.; Stoddard, S. D.; Oelkers, B. K.; Fitts, K.; Whalum, K.; Hemphill, A. D.; Manikonda, J.; Martinez, L. M.; Riley, E. G.; Roof, C. M.; Sarwar, N.; Thomas, D. M.; Ulmer, E.; Wallace, F. E.; Pandey, P.; **Roy, S.** "Optimization Rules for SARS-CoV-2 Mpro Antivirals: Ensemble Docking and Exploration of the Coronavirus Protease Active Site" *Viruses*, **2020**, 12, 942. DOI: 10.3390/v12090942
17. Wu, X.; Gardashova, G.; Lan, L.; Han, S.; Zhong, C.; Marquez, R.; Wei, L.; Wood, S.; **Roy, S.**; Gowthaman, R.; Karanicolas, J.; Gao, P.; Dixon, D.; Welch, D.; Li, L.; Ji, M.; Aubé, J.; Xu, L. "Targeting the interaction between RNA-binding protein HuR and FOXQ1 suppresses breast cancer invasion and metastasis" *Communications Biology*, **2020**, 3, 193. DOI: 10.1038/s42003-020-0933-1
16. Jana, S.; Adhikari, S.; Cox, M. R.; **Roy, S.** " Regioselective synthesis of 4-fluoro-1,5-disubstituted-1,2,3-triazoles from synthetic surrogates of α -fluoroalkynes" *Chemical Communications* **2020**, 56, 1871. DOI: 10.1039/C9CC09216A
15. Andrade, D.; Mehta, M.; Griffith, J.; Oh, S.; Corbin, J.; Babu, A.; De, S.; Chen, A.; Zhao, Y. D.; Husain, S.; **Roy, S.**; Xu, L.; Aube, J.; Janknecht, R.; Gorospe, M.; Herman, T.; Ramesh, R.; Munshi, A. "HuR Reduces Radiation-Induced DNA Damage by Enhancing Expression of ARID1A" *Cancers*, **2019**, 11, 2014. DOI:10.3390/cancers11122014.
14. Allegri, L.; Baldan, F.; **Roy, S.**; Aubé, J.; Russo, D.; Filetti, S.; Damante, G. "The HuR CMLD-2 Inhibitor Exhibits Antitumor Effects via MAD2 Downregulation in Thyroid Cancer Cells" *Scientific Reports* **2019**, Article number: 7374. DOI: 10.1038/s41598-019-43894-0
13. Green, L.G.; Anthony, S. R.; Slone, S.; Lanzillotta, L.; Nieman, M. L.; Wu, X.; Robbins, N.; Jones, S. M.; **Roy, S.**; Owens, A. P.; Aubé, J.; Xu, L.; Lorenz, J. N.; Blaxall, B. C.; Rubinstein, J.; Benoit, J. B.; Tranter, M. "Human Antigen R as a Therapeutic Target in Pathological Cardiac Hypertrophy" *JCI Insight*, **2019**, 4(4):e121541. DOI: 10.1172/jci.insight.121541
12. Spicer, T. P.; Gardiner, D. L.; Schoenen, F. J.; **Roy, S.**; Griffin, P. R.; Chase, P.; Scampavia, L.; Hodder, P.; Trenholme, K. R. "Identification of Antimalarial Inhibitors Using Late-Stage Gametocytes in a Phenotypic Live/Dead Assay" *SLAS DISCOVERY: Advancing Life Sciences R&D*, **2019**, 24, 38–46. DOI: 10.1177/2472555218796410
11. **Roy, S.**; Motiwala, H. M.; Koshlap, K. M.; Aubé, J. "Hexafluoroisopropanol and Acetyl Chloride Promoted Catalytic Hydroarylation with Phenols" *European Journal of Organic Chemistry*, **2018**, 306–315. DOI: 10.1002/ejoc.201701256
10. Muralidharan, R.; Mehta, M.; Ahmed, R.; **Roy, S.**; Xu, L.; Aubé, J.; Chen, A.; Zhao, Y.; Herman, T.; Ramesh, R.*; Munshi, A.* "HuR-targeted small molecule inhibitor exhibits cytotoxicity towards human lung cancer cells" *Scientific Reports*, **2017**, 7, Article number: 9694. DOI: 10.1038/s41598-017-07787-4
9. **Roy, S.***; Sileikyte, J.; Neuenswander, B.; Hedrick, M. P.; Chung, T. D. Y.; Aubé, J.; Schoenen, F. J.*; Forte M. A.*; Bernardi, P.* "N-Phenylbenzamides as Potent Inhibitors of the Mitochondrial Permeability Transition Pore" *ChemMedChem*, **2016**, 11, 283–288. DOI: 10.1002/cmdc.201500545
*corresponding author
8. **Roy, S.**; Sileikyte, J.; Schiavone, M.; Neuenswander, B.; Argenton, F.; Aubé, J.; Hedrick, M. P.; Chung, T. D. Y.; Forte M. A.; Bernardi, P.; Schoenen, F. J. "Discovery, Synthesis, and Optimization of Diarylisoxazole-3-carboxamides as Potent Inhibitors of the Mitochondrial Permeability Transition Pore" *ChemMedChem*, **2015**, 10, 1655–1671. DOI:

7. **Roy, S.**; Sutivisedsak, N.; Hamper, B. C.; Lyss, A. M.; Spilling, C. D. "A Practical and Scalable Synthesis of (S)- and (R)-1-(Dimethoxyphosphoryl)allyl Methyl Carbonates" *Synthesis*, **2015**, *47*, 3669–3672. DOI: 10.1055/s-0035-1560487
6. Schroeder, C. E.; Yao, Y.; Sotsky, J.; Smith, R. A.; **Roy, S.**; Chu, Y-K, Guo, H.; Tower, N. A.; Noah, J. W.; McKellip, S.; Sosa, M.; Ramussen, L.; Smith, L. H.; White, E. L.; Aubé, J.; Jonsson, C. B.; Chung, D.; Golden, J. E. "Development of (E)-2-((1,4-dimethylpiperazin-2-ylidene)amino)-5-nitro-N-phenylbenzamide, ML336: Novel 2-Amidinophenylbenzamides as Potent Inhibitors of Venezuelan Equine Encephalitis Virus" *Journal of Medicinal Chemistry*, **2014**, *57*, 8608–8621. DOI: 10.1021/jm501203v
5. Sileikyte, J.; **Roy, S.**; Porubsky, P.; Neuenswander, B.; Wang, J.; Hedrick, M.; Pinkerton, A. B.; Salaniwal, S.; Kung, P.; Mangravita-Novo, A.; Smith, L. H.; Bourdette, D. N.; Jackson, M. R.; Aubé, J.; Chung, T. D. Y.; Schoenen, F. J.; Forte M. A.; Bernardi, P. "Small Molecules Targeting the Mitochondrial Permeability Transition" Probe Reports from the NIH Molecular Libraries Program. Submitted in April 2014; Peer-reviewed in July 2014.
<http://www.ncbi.nlm.nih.gov/books/NBK280049/>
4. Chung, D.; Schroeder, C. E.; Sotsky, J.; Yao, T.; **Roy, S.**; Smith, R. A.; Tower, N. A.; Noah, J. A.; McKellip, S.; Sosa, M.; Rasmussen, L.; White, E. L.; Aubé, J.; Golden, J. E. "ML336: Development of Quinazolinone-Based Inhibitors Against Venezuelan Equine Encephalitis Virus (VEEV)" Probe Reports from the NIH Molecular Libraries Program. Submitted in December, 2012; Peer-reviewed in February 2013.
<http://www.ncbi.nlm.nih.gov/books/NBK179829/>
3. **Roy, S.**; Spilling, C. D.* "An Expedient Total Synthesis of Both Diastereomeric Lipid Dihydroxytetrahydrofurans from *Notheia Anomala*" *Organic Letters*, **2012**, *14*, 2230–2233. DOI: 10.1021/ol300597u
2. **Roy, S.**; Spilling, C. D. "Synthesis of the C(18)-C(34) Fragment of Amphidinolide C and the C(18)-C(29) Fragment of Amphidinolide F" *Organic Letters*, **2010**, *12*, 5326–5329. DOI: 10.1021/ol102345v
1. Ranu, B. C.; Banerjee, S.; **Roy, S.** "A Task Specific Basic Ionic Liquid, [Bmlm]OH-promoted Efficient green and One-pot Synthesis of Tetrahydrobenzo[b]pyran Derivatives" *Indian Journal of Chemistry*, **2008**, *47B*, 1108–1112. DOI: 10.1002/chin.200846133

PATENT

Roy, S.; Bernardi, P.; Forte, M. A.; Schoenen, F. J.; Sileikyte, J. "Small Molecule Inhibitors of the Mitochondrial Permeability Transition Pore (mtPTP)" PCT Int. Appl. (2016), WO 2016073633 A1 20160512.

Aubé, J.; **Roy, S.**; Xu, L.; Wu, X.; Lan, L. "Inhibitors of RNA-Binding Proteins, Compositions Thereof, and Therapeutic Uses Thereof" Patent filed on 05/01/19, Serial No. 62/841,600.

Roy, S., Berida, T.; Doerksen, R. J. "1,2,4-Triazolyl Pyridine Agents Targeting Mycobacterium Tuberculosis" Provisional patent application, 63/267,357, issue date 1/31/2022. Stallings, C. L., and McKee, S. is to be added to the full application to be filed on 1/21/2023.

SELECTED PROFESSIONAL PRESENTATIONS

Roy, S. "Search for Narrow-spectrum Antibacterials & Ways to Access Fluorinated Molecules" 71st Southwest Regional Meeting (SWRM) of the American Chemical Society (SERMACS), Baton Rouge, LA, Nov 2022 (*Invited Talk*)

Roy, S. “New Classes of Antimycobacterial Chemotherapeutics” Gordon Research Conference New Antibacterial Discovery and Development, Lucca, Italy, Jul 2022 (*Poster*)

Roy, S. “Polarity Reversal and Functionalization of fluorinated alkenes” Gordon Research Conference Heterocycles, Newport, RI, Jun 2022 (*Poster*)

Roy, S. “Crafting Small Molecules to Probe Biology and Treat Human Diseases” Saarland University, Germany, Jul 2022 (*Invited Talk*)

Roy, S. “Crafting Small Molecules to Probe Biology and Treat Human Diseases” IQUIR-CONICET, Argentina, Apr 2022 (*Invited Talk*)

Roy, S. “Crafting Small Molecules to Probe Biology and Treat Human Diseases” University of Illinois, Chicago, Jan 2022 (*Invited Talk*)

Roy, S.; Jana, S.; Adhikari, S.; Cox, M. R. “Use of α -Fluoronitroalkenes as a Synthetic Equivalent for Unstable Fluoroalkynes to Access 4-Fluoro-1,5-disubstituted-1,2,3-triazoles” Gordon Research Conference Heterocycles, Newport, RI, Jun 2019 (*Poster*)

Roy, S.; Pandey, P.; Chatterjee, S.; Stallings, L. C.; Doerksen, R. J. “Structure-based Virtual Screening Approach to Identify Novel MraY Inhibitors for Tuberculosis Chemotherapy” Keystone Symposia on Tuberculosis: Mechanisms, Pathogenesis and Treatment (A3), Banff, Canada, Jan 2019 (*Poster*)

Roy, S. “Small Molecule Tools in Chemistry and Biology” Invited Lecture, Department of Chemistry and Biochemistry, University of Mississippi, Apr 26, 2018 (*Talk*)

Roy, S. “Small Molecule Tools in Chemistry and Biology” Invited Lecture, Chemistry Department, Jackson State University, Nov 16, 2018 (*Talk*)

Roy, S. “Small Molecule Tools to Investigate Chemical and Biological Processes” *Invited Lecture*, Jan 2018 (*Talk*)

-Indian Association of Cultivation of Sciences, India

-Indian Institutes of Science Education and Research, India

-Jadavpur University, India

-National Institute of Pharmaceutical Education and Research, India

Roy, S. “Small Molecule Tools to Investigate Chemical and Biological Processes” *Invited Lecture*, The University of Mississippi, Department of BioMolecular Sciences, Oxford, Mississippi, Mar 2017 (*Talk*).

Roy, S. “Discovery and Optimization of Novel Inhibitors of the Mitochondrial Permeability Transition Pore” 25th *International Society of Heterocyclic Chemistry Congress*, Santa Barbara, Aug 2015 (*Talk*).

Roy, S.; Spilling, C. D. “Synthesis of the C(10)-C(17) Unit of Amphidinolides C, C2, & F, Potent Cytotoxic Macrolides” *Joint 46th Midwest and 39th Great Lakes Regional Meeting of the ACS*, St. Louis, Oct 2011 (*Poster*).

Roy, S.; Spilling, C. D. “Stereoselective Synthesis of Tetrahydrofuran Rings: An Expedient Entry to Epoxy Lipids from Australian Brown Alga” *Abstracts of Papers, 242nd ACS National Meeting*, Denver, Aug 2011 (*Talk*).

Roy, S.; Spilling, C. D. “Stereoselective Synthesis of Tetrahydrofuran Ring-Containing Biologically Active Natural Products” Graduate School Research Fair, UMSL, St. Louis, MO, (*Received an Award* in Ph.D. Natural Sciences Division) Apr 2011 (*Poster*).

Roy, S.; Spilling, C. D. "Synthetic Studies toward Amphidinolide C & Amphidinolide F: Potent Cytotoxic Macrolides"
Invited Lecture, University of Kalyani, West Bengal, India, Jan 2011 (*Talk*).

Roy, S.; Spilling, C. D. "Synthetic Studies toward Amphidinolide C & Amphidinolide F: Potent Cytotoxic Macrolides"
Abstracts of Papers, *23rd Annual Organic Chemistry Day*, Columbia, MO; *Graduate School Research Fair, UMSL*, St. Louis, MO, Apr 2010 (*Poster*).

Roy, S.; Spilling, C. D. "Synthesis of the C(18)-C(34) Fragment of Amphidinolide C & the C(18)-C(29) Fragment of Amphidinolide F, Potent Cytotoxic Macrolides" Graduate School Research Fair, UMSL, St. Louis, MO, (*Received the Sigma Xi Award as well as the First Place in Ph.D. Chemistry Division (Poster)*).

Roy, S.; Spilling, C. D. "Synthesis of the C(18)-C (34) Fragment of Amphidinolide C & the C(18)-C(29) Fragment of Amphidinolide F, Potent Cytotoxic Macrolides" Abstracts of Papers, *238th ACS National Meeting*, Washington DC, Aug 2009 (*Talk*).