

NAME: **Mohammad Abrar Alam**

eRA COMMONS USER NAME (credential, e.g., agency login): mabraram

POSITION TITLE: Associate Professor of Chemistry

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Aligarh Muslim University, Aligarh, India	B.Sc.	06/2002	Chemistry & Biology
Aligarh Muslim University, Aligarh, India	M.Sc.	06/2004	Organic Chemistry
Indian Institute of Technology, Kanpur, India	Ph.D.	06/2009	Organic Synthesis
University of Minnesota, Duluth, MN	Postdoctoral	05/2012	Medicinal Chemistry

B. Positions and Honors

Positions and Employment

2012 - 2014 Adjunct Assistant Professor, Rowan University, Glassboro, NJ
2014 - 2015 Visiting Assistant Professor, Arkansas State University, Jonesboro, AR
2015 - 2019 Assistant Professor, Arkansas State University, Jonesboro, AR
2019 - Associate Professor, Arkansas State University, Jonesboro, AR

Other Experience and Professional Memberships

2011 - American Chemical Society Membership
2012 - Reviewer, Journal of Organic Chemistry
2012 - Reviewer, Bioorganic & Medicinal Chemistry
2016 - Reviewer, Antibiotics
2017 - Reviewer, Infection and Drug Resistance
2017 - 2019 Guest editor, Current Organic Synthesis
2018 - Reviewer, Journal of Antibiotics
2018 - Reviewer, Molecules
2018 - Reviewer, European Journal of Medicinal Chemistry
2018 - Reviewer, Toxins
2019 - Reviewer, Microbial Drug Resistance
2020 - Journal of Medicinal Chemistry
2020 - Guest editor, Molecules
2020 - NSF MRI grant study section panel
2020 - Grant reviewer: ACS petroleum grant funds
2020 - Grant reviewer: Fulbright Junior Research Award
2021 - NSF GRFP application study panel
2021 - Review Editor, Frontiers of Chemistry, Medicinal and Pharmaceutical Chemistry
2022 - Reviewer, Organic Chemistry by John Mc Murry

Honors

2004 - 2006 Junior Research Fellowship, CSIR-India
2006 - 2009 Senior Research Fellowship, CSIR-India
2017 New Investigator of the Year Award, Arkansas Biosciences Institute, Arkansas, USA
2019 - 2024 The first Buddy Beck faculty fellowship award, College of Sciences and Mathematics, Arkansas

Complete List of Published Work in My Bibliography:

<https://scholar.google.com/citations?user=FqrLrCUAAA&hl=en>

<https://www.ncbi.nlm.nih.gov/myncbi/collections/bibliography/44707082/>

Complete list of Publications (*corresponding author)

Patents

1. Alam*, M. A. Nootkatone derivatives and methods of using the same (**2022**, Patent pending)
2. Alam*, M. A. Antimicrobial agents and the methods of synthesizing antimicrobial agents. United States Patent Application 20170340609, **2020**
3. Alam*, M. A. Cytotoxic agents, anticancer agents and the methods of synthesizing the cytotoxic and anticancer agents. US Patent WO 2020018997 A1, **2020**
4. Mereddy, V. R.; Drewes, L. R.; Alam, M. A.; Jonnalagadda, S. K.; Gurrapu, S. "Therapeutic compounds" PCT Int. Appl. **2013**, WO 2013109972 A2 20130725.

Book Chapter

5. Alam*, M. A. Thiazole, a Privileged Scaffold in New Drug Discovery. Editor: Bin Yu, Elsevier: Privileged Scaffolds in Drug Discovery. **2023** (Chapter has been accepted for publication)

Manuscripts (Peer-reviewed)

6. Nisar, R.; Adhikary, S.; Ahmad, S.; Alam*, M. A. In Vitro Antimelanoma Properties of Verbena officinalis Fractions. *Molecules* **2022**, 27 (19), 6329. <https://doi.org/10.3390/molecules27196329>
7. Raj KC, H.; Gilmore, D. F.; Alam*, M. A., Development of 4-[4-(Anilinoethyl)-3-phenyl-pyrazol-1-yl] Benzoic Acid Derivatives as Potent Anti-Staphylococci and Anti-Enterococci Agents. *Antibiotics* **2022**, 11 (7), 939. <https://doi.org/10.3390/antibiotics11070939>
8. Alam*, M. A. Domino/Cascade and Multicomponent Reactions for the Synthesis of Thiazole Derivatives. *Curr. Org. Chem.* **2022**, 26 (4), 343. <https://www.eurekaselect.com/article/120860> (**invited perspective**)
9. Alam*, M. A. Anti-bacterial pyrazoles: tackling resistant bacteria. *Future Med. Chem.*, **2022**, 14 (15), 343. <https://doi.org/10.4155/fmc-2021-0275> (**invited review**)
10. Alkhaibari, A.; Raj H. K.C.; Dumi, H. A.; Gilmore, D.; Alam*, M. A.; Novel pyrazoles as potent growth inhibitors of staphylococci, enterococci and Acinetobacter baumannii bacteria. *Future Med. Chem.*, **2022**, 14 (4), 233-244. (<https://doi.org/10.4155/fmc-2021-0140>).
11. Chambers, S. A.; Newman, M.; Frangie, M. M.; Savenka, A. V.; Basnakian, A. G.; Alam*, M. A. Antimelanoma activities of chimeric thiazole androstenone derivatives. *R. Soc. Open Sci.* **2021**, 8 (8), 210395. <https://doi.org/10.1098/rsos.210395>
12. Hansa, R. K. C.; Khan, M. M. K.; Frangie, M. M.; Gilmore, D. F.; Shelton, R. S.; Savenka, A. V.; Basnakian, A. G.; Shuttleworth, S. L.; Smeltzer, M. S.; Alam*, M. A. 4-4-(Anilinoethyl)-3-[4-(trifluoromethyl)phenyl]-1H-pyrazol-1-ylbenzoic acid derivatives as potent anti-gram-positive bacterial agents. *Eur. J. Med. Chem.*, **2021**, 219, 113402. <https://doi.org/10.1016/j.ejmech.2021.113402>
13. Alkhaibari, I. S.; Raj K. C., H.; Alnufaie, R.; Gilmore, D.; Alam*, M. A. Synthesis of Chimeric Thiazolo-Nootkatone Derivatives as Potent Antimicrobial Agents. *ChemMedChem* **2021**, 16 (17), 2628. <https://doi.org/10.1002/cmdc.202100230>
14. Alkhaibari, I. S.; KC, H. R.; Roy, S.; Abu-gazleh, M. K.; Gilmore, D. F.; Alam*, M. A. Synthesis of 3,5-Bis(trifluoromethyl)phenyl-Substituted Pyrazole Derivatives as Potent Growth Inhibitors of Drug-Resistant Bacteria. *Molecules* **2021**, 26 (16), 5083. <https://doi.org/10.3390/molecules26165083>
15. Saleh, I.; Raj Kc, H.; Roy, S.; Abugazleh, M. K.; Ali, H.; Gilmore, D.; Alam*, M. A. Design, synthesis, and antibacterial activity of N-(trifluoromethyl)phenyl substituted pyrazole derivatives. *RSC Med. Chem.*, **2021**, 12 (10), 1690. <https://doi.org/10.1039/D1MD00230A>.
16. Alnufaie, R.; Ali, M. A.; Alkhaibari, I. S.; Roy, S.; Day, V. W.; Alam*, M. A. Benign synthesis of fused-thiazoles with enone-based natural products and drugs for lead discovery. *New J. Chem.*, **2021**, 45 (13), 6001. DOI <https://doi.org/10.1039/D1NJ00380A>

17. Delancey, E.; Allison, D.; KC, H. R.; Gilmore, D. F.; Fite, T.; Basnakian, A. G.; Alam*, M. A., Synthesis of 4,4'-(4-Formyl-1H-pyrazole-1,3-diyl)dibenzoic Acid Derivatives as Narrow Spectrum Antibiotics for the Potential Treatment of *Acinetobacter Baumannii* Infections. *Antibiotics* **2020**, 9 (10), 650. <https://doi.org/10.3390/antibiotics9100650>
18. Alnufaie, R.; Alsup, N.; Kc, H. R.; Newman, M.; Whitt, J.; Chambers, S. A.; Gilmore, D.; Alam*, M. A., Design and synthesis of 4-[4-formyl-3-(2-naphthyl)pyrazol-1-yl]benzoic acid derivatives as potent growth inhibitors of drug-resistant *Staphylococcus aureus*. *J Antibiot.*, **2020**, 73 (12), 818. <https://doi.org/10.1038/s41429-020-0341-2>.
19. Alnufaie, R.; Raj, H. KC.; Alsup, N.; Whitt, J.; Chambers, S. A.; Gilmore, D.; Alam*, M. A. Synthesis and Antimicrobial Studies of Coumarin-Substituted Pyrazole Derivatives as Potent Anti-*Staphylococcus aureus* Agents. *Molecules* **2020**, 25 (12), 2758. <https://doi.org/10.3390/molecules25122758>
20. Whitt, J.; Duke, C.; Ali, M. C.; Chambers, S. A.; Khan, M. M. K.; Gilmore, D.; Alam*, M. A. Synthesis and Antimicrobial Studies of 4-[3-(3-Fluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic Acid and 4-[3-(4-Fluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic., *ACS omega* **2019**, 4 (10), 14284. <https://doi.org/10.1021/acsomega.9b01967>
21. Alam*, M. A. Methods for Hydroxamic Acid Synthesis. *Curr. Org. Chem.*, **2019**, 23 (9), 978. DOI: [10.2174/1385272823666190424142821](https://doi.org/10.2174/1385272823666190424142821)
22. Whitt, J.; Duke, C.; Sumlin, A.; Chambers, S. A.; Alnufaie, R.; Gilmore, D.; Fite, T.; Basnakian, A. G.; Alam*, M. A. Synthesis of Hydrazone Derivatives of 4-[4-Formyl-3-(2-oxochromen-3-yl)pyrazol-1-yl]benzoic acid as Potent Growth Inhibitors of Antibiotic-resistant *Staphylococcus aureus* and *Acinetobacter baumannii*. *Molecules* **2019**, 24 (11), 2051. <https://doi.org/10.3390/molecules24112051>
23. Alam*, M. A. Catalysis and the Synthesis of Pharmacologically Small Molecules. *Curr. Org. Chem.*, **2019**, 23 (9), 976. <https://doi.org/10.2174/138527282309190710102427>
24. Ali, M. A.; Alam*, M. A. Novel photoresponsive cyclicparaphenylenediazenes: structure, strain energy, cis–trans isomerization, and electronic properties. *Photochem Photobiolog Sci.*, **2019**, 18 (5), 1185-1196. <https://link.springer.com/article/10.1039/c8pp00502h>
25. Ali, M. A.; Okolo, C.; Alsharif, Z. A.; Whitt, J.; Chambers, S. A.; Varma, R. S.; Alam*, M. A., Benign Synthesis of Thiazolo-androstenone Derivatives as Potent Anticancer Agents. *Org. Lett.*, **2018**, 20 (18), 5927. <https://doi.org/10.1021/acs.orglett.8b02587>
26. Okolo, C.; Ali, M. A.; Newman, M.; Alsharif, Z. A.; Whitt, J.; Chambers, Alam*, M. A. Hexafluoroisopropanol-Mediated Domino Reaction for the Synthesis of Thiazolo-androstenones: Potent Anticancer Agents. *ACS Omega* **2018**, 3 (12), 17991. <https://doi.org/10.1021/acsomega.8b02840>
27. Zakeyah, A. A.; Whitt, J.; Duke, C.; Gilmore, D. F.; Meeker, D. G.; Smeltzer, M. S.; Alam*, M. A., Synthesis and antimicrobial studies of hydrazone derivatives of 4-[3-(2,4-difluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic acid and 4-[3-(3,4-difluorophenyl)-4-formyl-1H-pyrazol-1-yl]benzoic acid. *Bioorg. Med. Chem. Lett.*, **2018**, 28 (17), 2914. <https://doi.org/10.1016/j.bmcl.2018.07.016>
28. Nelson, G. L.; Williams, M. J.; Jonnalagadda, S.; Alam, M. A.; Mereddy, G.; Johnson, J. L.; Jonnalagadda, S. K. Synthesis and Evaluation of Baylis-Hillman Reaction Derived Imidazole and Triazole Cinnamates as Antifungal Agents. *Int. J. Med. Chem.*, **2018**, Article ID 5758076. <https://doi.org/10.1155/2018/5758076>
29. Alsharif, Z.; Ali, M. A.; Alkhattabi, H.; Jones, D.; Delancey, E.; Ravikumar, P. C.; Alam*, M. A. Hexafluoroisopropanol mediated benign synthesis of 2H-pyrido[1,2-a]pyrimidin-2-ones by using a domino protocol. *New J. Chem.*, **2017**, 41 (24), 14862. <https://doi.org/10.1039/C7NJ03376A>
30. Ali, M. A.; Alam*, M. A., Theoretical studies on the structure and thermochemistry of cyclicparaphenylenediazenes. *RSC Adv.*, **2017**, 7 (64), 40189. <https://doi.org/10.1039/C7RA06409H>
31. Alsharif, Z. A.; Alam*, M. A., Modular synthesis of thiazoline and thiazole derivatives by using a cascade protocol. *RSC Adv.*, **2017**, 7 (52), 32647. <https://doi.org/10.1039/C7RA05993K>
32. Allison, D.; Delancey, E.; Ramey, H.; Williams, C.; Alsharif, Z. A.; Al-Khattabi, H.; Ontko, A.; Gilmore, D.; Alam*, M. A., Synthesis and antimicrobial studies of novel derivatives of 4-(4-formyl-3-phenyl-1H-pyrazol-1-yl)benzoic acid as potent anti-*Acinetobacter baumannii* agents. *Bioorg. Med. Chem. Lett.*, **2017**, 27 (3), 387. <https://doi.org/10.1016/j.bmcl.2016.12.068>
33. Brider, J.; Rowe, T.; Gibler, D. J.; Gottsponer, A.; Delancey, E.; Branscum, M. D.; Ontko, A.; Gilmore, D.; Alam*, M. A., Synthesis and antimicrobial studies of azomethine and N-arylamine derivatives of 4-(4-formyl-3-phenyl-1H-pyrazol-1-yl)benzoic acid as potent anti-methicillin-resistant *Staphylococcus aureus* agents. *Med. Chem. Res.*, **2016**, 25 (11), 2691. <https://link.springer.com/article/10.1007/s00044-016-1678-8>

34. Alam*, M. A.; Alsharif, Z.; Alkhatabi, H.; Jones, D.; Delancey, E.; Gottsponer, A.; Yang, T., Hexafluoroisopropyl alcohol mediated synthesis of 2,3-dihydro-4H-pyrido[1,2-a]pyrimidin-4-ones. *Sci. Rep.*, **2016**, 6 (1), 36316. <https://www.nature.com/articles/srep36316>
35. Gurrapu, S.; Jonnalagadda, S. K.; Alam, M. A.; Ronayne, C. T.; Nelson, G. L.; Solano, L. N.; Lueth, E. A.; Drewes, L. R.; Mereddy, V. R., Coumarin carboxylic acids as monocarboxylate transporter 1 inhibitors: In vitro and in vivo studies as potential anticancer agents. *Bioorg. Med. Chem. Lett.*, **2016**, 26 (14), 3282. <https://doi.org/10.1016/j.bmcl.2016.05.054>
36. Alam, M. A.; Arora, K.; Gurrapu, S.; Jonnalagadda, S. K.; Nelson, G. L.; Kiprof, P.; Jonnalagadda, S. C.; Mereddy, V. R., Synthesis and evaluation of functionalized benzoboroxoles as potential anti-tuberculosis agents. *Tetrahedron* **2016**, 72 (26), 3795. <https://doi.org/10.1016/j.tet.2016.03.038>
37. Gurrapu, S.; Jonnalagadda, S. K.; Alam, M. A.; Nelson, G. L.; Sneve, M. G.; Drewes, L. R.; Mereddy, V. R. Monocarboxylate Transporter 1 Inhibitors as Potential Anticancer Agents. *ACS Med. Chem. Lett.*, **2015**, 6 (5), 558. <https://doi.org/10.1021/acsmedchemlett.5b00049>
38. Alam*, M. A.; Reddy, Y. S.; Ali, A. New and Under Explored Epigenetic Modulators in Search of New Paradigms. *Med. Chem.*, **2015**, 11 (3), 271. <https://www.ingentaconnect.com/content/ben/mc/2015/00000011/00000003/art00009>
39. Alam*, M. A. Potential Therapeutic Agents from the Red Sea Organisms. *Med. Chem.*, **2014**, 10 (6), 550. <https://www.ingentaconnect.com/content/ben/mc/2014/00000010/00000006/art00003>
40. Nelson, G.; Alam*, M. A.; Atkinson, T.; Gurrapu, S.; Kumar, J. S.; Bicknese, C.; Johnson, J. L.; Williams, M. Synthesis and Evaluation of *p*-N, *N*-Dialkyl Substituted Chalcones as *anti*-Cancer agents. *Med Chem Res.*, **2013**, 22, 4614. <https://link.springer.com/article/10.1007/s00044-013-0469-8>
41. Tekkam, S.; Alam, M. A.; Just, M. J.; Berry, S. M.; Johnson, S. L.; Jonnalagadda, S. C.; Mereddy V. R. Concise Stereoselective Syntheses of Functionalized Pyroglutamates. *Anticancer Agents Med. Chem.*, **2013**, 13 (10), 1514. <https://www.ingentaconnect.com/content/ben/acamc/2013/00000013/00000010/art00006>
42. Kumar, J. S.; Alam, M. A.; Gurrapu, S.; Nelson, G.; Williams, M.; Corsello, M. A.; Johnson, J. L.; Jonnalagadda, S. C.; Mereddy, V. R. Synthesis and Biological Evaluation of Novel Benzoxaboroles as Potential Antimicrobial and Anticancer Agents. *J. Het. Chem.*, **2013**, 50 (4), 814. <https://doi.org/10.1002/jhet.1777>
43. Tekkam, T.; Alam, M. A.; Jonnalagadda, S. C.; Mereddy, V. R. Novel methodologies for the synthesis of functionalized pyroglutamates. *Chem. Commun.*, **2011**, 47 (11), 3219. <https://doi.org/10.1039/C0CC05609J>
44. Just, M. J.; Tekkam, S.; Alam, M. A.; Jonnalagadda, S. C.; Johnson, J. L.; Mereddy, V. R. Stereoselective synthesis of functionalized pyroglutamates. *Tetrahedron Lett.*, **2011**, 52 (41), 5349. <https://doi.org/10.1016/j.tetlet.2011.08.029>
45. Kumar, A.; Alam, M. A.; Rani, S.; Vankar, Y. D. Synthesis of 1,4-dideoxy-1,4-iminoheptitol and 1,5-dideoxy-1,5-iminoocitols from D-xylose. *Carbohydrate Res.*, **2010**, 345 (9), 1142. <https://doi.org/10.1016/j.carres.2010.04.016>
46. Alam, M. A.; Vankar, Y. D. Total synthesis of (+)-lentiginosine from D-glucose. *Tetrahedron Lett.*, **2008**, 49 (38), 5534. <https://doi.org/10.1016/j.tetlet.2008.07.057>
47. Alam, M. A.; Kumar, A.; Vankar, Y. D. Total Synthesis of L-(+)-Swainsonine and Other Indolizidine Azasugars from D-Glucose. *Eur. J. Org. Chem.*, **2008**, 29, 4972. <https://doi.org/10.1002/ejoc.200800649>

Meeting Papers

Poster presentation

1. Gilmore, D. F.; Raj KC. H.; Roy, S.; Alam, M. A. Finding the mode of action of novel anti-microbial agents. South Central Branch of American Society for Microbiology, Louisiana State University Health Sciences Center, Shreveport Downtown Convention Center, October 27-29, **2022**.
2. Adhikary, S.; Alam, M. A. In vitro and in vivo anti-melanoma studies of thiazolo-ethisterone derivatives. ACS FALL 2022. Sustainability in a Changing World. Chicago, IL August 21 - 25, **2022**.
3. Stillwell, A.; Adhikary, S.; Alam, M. A. In vitro and in vivo anti-melanoma studies of fused thiazolo-androstenone derivatives. ACS FALL 2022. Sustainability in a Changing World. Chicago, IL August 21 - 25, **2022**.

4. Roberts, J.; King, S.; Roy, S.; Raj H. KC.; Gilmore, D.; Shields, R.; Alam, M. A.; Fluoro-substituted pyrazole derivatives as potent growth inhibitors of *Streptococcus mutans*. ACS FALL 2022. Sustainability in a Changing World. Chicago, IL August 21 - 25, **2022**.
5. Nisar, R.; Adhikary, S.; Ahmad, S.; Alam, M. A. Antimelanoma Properties of *Verbena officinalis*. ACS FALL 2022. Sustainability in a Changing World. Chicago, IL August 21 - 25, **2022**.
6. Roberts, J.; Roy, S.; Gilmore, D.; Alam, M. A. Synthesis and antimicrobial properties of Catechol and Phenol Derived thiazoles. Central Arkansas Undergraduate Summer Research Symposium, UAMS Little Rock, July 27, **2022**.
7. Raj KC.; Gilmore, F. G.; Alam, M. A. Antimicrobial Studies of 1,3-Diphenylpyrazole-derived Anilines Against Methicillin-resistant *Staphylococcus aureus*. 2022 In Vitro Biology Meeting, June 4-7, **2022**, San Diego, CA
8. Roy, S.; Alam, M. A. Pyrazole-derived anilines as potent antimicrobial agents. **2021** SOUTHEAST REGIONAL IDEA CONFERENCE. Nov. 12-14. **2021**.
9. Mahbub Kabir Khan, Ibrahim Saleh, Hansa Raj KC, Thomas Langowski, Malik Raynor, Mozna Khraiwesh, Mary Macdonald, David Gilmore, Mohammad A. Alam. Synthesis and Antimicrobial Studies of Novel Pyrazole-Derived Benzoic Acids. Abstract ID: MHSRS-20-00330. **2020**
10. Raj, H. K. C.; Gilmore, D.; Alam, M. A. Antimicrobial Studies of 1,3-Diphenylpyrazole-derived Anilines against Methicillin-resistant *Staphylococcus aureus*. 5th Annual LSUS Regional Symposium, Shreveport, LA, USA, March 12, **2020**.
11. Ibrahim, S.; H. K. C.; Gilmore, D.; Alam, M. A. Synthesis of trifluoromethyl phenyl-derived pyrazole as potent growth inhibitors of drug resistant bacteria. 5th Annual LSUS Regional Symposium, Shreveport, LA, USA, March 12, **2020**.
12. Khan, M. K.; H. K. C.; Gilmore, D.; Alam, M. A. Synthesis of pyrazole-based fluoro-aniline derivatives as potent microbial agents. 5th Annual LSUS Regional Symposium, Shreveport, LA, USA, March 12, **2020**.
13. Nickolas Alsup, Rawan Alnufaie, Mathew Newman, David Gilmore, Mohammad A. Alam, Synthesis of naphthalene-derived pyrazoles as potent growth inhibitors of drug resistant bacteria. ABI Statewide Symposium is hosted by Arkansas State University September 24-25, **2019**.
14. ChrisTina Okolo, Matthew Newman, Drew Chambers. Synthesis and Antiproliferative Activity of Thiazolo-Androstenones Against Breast Cancer Cell Lines. CREATE@Astate, Arkansas State University, Jonesboro. April 15, **2019**.
15. Chambers, A.; Newman M.; Alam, M. A. Design, Synthesis, and anti-Melanoma Studies of novel Thiazole-Androstenone Derivatives. CAURS UAMS, Little Rock, AR, July 24, **2019**.
16. Whitt, J.; Khan, M. M. K.; Sumlin, A.; Gilmore, D.; Alam, M. A. Synthesis and Antimicrobial Studies of Potent 4-[1-(4-carboxyphenyl)-4-formyl-pyrazol-3-yl]benzoic Acid derivatives. Drug Discovery and Development Colloquium 2019 UAMS, Little Rock, AR, June 13-15, **2019**.
17. Alnufaie, R.; Sumlin, A.; Whitt, J.; Gilmore, D.; Alam, M. A. Synthesis and Antimicrobial Studies of hydrazone Derivatives of Naphthalene-derived pyrazoles. LSAMP. **2018**
18. Machado, M. F.; Newman, M.; Chambers, A.; Okolo, C.; Alam, M. A. Synthesis and anti-Melanoma Studies of novel Thiazole-Androstenone Derivatives. LSAMP, **2018**
19. Okolo, C.; Jedidiah, W.; Conrad, W.; Alam, M. A. Fused thiazoline-androstane derivatives as potential anticancer agents. 255th ACS National Meeting & Exposition, New Orleans, LA, United States, March 18-22, **2018**, Pages MEDI-179.
20. Conrad, W.; Jedidiah, W.; Okolo, C.; Alam, M. A. Antimelanoma studies of novel pyrazole and fused thiazoline-androstanedione derivatives. 255th ACS National Meeting & Exposition, New Orleans, LA, United States, March 18-22, **2018**, Pages MEDI-125.
21. Siddiqua, A.; Alam, M. A. Morphological Investigation of Mammalian Cancer Cells. The Arkansas Academy of Science Annual Meeting, **2018**, April 6-7, 2018.
22. Whitt, J.; Okolo, C.; Duke, C.; Gilmore, D.; Alam, M. Development of Halogenated Pyrazole-based Antimicrobial agents. ABI Fall Research Symposium, Fayetteville, AR, **2017**. 09/15/2017
23. Alam, M. A.; Gilmore, D.; Conrad, W.; Whitt, J.; Laws, J. A. Synthesis and antibacterial studies of difluorophenyl pyrazole derivatives. Central Arkansas Summer Undergraduate Research Symposium: UAMS Little Rock, **2017**, 07/26/2017.
24. Laws, H. J.; Alsharif, A. A.; Duke, C.; Gilmore, D.; Alam, M. A. Development of fluorophenyl pyrazole based antibiotics as potent anti-Acinetobacter baumannii agents, Create @ State, **2017**, 04/20/2017.

25. Aldharif, Z. A.; Okolo, C.; Alam, M. A. Efficient approach to synthesize novel thiazoles and thiazolines, *Create @ State*, **2017**, 04/20/2018.
26. Ramey, H.; Laws, H.; Gilmore, D.; Alam, M. A. Synthesis and antibacterial studies of coumarin-derived pyrazole derivatives, *Council on Undergraduate Research: 2017*; University of Memphis, Tennessee.
27. Allison, D.; Williams, C.; Gilmore, D.; Alam, M. A. Synthesis and antibacterial studies of pyrazole-derived alkenes, *Council on Undergraduate Research: 2017*; University of Memphis, Tennessee.
28. Allison, D.; Delaney, E.; Ramey, H.; Williams, C.; Gilmore, D.; Alam, M. Development of pyrazole based antibiotics as potent anti-*Acinetobacter baumannii* agents. Arkansas STEM Coalition, Capitol Little Rock, **2017**.
29. Alam, M.; Allison, D.; Delancey, E.; Jones, D.; Gottspomer, A.; Gilmore, D. Synthesis and antimicrobial studies of hydrophilic pyrazole derivatives as potent antibacterial agents, *American Chemical Society: Philadelphia, PA*, **2016**; pp MEDI-126.
30. Alam, M.; Jones, D.; Alsharif, Z.; Alkhatabi, H. In *Synthesis and antimicrobial studies of hydrophilic pyrazole derivatives as potent antibacterial agents*, *American Chemical Society: 2016*; pp MEDI-156.
31. Alam, M.; Alsharif, Z.; Alkhatabi, H.; Jones, D.; Ramey, H. Sustainable synthesis of pyrido pyrimidinones, *American Chemical Society: Philadelphia, PA*, **2016**; pp ORGN-680.
32. Alam, M.; Alkhatabi, H.; Alsharif, Z.; Jones, D. In *Synthesis and biological studies of dihydropyrido pyrimidinones*, *American Chemical Society: 2016*; pp MEDI-365.
33. Alsharif, Z.; Alkhatabi, H.; Jones, D.; Gottspomer, A.; Delaney, E.; Ramey, H.; Alam, M. A. Sustainable Approach to Synthesize Nitrogen Heterocycles as Potential Anticancer Agents. *Create @ State*, **2016**.
34. Rowe, T.; Allison, D.; Delany, E.; Gottspomer, A.; Gibler, D.; Branscum, M.; Gilmore, D.; Alam, M. A. Synthesis and Antimicrobial Studies of Pyrazole Derivatives as Potent Anti-Methicillin Resistant *Staphylococcus aureus* Agents, *Create @ State*, **2016**.
35. Trent, R.; Gibler, D. J.; Jamaricus, B.; Ontko, A. C.; Gilmore, D. Alam, M. A. Synthesis and antimicrobial studies of pyrazole derivatives as potent antibacterial agents. 67th Southeast/71st Southwest Joint Regional Meeting of the American Chemical Society, Memphis, TN, United States, November 4-7, **2015**. SERMACS-SWRM-254.
36. Rowe, T.; Brider, J.; Branscum, M.; Alam, M. A. Synthesis of pyrazole derivatives as potential cytotoxic agents. 249th ACS National Meeting & Exposition, Denver, CO, United State, March 22-26, **2015**.
37. Branscum, M.; Rowe, T.; Brider, J.; Alam, M. A. Design and synthesis of coumerin-aminoethylphenol hybrids as potential epigenetic modulators. 249th ACS National Meeting & Exposition, Denver, CO, United State, March 22-26, **2015**.
38. Shirisha, G.; Jonnalagadda, S. K.; Alam, M. A.; Nelson, G. L.; Murthy, M. S.; Hill, M. A.; Ronayne, C. T. Novel small molecule MCT inhibitors as anticancer agents. 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, **2014**.
39. Alam, M. A.; Bacani, M. R.; Holt, C. M.; Murthy, M. S. R. C.; Jonnalagadda, S. C. 39th Northeast Regional Meeting of the American Chemical Society, New Haven, CT, United States, October 23-26, **2013**.
40. Yeruva, S. R.; Fishbein, S. H.; Chary, P. K.; Alam, M. A.; Murthy, M. S. R. C.; Jonnalagadda, S. C. Synthesis and Biological Evaluation of Novel Aminobenzoboroxoles as Potential Anti-Cancer Agents. 39th Northeast Regional Meeting of the American Chemical Society, New Haven, CT, United States, October 23-26, **2013**.
41. Alam, M. A.; Just, M. J.; Johnson, J. L.; Berry, S. M.; Jonnalagadda, S. C.; Mereddy, V. R. Stereoselective synthesis of chiral borono-pyroglutamates. 243rd ACS National Meeting & Exposition, San Diego, CA, United States, March 25-29, **2012**
42. Alam, M. A.; Atkinson, Mereddy, V. R. Synthesis and evaluation of p-N,N-dialkyl substituted chalcones as potential anticancer agents. 243rd ACS National Meeting & Exposition, San Diego, CA, United States, March 25-29, **2012**
43. Alam, M. A.; Nelson, G.; Gurrapu, Mereddy, V. R. 243rd ACS National Meeting & Exposition, San Diego, CA, United States, March 25-29, **2012**
44. Alam, M. A.; Gurrapu, Shirisha; Mereddy, Venkatram R. 244th ACS National Meeting & Exposition, Philadelphia, PA, United States, August 19-23, **2012**.
45. Williams, M. J.; Corsello, M. A.; Alam, M. A.; Mereddy, V. R. 244th ACS National Meeting & Exposition, Philadelphia, PA, United States, August 19-23, **2012**.

Oral presentations

46. Raj KC. H.; Gilmore, D.; Roy, S.; Alam, M. A. Finding the mode of action of novel anti-microbial agents. South Central Branch of American Society for Microbiology, Louisiana State University Health Sciences Center, Shreveport Downtown Convention Center, October 27-29, **2022**.
47. Roy, S; Roberts, J; Alam, M. A. Synthesis of catechol-derived thiazole derivatives as potent antimicrobial agents. ACS FALL 2022. Sustainability in a Changing World. Chicago, IL August 21 - 25, **2022**
48. Raj, KC; Gilmore, D; Alam, M. A. Antimicrobial Studies of 1,3-Diphenylpyrazole-derived Anilines Against Methicillin-resistant *Staphylococcus aureus*. **2022** In Vitro Biology Meeting, San Diego, California, June 4-7, **2022**.
49. Alam, M. A. Synthesis and Antimelanoma Studies of Fused-Thiazole Derivatives. International Interdisciplinary Virtual Conference on "Drug, Disease and Development", Department of Chemistry & IQAC Mungasaji Maharaj Mahavidyalaya, Maharashtra, India. December 9-10, **2020**.
50. Laws, H. J.; Alam, M. A. Synthesis, antibacterial, and cytotoxicity studies of pyrazole-derived compounds. Create @ State, **2018**, April 16th 2018.
51. Alam, M. A., Newman, M.; Chambers, S. A. Synthesis and anti-Melanoma studies of Thiazolo-Androstenone derivative. 1st international Conference on Chemistry, Pharmacy and Medical Sciences (ICCPM) the University of Bengkulu-Indonesia, 27th – 28th, **2018**.
52. Delancey, E.; Nakaya, K.; Williams, C.; Gilmore, D.; Alam, M. A. Synthesis and antibacterial studies of naphthalene containing pyrazole-derived hydrazones, Council on Undergraduate Research: **2017**; University of Memphis, Tennessee.
53. Williams, C.; Duke, C., Whitt, J.; Laws, J. Synthesis and antibacterial studies of difluorophenyl pyrazole derivatives, Central Arkansas Undergraduate Summer Research Symposium: **2017**, the University of Arkansas for Medical Sciences, Little Rock, 07/26/2017.

Thesis Supervised/Supervising: Graduate Thesis (M.S. and Ph.D.) Advisor for

Zakeyah Ali Alsharif
Rawan Alnufaie
Mahbub Kabir Khan
Ibrahim Saleh
Subrata Roy
Sanjay Adhikari
Hansa Raj KC

Honors Thesis Supervised:

Jared Hastings

Undergraduate Students Supervised: Female and minority students including (listed in **bold**). Students with an asterisk (*) marks are co-authors in at least one peer-reviewed paper with me and they have intellectually contributed to the projects. All the students have presented their research at least one regional or national conference.

Jamarcus Bridger* (2014-2016)
Evan Delancey* (2014-2017)
Derika Jones* (2015-2016)
Conrad Williams* (2016-2018)
Nadezda Buntic (2017-2018)
Anthony Sumlin* (2018-2020)
Christina Okolo* (2017-2020)
Dumi Hewa* (2019-2021)
Abbey Stillwell (2021-)
Siam Chaudhary (2022 -

Trent Rowe* (2014-2016)
Adam Gotsponer* (2014-2017)
Koyuki Tanaka (2015-2016)
Jack Harold* (2017-2018)
Mathew Newman* (2018-2019)
Hung Tran (2019-2020)
Melissa Frangie* (2018-2020)
Jared Hastings (2020-2022)
Justin Roberts (2021-)

Michael Branscum* (2014-2016)
Hunter Ramey* (2015-2017)
Davin Allison* (2015-2017)
Cameron Duke* (2017-2019)
Jedidiah Whitt* (2017-2019)
Nickolas Alsup* (2019-2020)
Steven Chamber* (2018-2020)
Emma Thompson (2020-2021)
Emma Flippin (2022-)

Teaching: Taught the following courses

Organic Chemistry I
Organic Chemistry II
Advanced Organic Chemistry
Basics of Organic and Biochemistry
Basic General Chemistry
Pharmacology (antibiotics and anticancer modules)
Cell Biology (small molecules module)

Funding and Grants for Research Activities: Research data generated in my lab have helped to get several external and internal research grants.

1. *Grants in which I am the Principal Investigator (PI).*

INBRE Voucher Award, Alam, M. A. (PI) 01/01/23-04/30/23
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: In vivo toxicology studies of potent anti-melanoma agents
Amount of Funding: \$6,000

INBRE Voucher Award, Alam, M. A. (PI) 08/01/22-12/30/22
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Mass spectrometry data of 120 novel molecules from Statewide Mass Spectrometry Facility, Fayetteville, AR.
Amount of Funding: \$5,000

Summer Research Grant (SRG) Alam, M. A. (PI) 06/01/22-12/30/22
Source: External, Arkansas INBRE
Title: The goal of this project is to synthesize a number of amino-pyrazole derivatives
Amount of Funding: \$38,000

INBRE Voucher Award Alam, M. A. (PI) 01/01/22-04/30/22
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Mass spectrometry data of 200 novel molecules from Statewide Mass Spectrometry Facility, Fayetteville, AR.
Amount of Funding: \$6,500

Research Development Grant (RDG) Alam, M. A. (PI) 01/01/23-04/30/24
Source: INBRE Arkansas
Title: The synthesise of a number of fused-ethisterone as antimelanoma agents.
Amount of Funding: \$335,000

MRI 2117138, NSF Alam, Mohammad (PI) 08/01/2021-07/31/2024
Source: National Science Foundation (NSF)
MRI: Acquisition of a 400 MHz Nuclear Magnetic Resonance (NMR) for Research at Arkansas State University
Amount of Funding: \$346,000

ABI mini-grant Alam, Mohammad (PI) 7/01/21-6/30/23
Source: Arkansas Bioscience Institute
Title: Synthesis and antimicrobial studies of fused thiazolo-nootkatone derivatives
Amount of Funding: \$70,000

Research Development Grant (RDG) Alam, M. A. (PI) 06/01/20-12/30/22
Source: External, the University of Arkansas for Medical Sciences Winthrop P. Rockefeller Cancer Institute (WPRCI)
Title: The goal of this project is to synthesize a number of fused-thiazole develop antimelanoma agents.
Amount of Funding: \$261,000

INBRE Voucher Award Alam, M. A. (PI) 12/01/19-04/30/20
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: The goal of this project is to get mass spectrometry data of 200 novel molecules from Statewide Mass Spectrometry Facility, Fayetteville, AR.
Amount of Funding: \$5,000

INBRE Voucher Award Alam, M. A. (PI) 08/01/18-04/30/19
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Mass spectrometry data of 140 novel molecules from Statewide Mass Spectrometry Facility, Fayetteville, AR.
Amount of Funding: \$5,000

Shared Instrumentation Grant Alam, M. A. (PI) 01/01/19-04/30/19
Source: External, Arkansas IDeA Network of Biomedical Research Excellence (INBRE)
Title: Improving research and education at A-State through BioscreenC
Amount of Funding: \$20,000

INBRE Voucher Award Alam, M. A. (PI) 02/08/18-04/30/18
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: MRMS analysis of novel compounds
Amount of Funding: \$5,000

Research Development Grant Alam, M. A. (PI) 01/01/18-04/31/20
Source: External, Arkansas IDeA Network of Biomedical Research Excellence (INBRE)
Title: Novel pyrazole derivatives as antibacterial agents.
Amount of Funding: \$325,460

Shared Instrumentation Grant Alam, M. A. (PI) 01/01/18-04/30/18
Source: External, Arkansas IDeA Network of Biomedical Research Excellence (INBRE)
Title: Cryogenic storage container to store mammalian cells.
Amount of Funding: \$6,013

Pilot Study Grant Alam, M. A. (PI) 09/01/17-04/30/18
Source: External, Arkansas IDeA Network of Biomedical Research Excellence (INBRE)
Title: Cytotoxicity studies of novel pyrazole compounds as potent antimelanoma agents.
Amount of Funding: \$55,888

INBRE Voucher Award Alam, M. A. (PI) 05/01/15-04/30/16
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Mass spectrometry data of 200 novel molecules from Statewide Mass Spectrometry Facility, Fayetteville, AR.
Amount of Funding: \$5,000

INBRE Voucher Award Alam, M. A. (PI) 05/01/16-04/30/17
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Mass spectrometry data of 200 novel molecules from Statewide Mass Spectrometry Facility, Fayetteville, AR.
Amount of Funding: \$5,000

INBRE Voucher Award Alam, M. A. (PI) 02/01/17-09/30/17
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: In vivo toxicity data of one potent anti-Acinetobacter baumannii agent from DNA Damage and Toxicology Core Facility, UAMS Little Rock, AR.
Amount of Funding: \$5,000

INBRE Voucher Award Alam, M. A. (PI) 04/30/17-12/30/17

Source: External, Arkansas INBRE Core Facility Voucher Program
Title: In vivo toxicity studies of novel pyrazole derivatives
Amount of Funding: \$5,000

INBRE start-up grant Alam, M. A. (PI) 05/01/15-04/30/18
Source: External, INBRE UAMS
Title: Development of novel methodologies to synthesize small molecule heterocycles as potential antimicrobial and anticancer agents.
Amount of Funding: \$200,000

ABI start-up grant 200127 Alam, M. A. (PI) 05/01/15-04/30/18
Source: Internal, ABI A-State start-up grant
Title: Development of novel methodologies to synthesize thiazole derivatives as potential anticancer agents.
Amount of Funding: \$100,000

ABI mini-grant Alam, M. A. (PI) 05/01/17-04/30/18
Source: Internal, ABI A-State grant
Title: Novel pyrazole derivatives as anti-Gram-negative bacterial agents.
Amount of Funding: \$70,000

ABI mini-grant Alam, M. A. (PI) 07/01/18-05/31/20
Source: Internal, ABI A-State grant
Title: Synthesis and anti-breast cancer studies of novel thiazolo-androstenone derivatives
Amount of Funding: \$100,000

Teaching Undergraduate Research Fellowship Alam, M. A. (PI) 01/15/15-12/30/15
Source: Internal, Dean's Office, College of Science and Mathematics
Title: Synthesis and antimicrobial studies of novel coumarin derivatives.
Amount of Funding: \$5,000

Faculty Seed Grant Award Alam, M. A. (PI) 05/15/15-05/14/16
Source: Internal, Provost's office
Title: Development of a methodology to synthesize pyrido-pyrimidinones.
Amount of Funding: \$5,000

Faculty Research Award Alam, M. A. (PI) 06/01/16-05/31/17
Source: Internal, Faculty Research Award Committee (FRAC)
Title: Development of a novel methodology to synthesize novel thiazole derivatives by using hexafluoro isopropanol.
Amount of Funding: \$5,000

Summer Research Grant Alam, Mohammad (PI) 05/15/2020-08/15/2020
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Antibiofilm activities of novel pyrazole derivatives
Amount of Funding: \$37,078

Summer Research Grant Alam, Mohammad (PI) 05/15/2021-08/15/2021
Source: External, Arkansas INBRE Core Facility Voucher Program
Title: Antimelanoma studies of thiazole derivatives
Amount of Funding: \$35,631

Kays Foundation Grant Alam, Mohammad (PI) 08/01/2020-12/31/2021
Source: Kays Foundation Grant
Title: The determination of the mode of action of pyrazole derivatives.
Amount of Funding: \$15,000

2. *Grants in which I am serving or served as a co-I.*

MRI 2117138, NSF Alam, Mohammad (PI) 08/01/2020-07/31/2023
Source: National Science Foundation
Title: Acquisition of a Single Crystal X-ray Diffractometer as a Regional Resource for Research and Education
Amount of Funding: \$251,990

INBRE Arkansas Srivatson, Malathi (PI) 06/01/2016-04/30/2017
Source: Arkansas IDeA Network of Biomedical Research Excellence (INBRE)
Title: Improving research and education through multi-plate plate reader/bio-imager
Amount of Funding: \$50,000