GENERAL INFORMATION

Abbas G. Shilabin
Associate Professor of Organic Chemistry
Department of Chemistry
College of Arts and Sciences
East Tennessee State University
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Google Scholar Citations
Publons Peer Review Profile

EDUCATION

PhD – **Organic Chemistry**, Jul 2005, Institut für Organische Chemie der TU Clausthal, Germany. Advisor: Prof. Andreas Schmidt

PhD Dissertation

Title: Synthesis of Pyrrolobenzodiazepine Alkaloids Circumdatin A and B Natural Products with Antitumor Activity.
A formal total synthesis of natural products Circumdatin A and B.
Synthesis of seven-membered heterocyclic pyrrolobenzodiazepines. Preparation of more than 40 new tetracyclic pyrrolo[2,1-c][1,4]-benzodiazepines derivatives with potential antidepressant and anticancer activity.
Preparation of conjugated mesomeric betaines ([1,4]-benzodiazepine derivatives) possessing the vinamidinium chromophore.

TEACHING AND RESEARCH EXPERIENCE

Associate Professor, Aug 2020 - Present
Department of Chemistry
College of Arts and Sciences
East Tennessee State University
Johnson City, Tennessee, USA

Assistant Professor, Aug 2014 - 2020
Department of Chemistry
College of Arts and Sciences
East Tennessee State University
Johnson City, Tennessee, USA

Non-tenure Assistant Professor, Jan 2013 - Aug 2014 (spring and summer semesters)
Department of Chemistry
University of Maine, Maine & Augustana College, South Dakota

Post-doctoral Research Associate, Oct 2009 - Dec 2012
NIH Scholar
Department of Chemistry
Wesleyan University
Middletown, Connecticut, USA

Post-doctoral Fellow, Nov 2007 - Oct 2009
NIH Scholar
Department of Chemistry
Temple University
Philadelphia, Pennsylvania, USA

Post-doctoral Research Associate, Jul 2005 - Sep 2007
NIH Scholar
Department of Medicinal Chemistry and Pharmacognosy
University of Mississippi
Oxford, Mississippi, USA

COURSES TAUGHT

List of Courses Taught at ETSU

CHEM-2010 - Organic Chemistry I
CHEM-2011 - Organic Chemistry Lab I
CHEM-2020 - Organic Chemistry II
CHEM-2021 - Organic Chemistry Lab II
CHEM-3008 - Introduction to Honor Thesis
CHEM-3611 - General Integrated Lab
CHEM-4010 - Seminar in Chemistry
BIOL 4147/5147 Biochemistry of Macromolecules (Lecture and Lab)
CHEM-4621 - Advanced Integrated Lab-Structure
CHEM-4900 - Chemistry Research
CHEM-5900 - Independent Study
CHEM-5541 - Organic Reaction Mechanisms
CHEM-5950 - Research in Chemistry
CHEM 5957 - Special Topics in Chemistry (Medicinal Natural Products)

Previous Teaching Experiences

Introduction to General Chemistry I - Lecture and Lab

Introduction to General Chemistry II - Lecture and Lab
Advanced General Chemistry
Organic Chemistry I - Lecture and Lab
Organic Chemistry II - Lecture and Lab
Survey of Organic Chemistry and Biochemistry

RESEARCH AND SCHOLARSHIP

Research Interests

Medicinal Chemistry and Drug Discovery
Synthetic Organic Chemistry
Natural Products Chemistry
Bio-organic Chemistry

Ongoing Research

Jan 2014 – present. (East Tennessee State University)

- Isolation and Chemical Characterization of Novel Flavonoids from *Chromolaena Leivenisis*.
- Isolation and Structural Determination of Bioactive Metabolites from the Soil Bacteria, *Arthrobacter* sp. TAJX1902 and *Janthinobacterium lividum* TAJX1901.
- Design and synthesis of novel neuroprotective compounds using glutamate-induced excitotoxicity bioassay to prevent neurodegeneration and its accompanying behavioral deficits.
- Drug discovery and development of novel and selective inhibitors of the cannabinoid receptor type 2 (CB2) targeting neuroinflammatory and neurodegenerative disorders.
- Design and synthesis of novel PARP1 inhibitors with properties that permit brain penetration and retention.
- Isolation and purification of D-γ-tocotrienol (GT-3) from African palm oil as a strong candidate for mitigating the effects of radiation exposure.
- Fragment-based design, synthesis and evaluation of inhibitory activity of new non-β-lactam β-lactamases and transpeptidases inhibitors.
- Direct guided supervision of graduate and undergraduate students involved in multistep synthesis of pyrrolo[2,1-c][1,4]benzodiazepine derivatives and evaluation of their biological activities.
- Extraction, purification and structure determination of polyketide antibiotics produced by *Rhodococcus* soil bacterium strain MTM3W5.2 using HPLC, LCMS and 2D-NMR technics.

Oct 2009 – Dec 2012. (Wesleyan University)

- Synthetic/Bio-organic chemistry; designed, synthesized and evaluated inhibitory activity on β-Lactamase and DD-Peptidase inhibitors.
- Explored new PBP-based inhibitors in collaboration with computational chemist Prof. B. Jayaram to discover the inhibitory potential of 4-quinolonecarboxylate and β-hydoxyphosphonate class of compounds.
- Further investigated the chemical functionality and the substrate binding properties of target enzymes active site, using a number of modified substrates, novel inhibitors and potential effectors.

Nov 2007 – Oct 2009. (Temple University)

- Rationally designed and synthesized bio-inspired synthetic β-peptide-based biomaterials.
- Synthesized roughly a dozen enantiopure β-lactams and sulfo-SDTB probing agent.

Jul 2005 – Oct 2007. (University of Mississippi)

- Carried out semisynthesis and structure-activity relationship studies of medicinally interest marine natural products (Kahalalides & Manzamines) and further lead-optimization of their established anti-malarial and anti-tomural activity.
- Performed large scale isolation and purification of natural products, especially Manzamine A and kahalalide F.
- Developed a proficient method for quantification of microbial metabolites.

Funded/Accepted Research Grants

13. Noah Burnet and **Abbas G. Shilabin** (Principal Investigator): Summer research Fellowship, East Tennessee State University. Syntheses and Isolation of Novel Cannabinoid Derivatives; April **2022**, $3487.

12. Elizabeth Bond (HID student) and **Abbas G. Shilabin** (Principal Investigator): Student-Faculty Collaborative Grant (SFCG), East Tennessee State University. Purification and structure elucidation of antibiotic-like compound from soil bacterium Rhoddococcus strain KCHXC3; October **2021**, $1,849.

11. Abbas G. Shilabin (Principal Investigator): Research and Development Committee Major Grant (RDC 20-014M), East Tennessee State University. (S,E)-11-[2-(Arylmethylene)hydrazono]-PBD Analogs: Novel and Selective CB2 Ligands for Targeting Neurodegenerative Disorders; 2019, $9,800.

10. Gregory Ordway (Principal Investigator) and **Abbas G. Shilabin** (Co-Investigator): Research and Development Committee Major Grant (RDC 20-003M), East Tennessee State University. Design and Synthesis of Novel PARP1 Inhibitors with Properties that Permit Brain Penetration and Retention; 2019, $10,000.

9. Abbas G. Shilabin (Principal Investigator): Research and Development Committee Major Grant (RDC 17-005M), East Tennessee State University. Antimicrobial Drug Resistance: Design, Synthesis, and In Vitro Evaluation of 1,2,4-Oxadiazolinones as Potential Serine β-Lactamase Inhibitors; 2016, $9,952.

8. Abbas G. Shilabin (Principal Investigator): Research and Development Committee Small Grant (RDC 16-006sm), East Tennessee State University. Isolation and characterization of polyketide antibiotics produced by *Rhodococcus* soil bacterium; 2016, $1,425.

7. Mohamed Ali Ibrahim (Principal Investigator), Larry Walker (Mentor), Samir A. Ross (Mentor), **Abbas G. Shilabin** (Consultant) and Masami Otsuka (Consultant): P30GM122733 COBRE Phase III Transitional Center Award, University of Mississippi Internal Grant: COBRE Phase III Pilot Projects 2019, The University of Mississippi, Center of Biomedical Research Excellence in Natural Products Neuroscience (COBRE-NPN). Novel and selective CB2 Inhibitors for Targeting Neurodenerative Disorders. 2019, $100,000/2 yr.

6. Noah Lyons (UG student) and **Abbas G. Shilabin** (Principal Investigator): McNair research program mentor research/teaching/travel fund, East Tennessee State University. Design and Synthesis of Novel PARP1 Inhibitors; October 2019, $1,000.

5. Patrick South (UHS student) and **Abbas G. Shilabin** (Principal Investigator): Student-Faculty Collaborative Grant (SFCG), East Tennessee State University. Discovery of a Novel Inhibitory Polyketide Produced by Soil Bacterium *Rhodococcus* MTM3W5.2; 2018, $1,200.

4. Austin Miller (undergraduate student) and **Abbas G. Shilabin** (Principal Investigator): Student-Faculty Collaborative Grant (SFCG), East Tennessee State University. The Synthesis and Evaluation of Oxadiazoles as non-β-lactam β-lactamase Inhibitors; 2017, $1,164.

3. Heath W. Shelton (undergraduate student) and **Abbas G. Shilabin** (Principal Investigator): Student-Faculty Collaborative Grant (SFCG), East Tennessee State University. Synthesis and Development of Novel Pyrrolobenzodiazepine (PBD) Analogs for Evaluation of β-Lactamase Inhibition; 2017, $1,196.

2. John Garrett (HID student) and **Abbas G. Shilabin** (Principal Investigator): Student-Faculty Collaborative Grant (SFCG), East Tennessee State University. Synthesis and *In Vitro* Cell Viability/Cytotoxicity Studies of Novel Pyrrolobenzodiazepine Derivatives; 2015, $1,182.

1. Joel K. Annor-Gyamfi (graduate student) and **Abbas G. Shilabin** (Principal Investigator): ETSU School of Graduate Studies and ETSU Graduate Council Research

Grant, East Tennessee State University. Synthesis of Pyrrolo [2,1-C][1,4]Benzodiazepines Derivatives as a New Class of Non-β-Lactam β-Lactase Inhibitors; 2014, $787.

Consulting Projects

3. Abbas G. Shilabin (Principal Investigator) and Reza Mohseni (Co-PI): Analytical service to Callion Pharma, Jonesborough, TN, in partnership with researchers at the Armed Forces Radiobiology Research Institute (AFRRI) per Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF) contract No. 960561. Isolation and purification of γ-Tocotrienol and injectable formulation of it for further animal research as Radioprotective Agent for Treatment of Acute Radiation Syndrome; May 2019, $10,000.

2. Abbas G. Shilabin (Principal Investigator): Analytical service to Phenolics, LLC, Omaha, NE. A Reproduction of the First Synthesis, Spectral Analysis and crystallization of Creatine Hydrochloride; August 2018, $3,200.

1. Abbas G. Shilabin (Principal Investigator): Analytical service to Louis T. Germinario from Pneuma Respiratory Inc., Boone NC. Quantitative analysis of Humira® (adalimumab) and Insulin using HPLC Technique. The main interest in this study is to determine any possible effects of aerosol delivery of Humira suspensions using our Pneuma Device. Testing was involved characterization of Pneuma delivered Humira via aerosol ejection to control samples using HPSEC and binding assays to assess the activity. ; July 2018, $2,000.

Peer-Reviewed Publications

26. Arije, A.T.; Agbakpo, A.E.; Patel, S.G.; Fox, S.J.; **Shilabin, A.G.** Isolation and structural determination of cyclic dipeptides produced by *Arthrobacter sp. Nat. Prod. J.* **2025,** *15* (7), 9.
DOI: 10.2174/0122103155345478241106061631

25. Joseph O. Osazee, Joel K. Annor-Gyamfi, Carla Slebodnick and Abbas G. Shilabin CCDC 1504835: BUCQOJ : 11,12,13,13a-tetrahydro-9H-pyrrolo[2,1-c][1,2,4]triazolo [4,3-a][1,4]benzodiazepine-3,9(2H)-dione monohydrate, Space Group: $P2_1\ 2_1\ 2_1$ (19), Cell: *a* 6.77246(13)Å *b* 11.4603(2)Å *c* 15.7554(3)Å, α 90° β 90° γ 90°, Experimental Crystal Structure Determination, *CSD Communication*, **2024**.
DOI: 10.5517/ccdc.csd.cc1mhx23

24. Obaji, H.; **Shilabin, A. G.**; Majumdar, S.; Ibrahim, M. A. Pyrrolobenzodiazepines: natural sources, therapeutic uses, and future in neurological treatments. *Med. Chem. Res. 33*, **2024**, 36-46.
https://doi.org/10.1007/s00044-023-03177-w

23. Ospanov, M.; Sulochana, S.P.; Paris, J.J.; Rimoldi, J.M.; Ashpole, N.; Walker, L.; Ross, S.A.; **Shilabin, A.G.**; Ibrahim, M.A. Identification of an Orally Bioavailable, Brain-

Penetrant Compound with Selectivity for the Cannabinoid Type 2. Receptor. *Molecules* **2022**, *27*, 509. https://doi.org/10.3390/molecules27020509

22. Mingle, D.; Ospanov M.; Radwan, M. O.; Ashpole, N.; Otsuka, M.; Ross, S. A.; Walker, L.; **Shilabin, A. G.**; Ibrahim, M. A. First In Class (S,E)-11-[2-(Arylmethylene)Hydrazono]-PBD Analogs As Selective CB2 Modulators Targeting Neurodegenerative Disorders. *Med. Chem. Res.* **2020**, 1-11. https://doi.org/10.1007/s00044-020-02640-2

21. Ward, A. L.; Manikindi, P.; Borisova, R.; **Shilabin A. G.**; Lampson, B. C. A small inhibitory compound produced by a soil isolate of *Rhodococcus* has strong activity against the veterinary pathogen *R. equi*. *PLOS ONE*. **2018**, *13*(12): e0209275. https://doi.org/10.1371/journal.pone.0209275

20. Annor-Gyamfi, J. K.; Jarrett, J. M.; Osazee, J. O.; Bialonska, D.; Whitted, C.; Palau, V. E.; **Shilabin, A. G.** Synthesis and Biological Activity of Fused Tetracyclic Pyrrolo[2,1-C] [1,4]Benzodiazepines. *Heliyon* **2018**, *4*, 1-19. https://doi.org/10.1016/j.heliyon.2018.e00539

19. Ibrahim, M. A.; El-Alf, A. T.; Ezell K.; Radwan, M. O.; **Shilabin, A. G.**; Kochanowska, A. J.; Abd-Alla, H. I.; Otsuka, M.; Hamann, M. T. Marine Inspired 2-(5-Halo-1*H*-indol-3-yl)-N,N-dimethylethanamines as Modulators of Serotonin Receptors: An Example Illustrating the Power of Bromine as Part of the Uniquely Marine Chemical Space. *Mar. Drugs* **2017**, *15*(8), 248 (1-14). https://doi.org/10.3390/md15080248

18. Adediran, S. A.; Wang, P.-F.; **Shilabin, A. G.**; Baron, C. A.; McLeish M. J.; Pratt, R. F. Specifity and Mechanism of Mandelamide Hydrolase Catalysis. *Arch. Biochem. Biophys.* **2017**, *618*, 23-31. https://doi.org/10.1016/j.abb.2017.01.010

17. Osazee, J. O.; Annor-Gymafi, J. K.; Slebodnick, C.; **Shilabin, A. G.** Structure-Based Discovery and Synthesis of Pyrrolo[2,1-c][1,4]-benzodiazepine Derivatives as Non-β-lactam Serine β-lactamase Inhibitors. *Int. J. Drug Dev. & Res.* **2016**, *8*, 24-33.

16. Kasanah, N.; Lucas Farr, L.; **Gholipour Shilabin, A.**; Wedge, D. E.; Hamann, M. T. Metabolism and Resistance of *Fusarium spp.* to the Manzamine Alkaloids via a Putative Retro Pictet-Spengler Reaction and Utility of the Rational Design of Antimalarial and Antifungal Agents. *Mar. Biotechnol.* **2014**, *16*, 412-422. https://link.springer.com/article/10.1007%2Fs10126-014-9557-0

15. Ahern J. C.; **Shilabin A. G.**; Henline, K. M.; Pike, R. D.; Patterson, H. H. Photophysical properties of $\{[Ag(CN)_2]^-\}_2$ complexes trapped in a supramolecular electron-acceptor organic framework. *Dalton Trans.* **2014**, *43*, 12044-12049.

https://pubs.rsc.org/en/content/articlelanding/2014/DT/C4DT01110D#!divAbstract

14. Shilabin, A. G.; Dzhekieva, L.; Misra, P; Jayaram B.; Pratt, R. F. 4-Quinolones as Noncovalent Inhibitors of High Molecular Mass Penicillin-Binding Proteins. *ACS Med. Chem. Lett.* **2012**, *3*, 592-595.
https://doi.org/10.1021/ml3001006

13. Chen, L.: Lei, Y.; **Shilabin, A. G.**, Baran, G. R.; Sieburth, S. M. β-Peptide Coatings by Surface-Initiated Polymerization. *Chem. Commun.* **2012**, *48*, 9604-9606.
https://pubs.rsc.org/en/content/articlelanding/2012/CC/c2cc33854h#!divAbstract

12. Shilabin, A. G.; Hamann, M. T. In vitro and in vivo evaluation of select kahalalide F analogs with antitumor and antifungal activities. *Bioorg. Med. Chem.* **2011**, *19*, 6628-6632.
https://doi.org/10.1016/j.bmc.2011.06.050

11. Gao, J.; Caballero-George, C., Wang, B.; Rao, K. V.; **Shilabin, A. G.**; Hamann, M. T. 5-OHKF and NorKA, Depsipeptides from a Hawaiian Collection of *Bryopsis pennata*: Binding Properties for NorKA to the Human Neuropeptide Y Y1 Receptor. *J. Nat. Prod.* **2009**, *79*, 2172-2176.
https://doi.org/10.1021/np900287e

10. Shilabin, A. G.; Kasanah, N.; Tekwani, B. L.; Hamann, M. T. Kinetic Studies and Bioactivity of Potential Manzamine Prodrugs. *J. Nat. Prod.* **2008**, *71*, 1218-1221.
https://doi.org/10.1021/np800163u

9. Ibrahim, M. A.; **Shilabin, A. G.**; Prasanna, S.; Jacob, M.; Khan, S. I.; Doerksen, R. J.; Hamann, M. T. 2-*N*-Methyl Modifications and SAR Studies of Manzamine A. *Bioorg. Med. Chem.* **2008**, *16*, 6702-6706.
https://doi.org/10.1016/j.bmc.2008.05.079

8. Schmidt, A.; Lindner A. S.; **Shilabin, A. G.**; Nieger, M. New Derivatives and Ring Systems of Annulated Pyrrolobenzo[1,4]diazepins. *Tetrahedron* **2008**, *64*, 2048-2056.
https://doi.org/10.1016/j.tet.2007.12.044

7. Shilabin, A. G.; Kasanah, N.; Wedge, D. E.; Hamann, M.T. The Lysosome and HER3 (ErbB3) Selective Anticancer Agent Kahalalide F: Semisynthetic Modifications and Structure-Activity Relationship Studies. *J. Med. Chem.* **2007**, *50*, 4340-4350.
https://doi.org/10.1021/jm061288r

6. Schmidt, A.; **Shilabin, A. G.**; Namyslo, J. C.; Nieger, M.; Hemmen, S. Pyrimidine-annulated Pyrrolobenzodiazepines. A New Ring System Related to *Aspergillus* Alkaloids. *Eur. J. Org. Chem.* **2005**, 1781-1789.
https://doi.org/10.1002/ejoc.200400738

5. Schmidt, A.; **Shilabin, A. G.**; Nieger, M. Syntheses and Tautomerisations of Amino-Substituted and Pyrimidine-Annulated Pyrrolobenzodiazepines. *Heterocycles* **2005**, *65*, 625-632.
https://doi.org/10.1002/chin.200530198

4. Schmidt, A.; **Shilabin, A. G.** Thiazolidinone-annulated Pyrrolobenzodiazepines. Syntheses and Properties of a New Ring System. *Heterocycles* **2004**, *63*, 2851-2858.
https://www.heterocycles.jp/newlibrary/libraries/abst/01508

3. Schmidt, A.; **Shilabin, A. G.**; Nieger, M. On Benzo[b][1,4]diazepinium-olates, -thiolates and -carboxylates as anti-Hückel Mesomeric Betaines. *Org. Biomol. Chem.* **2003**, *1*, 4342-4350.
https://doi.org/10.1039/B308412D

2. Schmidt, A.; **Shilabin, A. G.**; Nieger, M. Synthesis and X-ray Structure of 2,4-Dimethyl-6,7-benzo[1,5]diazepinium Picrates. *Heterocycles* **2003**, *60*, 2645-2651.
https://www.heterocycles.jp/newlibrary/libraries/abst/01139

1. Shilabin, A. G.; Entezami, A. A. Electrochemical Behavior of Conducting Polyfuran Derivatives Containing Pyrrole, Thiophene and Ethylenic Spacers. *Eur. Poly. J.* **2000**, *36*, 2005-2020.
https://doi.org/10.1016/S0014-3057(99)00262-1

Patents

1. Ibrahim, M.A.; Paris, J.; Walker, L.; Shilabin, A.G.; Ospanov, M. Orally Bioavailable, Brain-Penetrant Compound with Selectivity for the Cannabinoid Type 2 Receptor with Potential Use Towards Visceral Pain Management and Neurodegenerative Disorders. US Patent App. 18/191,247. Publication date: Sep 28, **2023**.
https://patents.justia.com/inventor/abbas-gholipour-shilabin

Deposited Crystal Structures

List of deposited crystal structures on CCDC (The Cambridge Crystallographic Data Centre) by Shilabin's research Group. Cambridge Structural Database (CSD) data and software are used by leading academic institutions around the world to support impactful research across chemistry, biochemistry, materials science, agrochemical science, and beyond.
https://www.ccdc.cam.ac.uk/structures/Search?Author=Shilabin&DatabaseToSearch=Published

Student Master Theses

10. Amonah Temitope Arije. Isolation and Structural Determination of Bioactive Metabolites from the Soil Bacterium, *Arthrobacter sp.* Master Thesis, May 25th, **2023**.

9. Andy Elorm Agbakpo. Extraction, Purification, and Characterization of Potential Bioactive Compounds Produced by *Janthinobacterium lividum* TAJX1901. Master Thesis, June 15th, **2023**.

8. Kewabena Fobi. Purity Optimization of D-γ-Tocotrienol from Palm Oil: A Promising Radiation Protective Agent for Treatment of Acute Radiation Syndrome. Master Thesis, May 2020.

7. Garrett Johnson. Partial Structure Assignment of a Polyketide Isolated from Rhodococcus Bacterium using 2D-NMR Techniques. Master Thesis, August 2019.

6. David Mingle. Synthesis, Characterization and Biological Evaluation of Novel (S,E)-11-[2-(arylmethylene)hydrazono] pyrrolo [2,1-c] [1,4] Benzodiazepine Derivatives. Master Thesis, April 2019.

5. Chimdi E. Kalu. Synthesis and Evaluation of 1,2,4-oxadiazolidinones: The Search for A Potential Non-β-lactam β-lactamase Inhibitors. Master Thesis, March 2019.

4. Mohrah Alenzi. Extraction and Purification of Biologically Active Metabolites from *Rhodococcus* sp. MTM3W5.2. Master Thesis, November 2018.

3. Pusharathi R. Manikindi. Extraction, Purification and Characterization of an Antibiotic-like Compound Produced by Rhodococcus sp. MTM3W5.2. Master Thesis, July 2016.

2. Joseph O. Osazee. Molecular Docking, Synthesis and Evaluation of Pyrrolo[2,1-c][1,4]benzodiazepines Derivatives as Non-β-lactam β-lactamases Inhibitors. Master Thesis, May 2016.

1. Joel K. Annor-Jyamfi. Synthesis, Characterization and Biological Evaluation of Pyrrolo[2,1-c][1,4]benzodiazepines for Cytotoxicity and Serine β-lactamases Inhibition. Master Thesis, May 2016.

Invited Oral Presentations

5. Drug discovery of bioactive natural products and synthetic small molecules. Department of Chemistry and Physics, University of Tennessee at Chattanooga, Chattanooga, TN, November 22, **2019**.

4. Application of Organic Synthesis in the Modern Drug Discovery: Synthesis and SAR studies of Bioactive Natural Products & Design and Synthesis of Bacterial DD-peptidases Inhibitors. East Tennessee State University, Johnson City, TN, February **2014**.

3. Drug Discovery: Synthesis and SAR Studies of Bioactive Natural Products. University of Maine, Orono, Maine, ME, May **2013**.

2. *E. coli* PBP5 DD-Carboxypeptidase: The Search for New Efficient Inhibitors. Departmental Chemistry Colloquium, Wesleyan University, Middletown, CT, February **2011**.

1. Bioactive Marine Natural Products: Semisynthesis and SAR Studies. Biochemistry Seminar, Wesleyan University, Middletown, CT, January **2010**.

Presentations

25. William Clark, Abbas Shilabin, Brian Cartwright, Reza Mohseni and Mary Andreae. Evaluating the Absorption of Various Forms of Water-Solubilized 3-Hydroxy-Cholecalciferol (Vitamin D3) Using In Vitro Models. *Poster Presentation*. Nutrition 2023: American Society of Nutrition, Section of Vitamins and Minerals, Sheraton Boston Hotel, Boston, MA, July 22-25, **2023**.

24. Ospanov M., Sulochana S.P., Paris J.J., Rimoldi J.M., Ashpole N., Walker L., Ross S.A., **Shilabin A.G.**, Ibrahim M.A. 2022. Identification of an Orally Bioavailable, Brain-Penetrant Compound with Selectivity for the Cannabinoid Type 2 Receptor, Oral Presentation, The 20th Annual Oxford International on the Science of Botanicals, March 28th-31st, Oxford, Mississippi.

23. Ospanov, M.; Sulochana, S.P.; Paris, J.J.; Rimoldi, J.M.; Ashpole, N.; Walker, L.; Ross, S.A.; **Shilabin, A.G.**; Ibrahim, M.A. Advancements Towards the Identificatory of an Orally Bioavailable, Brain-Penetrant Compounds with Selectivity for the Cannabinoid Type 2 Receptor. *Poster Presentation*. American Society of Pharmacognosy (ASP), North Charleston, SC, July 23-28, **2022**.

22. Garrett A. Johnson, Pushpa R. Manikindi, Bert C. Lampson, and **Abbas G. Shilabin**. Partial Structure Assignment of a Polyketide Isolated from *Rhodococcus* Bacterium using 2D-NMR Techniques. The 58th Annual Meeting of the PSNA (Phytochemical Society of North America), Section of Natural Products in Medicine: Drug Development and Discovery, Carnegie Hotel, East Tennessee State University, Johnson City, TN, July 20-24, **2019**.

21. Mohamed A. Ibrahim, Shana V. Stoddard, Natasha Techen, Charles L. Cantrell, **Abbas G. Shilabin**, Theodor D. Leininger and Mark T. Hamann. Nature Product Leads for DrugResistant Human and Plan Pathogens. *Oral presentation*. The 58th Annual Meeting of the PSNA (Phytochemical Society of North America), Section of Natural Products in

Medicine: Drug Development and Discovery, Carnegie Hotel, East Tennessee State University, Johnson City, TN, July 20-24, **2019**.

20. Ibrahim M.A., **Shilabin A.G.**, Ross S.A., Walker L. 2019. Novel and selective CB2 agonist/inverse agonist for targeting neurodegenerative disorders, Oral presentation, The 3rd International Conference on Applied Chemistry (ICAC 2019), October 23-26, Hurghada-Luxor, Egypt.

19. Ibrahim M.A., Radwan M.O., Otsuka M., Ross S.A., Walker L., **Shilabin A.G.** 2019. Novel and selective CB2 agonist/inverse agonist for targeting neurodegenerative disorders, Poster presentation, The 23th Annual Local ACS Poster Session − 2019, School of Pharmacy and National Center for Natural Products Research, October 11th, Oxford, Mississippi.

18. Abbas G. Shilabin, Joseph Ossazi and Joel Annor-Gyamfi. The Search for New Class of Non-ß-lactam Serine ß-Lactamase Inhibitors: Design and Synthesis of Pyrimidinone and Oxadiazolinones. Gordon Research Conference-Drug Resistance, University of New England, Biddeford, ME, June 12-17, **2016**.

17. Abbas G. Shilabin, Ludia Dzhekieva, B. Jayaram and Rex F. Pratt. Fragment-Based Design, Synthesis, and Evaluation of a New Class of Effective Non-β-lactam Inhibitors of High Molecular Mass Penicillin-Binding Proteins. 247th American Chemical Society National Meeting & Exposition, Division of Medicinal Chemistry, Dallas, TX, March 16-20, **2014**.

16. Brenden P. Derstine, Li Chen, Yong Lei, **Abbas G. Shilabin**, James D. Delaney, George R. Baran and Scott McN. Sieburth, β-Lactam Composites via Surface-Initiated Polymerization. 43rd National Organic Chemistry Symposium, the University of Washington, Seattle, WA, June 23-27, **2013**.

15. Abbas G. Shilabin, B. Jayaram and Rex F. Pratt. Design, Synthesis and Evaluation of Quinolone-based Inhibitors of *E. coli* PBP5. 22nd Enzyme Mechanisms Conference, St. Pete Beach, Florida, USA, January 2-6, **2011**.

14. Abbas G. Shilabin, Wenhai Wang, Yong Lei, Keya Sadeghipour, George Baran and Scott Sieburth. Design of Composites with Nacre-Protein-Analogue Interphases. European Cooperation in Science and Technology (COST), Proceedings of the COST Strategic Workshop, Principles and Development of Bio-inspired Materials, BOKU University, Vienna, Austria, April 13-15, **2010**.

13. Abbas G. Shilabin, Scott McN. Sieburth, George Baran and Quan Wan. Nature-inspired peptidomimicry: Growth of β-peptides on glass surfaces. 238th American Chemical Society National Meeting, Organic Chemistry Section, Heterocycles and Aromatics, Asymmetric Reactions and Syntheses and Total Synthesis of Complex Molecules Session, Washington, DC, August 16-20, **2009**.

12. Abbas G. Shilabin, Noer Kasanah and Mark T. Hamann. Kahalalide F: Semisynthetic modifications and antifungal lead-exploration studies. 236th American Chemical Society National Meeting, Biologically-Related Molecules Section, Philadelphia, PA, August 17-21, **2008**.

11. Abbas G. Shilabin, George Baran and Scott McN. Sieburth. Biocomposite mimicry: Glass surfaces grafted with poly-β-peptides. 236th American Chemical Society National Meeting, Peptides, Proteins and Amino Acids Section, Philadelphia, PA, August 17-21, **2008**.

10. Mohamed A. Ibrahim, Abbas G. Shilabin and Mark T. Hamann. Semisynthetic Modifications and SAR Studies of Manzamine A Analogs. 235th American Chemical Society National Meeting & Exposition, New Orleans, LA, April 6-10, **2008**.

9. Noer Kasanah, **Abbas G. Shilabin**, David E. Wedge and Mark T. Hamann. Structure Activity Relationship of Kahalalide F and its Analogs Against *Fusarium Spp*. *Planta Medica 74(03)*, 7th Annual Oxford International Conference on the Science of Botanicals & American Society of Pharmacognosy 4th Interim Meeting, University of Mississippi, Oxford, MS, 12–16 April **2008**.

8. Mohamed A. Ibrahim, **Abbas G. Shilabin** and Mark T. Hamann. SAR Studies and Rational Semisynthetic Modifications of Manzamine A for Anti-Malarial Activity. *Planta Medica 74(03)*, 7th Annual Oxford International Conference on the Science of Botanicals & American Society of Pharmacognosy 4th Interim Meeting, University of Mississippi, Oxford, MS, 12–16 April **2008**.

7. Noer Kasanah, Anklin Clemens, **Abbas G. Shilabin**, Jiangnan Peng, Matthew Anderson, Subagus Wahyuono, Russel T. Hill and Mark T. Hamann. Marine peptides and their activity as anti-infective agents. Annual meeting of American Society of Pharmacognosy, Portland, ME, July 14-19, **2007**.

6. Noer Kasanah, **Abbas G. Shilabin**, Lorelei A. Lucas, David E. Wedge and Mark T. Hamann. Evaluation mechanism of resistance by *Fusarium* to the manzamine alkaloids. 223rd American Chemical Society National Meeting & Exposition, Agricultural & Food Chemistry Section, Chicago, IL, March 25-29, **2007**.

5. Noer Kasanah, **Abbas G. Shilabin**, Lorelei A. Lucas, David E. Wedge and Mark T. Hamann. The evaluation of resistance *Fusarium spp* to manzamine and its analogs. Annual meeting of American Society of Pharmacognosy, Washington DC, August 4-10, **2006**.

4. Noer Kasanah, **Abbas G. Shilabin**, Lorelei A. Lucas, Olivier Peraud, Russell T. Hill and Mark T. Hamann. The roles of sponge associated microbes in chemical diversity of manzamine alkaloids. Annual meeting of American Society of Pharmacognosy, Washington DC, August 4-10, **2006**.

3. Andreas Schmidt, Lars Merkel, **Abbas G. Shilabin**, Tobias Habeck, Thorsten Mordhorst and Schmidt, H. Fleischhauer. Nucleophile Carbene und Verwandte aus Naturstoffen. Chemiedozententagung, München März 6-9, **2005**.

2. Andreas Schmidt, Thorsten Mordhorst, **Abbas G. Shilabin** and Tobias Habeck. (Naturstoff-) Chemie mit heteroaromatischen Oligokationen und mesomeren Betainen. Abstract C-28, 7.3.Chemiedozententagung, Dortmund, April **2004**.

1. Andreas Schmidt, and **Abbas G. Shilabin**. On Betaine Pyrrolobenzodiazepines as Derivatives of Circumdatins, Abstract TP-46. XXI European Colloquium on Heterocyclic Chemistry, Sopron, Ungarn, September 12-15, **2004**.

ETSU Students Presentations

50. 2024 Appalachian Student Research Forum, D.P. Culp Student Center ballroom, ETSU, Johnson City, TN. April 5th, **2024**. *Poster Presentation*. Wesley Jean, **Abbas G. Shilabin**, Mary Andreae, Andy Clark, Michael Cartwright. Synthesis of a water-soluble vitamin D derivative.

49. 2024 Appalachian Student Research Forum, D.P. Culp Student Center ballroom, ETSU, Johnson City, TN. April 5th, **2024**. *Poster Presentation*. Maeren Horton and **Abbas G. Shilabin**. Extraction of Sandalwood Essential Oil: Isolating α/β-Santalol.

48. Boland Undergraduate Research Symposium**,** D.P. Culp Center Room 219, East Tennessee State University, Johnson City, Tennessee, 37614, April 5th, **2024**. *Oral presentation*. Maeren Horton and **Abbas G. Shilabin**. Extraction of Sandalwood Essential Oil: Isolating α/β-Santalol.

47. 48 National Organic Chemistry Symposium, University of Notre Dame, Notre Dame, IN, July 9-13, **2023**. *Poster Presentation*. Amonah Arije, Andy Agbakpo, Sean Fox, **Abbas G. Shilabin**. Isolation and Structural determination of bioactive metabolites from the Soil Bacterium, Arthrobacter sp. TAJX1902.

46. 48th National Organic Chemistry Symposium, University of Notre Dame, University of Notre Dame, Notre Dame, IN, July 9-13, 2023. *Poster Presentation*. Andy E. Agbakpo, Amonah Arije, Sean Fox., **Abbas Shilabin**. Extraction, purification, and characterization of bioactive compounds produced *by Janthinobacterium lividum* strain TAJX1901.

45. 2023 Appalachian Student Research Forum, Natural Sciences Group 46, D.P. Culp Student Center at ETSU, Johnson City, TN. April 25, 2023. *Poster Presentation*. Amonah Arije, Andy Agbakpo, Sean Fox, **Abbas G. Shilabin**. Isolation and Structural Determination of Metabolites Produced by a Soil Bacterium, *Arthrobacter sp.* TAJX1902.

44. 2023 Appalachian Student Research Forum, D.P. Culp Student Center at ETSU, Johnson City, TN. April 25, 2023. *Poster Presentation*. Andy E. Agbakpo, Amonah Arije, Sean Fox., **Abbas Shilabin**. Extraction, purification, and characterization of bioactive compounds produced by *Janthinobacterium lividum* strain TAJX1901.

43. Three Minutes Thesis (3MT), Johnson City, TN. Nov. 6, 2019. Oral presentation. Amonah Arije, Andy Agbakpo, Sean Fox, Abbas G. Shilabin. Isolation and Structural determination of bioactive metabolites from *Arthrobacter sp*.

42. Three Minutes Thesis (3MT), TN, Nov. 2022, East Tennessee State University, Johnson City, TN. *Poster Presentation*. Andy E. Agbakpo, Amonah Arije, Sean Fox., **Abbas Shilabin**. Extraction, purification, and characterization of bioactive compounds produced by *Janthinobacterium lividum* strain TAJX1901.

41. 2022 American Society of Microbiology Tennessee/Kentucky Branch, October 21-23, 2022 Conference, East Tennessee State University, Johnson City, TN. *Poster Presentation*. Andy E. Agbakpo., Amonah Arije, Sean Fox., **Abbas Shilabin**. Extraction, purification, and characterization of bioactive compounds produced by *Janthinobacterium lividum* strain TAJX1901.

40. 2022 Appalachian Student Research Forum, Bio-Chem Sciences, D. P. Culp Student Center, ETSU, Johnson City, TN. April 6-7, 2022. *Oral presentation.* Andy Elorm Agbakpo, Amonah Temitope Arije, Sean Fox, and **Abbas G. Shilabin**. Extraction, purification, and characterization of bioactive compounds produced by *Janthinobacterium lividum* strain TAJX1901.

39. 2022 Appalachian Student Research Forum, Natural Sciences, D. P. Culp Centre, ETSU, Johnson City, TN. April 6-7, 2022. *Poster presentation*. Amonah Arije, Andy Agbakpo, Sean Fox, **Abbas Shilabin**. Purification and structural elucidation of bioactive metabolites isolated from a soil bacterium, *Arthrobacter sp.* TAJX1902.

38. Tennessee Collegiate Honors Council Presentation, D. P. Culp Center, East Tennessee State University, Johnson City, Tennessee, 37614, February 12, **2022**. *Oral presentation.* Elizabeth P. Bond, Bert Lampson and **Abbas G. Shilabin**. Extraction and purification of antibiotic-like compound from the soil bacterium *Rhoddococcus* strain KCHXC3.

37. Three Minutes Thesis (3MT), Johnson City, TN. Nov. 6, **2019**. Oral presentation. Amonah Arije, Andy Agbakpo, Sean Fox, Abbas G. Shilabin. Isolation and Structural determination of bioactive metabolites from *Arthrobacter sp*.

36. The Southeastern Regional Meeting of the American Chemical Society (SERMACS 2019), Division of Organic Chemistry, Savannah, GA, Oct. 20–23, **2019**. *Poster presentation*. Kwabena Fobi, Paul E. Nussio, Reza Mohseni, John Hyatt and **Abbas G. Shilabin.** D-γ-Tocotrienol: A Promising Radioprotective Agent Isolated from Palm Oil

35. The Southeastern Regional Meeting of the American Chemical Society (SERMACS 2019), Division of Organic Chemistry, Savannah, GA, Oct. 20–23, **2019**. *Poster presentation*. Kofi Kankam and **Abbas G. Shilabin.** The search for highly selective and potent CB1 and CB2 inhibitors: Synthesis and characterization of (S,E)-11-[2-(thionylmethylene)hydrazono]-PBD.

34. NETSACS Student Research Symposium, Division of Organic Chemistry, Eastman Chemical Company Kingsport, TN. October 9, **2019**. *Poster presentation*. Kwabena Fobi, Paul E. Nussio, Reza Mohseni, John Hyatt and **Abbas G. Shilabin.** D-γ-Tocotrienol: A Promising Radioprotective Agent Isolated from Palm Oil

33. *SoCon Undergraduate Research Forum (SURF),* Wofford College, November 2, **2019**. *Poster Presentation*. **Lyons, N.S. (presenter)**; Kalu, C.E.; Shilabin, A.G.; "Synthesis of 1,2,4-Oxadiazolidin-5-one Derivatives as Potential β-Lactamase Inhibitors."

32. *Northeast Tennessee Symposium for the American Chemical Society*, Eastman Chemical Company, October **2019.** *Poster Presentation.* **Lyons, N.S (presenter)**; Michael, L.A.; Kalu, C.E; Shilabin, A.G. "Synthesis of 1,2,4-Oxadiazolidin-5-one Derivatives as Potential β-Lactamase Inhibitors."
Award: 1st place winner for undergraduate poster contest.

31. The 71th Southeastern Regional Meeting of the American Chemical Society (SERMACS 2017), Division of Organic Chemistry, Savannah, GA, Oct. 20–23, **2019**. *Poster presentation*. Kwabena Fobi, Reza Mohseni, John Hyatt and **Abbas G. Shilabin**. D-γ-Tocotrienol, a Promising Radioprotective Agent Isolated from Palm Oil (accepted).

30. The 71th Southeastern Regional Meeting of the American Chemical Society (SERMACS 2017), Division of Organic Chemistry, Savannah, GA, Oct. 20–23, **2019**. *Poster presentation*. Kofi Kankam and **Abbas G. Shilabin**. The search for highly selective and potent CB1 and CB2 inhibitors: Synthesis and characterization of (S,E)-11-[2-(thionylmethylene)hydrazono]-PBD (accepted).

29. The 58th Annual Meeting of the PSNA (Phytochemical Society of North America), Section of Natural Products in Medicine: Drug Development and Discovery, Carnegie Hotel, East Tennessee State University, Johnson City, TN, July 20-24, **2019**. *Poster presentation.* Kwabena Fobi, Reza Mohseni, John Hyatt and **Abbas G. Shilabin**; Optimization of the Purity of γ-Tocotrienol Vitamer in Palm Oil: A Promising Radioprotective Agent for Treatment of Acute Radiation Syndrome.

28. 2019 Appalachian Student Research Forum, Natural Science Group 2, Millennium center at ETSU, Johnson City, TN. April 12, 2019. *Oral presentation*. Chimdi Kalu, Noah Lyon and **Abbas G. Shilabin**. Synthesis and evaluation of 1,2,4-Oxadiazolidinone derivatives: The search for a potential non-β-lactam β-lactamase inhibitors.

27. 2019 Appalachian Student Research Forum, Organic chemistry Group, Millennium center at ETSU, Johnson City, TN. April 12, **2019**. *Oral presentation*. David Mingle and

Abbas G. Shilabin. Synthesis, Characterization And Biological Evaluation of Novel (*S*,*E*)-11-[2-(arylmethylene) Hydrano] Pyrrolo [2,1-c] [1,4] Benozodiazepine Derivatives.

26. 2019 Appalachian Student Research Forum, Natural Sciences Group 46, Millennium Center at ETSU, Johnson City, TN. April 12, **2019**. *Poster Presentation*. Kwabena Fobi, Bronson Lynn and **Abbas G. Shilabin**. Extraction, Purification and Characterization of the Radioprotective Agent gamma-Tocotrienol Isomer in Palm Oil.

25. Boland Undergraduate Research Symposium, Millennium Centre at East Tennessee State University, Johnson City, Tennessee, 37614, March 29, **2019**. *Oral presentation*. Noah Lyons, Chimdi Kalu and **Abbas G. Shilabin**. Synthesis of 1,2,4-Oxadiazolidin-5-one Derivatives as Potential β-lactamase Inhibitors.

24. 70th Southeast Regional Meeting of American Chemical Society (SERMACS 2017), Division of Organic Chemistry, Augusta, GA, October 31st – November 3, **2018**. *Poster presentation*. Chimdi Kalu, Noah Lyon and **Abbas G. Shilabin** Synthesis of 1,2,4-Oxadiazolidinone with Isocyanate and Nitrones: A compound of interest for antimicrobial resistance.

23. NETS-ACS Student Research Symposium, Division of Organic Chemistry, Eastman Chemical Company Kingsport, TN. October 16, **2018**. *Poster presentation*. Chimdi Kalu, Noah Lyon and **Abbas G. Shilabin** Synthesis of 1,2,4-Oxadiazolidinone with Isocyanate and Nitrones: A compound of interest for antimicrobial resistance.

22. Appalachian Student Research Forum, Millennium Centre, East Tennessee State University, Johnson City, Tennessee, 37614, April 5-6, **2018**. *Poster presentation.* Haiyu Wang and **Abbas G. Shilabin**; Synthesis of 2-carbamoyl-4-oxo-1,5-diazabicyclo[3.2.1]octane Derivatives as Possible Inhibitors of Serine β-Lactamases.

21. Appalachian Student Research Forum, Millennium Centre, East Tennessee State University, Johnson City, Tennessee, 37614, April 5-6, **2018**. *Poster presentation*. Chimdi Kalu, Austin Miller and **Abbas G. Shilabin**; Synthesis and biological significance of 1,2,4-oxadiaxolidin-5-one.

20. Appalachian Student Research Forum, Millennium Centre, East Tennessee State University, Johnson City, Tennessee, 37614, April 5-6, **2018**. *Poster presentation*. David Mingle and **Abbas G. Shilabin**; Synthesis of pyrrolo[2,1-c] [1,4] benzodiazepine-11-hydrazinyl derivatives as potential antimicrobial agent.

19. Appalachian Student Research Forum, Millennium Centre, East Tennessee State University, Johnson City, Tennessee, 37614, April 5-6, **2018**. *Poster presentation*. Mohrah Alenazi, Jaimin Kapadia, Patrick D. South, Bert Lampson, and **Abbas G. Shilabin**. Extraction and purification of biologically active metabolites from the *Rhodococcus* sp. MTM3W5.2.

18. Boland Undergraduate Research Symposium, Millennium Centre, East Tennessee State University, Johnson City, Tennessee, 37614, March 27, **2018**. *Oral presentation*. Patrick South and **Abbas G. Shilabin**. Discovery of a Novel Inhibitory Compound Produced by Soil Bacterium *Rhodococcus* MTM3W5.2.

17. Boland Undergraduate Research Symposium, Millennium Centre, East Tennessee State University, Johnson City, Tennessee, 37614, March 27, **2018**. *Oral presentation*. Austin Miller and **Abbas G. Shilabin**. Synthesis of Oxadiazole Derivatives as non-β-lactam β-lactamase inhibitors.

16. The Southeastern Regional Meeting of the American Chemical Society (SERMACS 2017), Division of Organic Chemistry, Charlotte, NC, Nov. 8–11, **2017**. *Poster presentation*. Mohrah Alenzi, Patrick South, Bert C. Lampson and **Abbas G. Shilabin.** Extraction and purification of biologically active metabolites from the *Rhodococcus sp.* MTM3W5.2.

15. The Southeastern Regional Meeting of the American Chemical Society (SERMACS 2017), Division of Organic Chemistry, Charlotte, NC, Nov. 8–11, **2017**. *Poster presentation*. Haiyu Wang and **Abbas G. Shilabin.** Synthesis and Biological Activity of 2-carbamoyl-4-oxo-1, 5-diazabicyclo [3.2.1] octane derivatives as a new class of Serine β-lactamase inhibitors.

14. The Southeastern Regional Meeting of the American Chemical Society (SERMACS 2017), Division of Organic Chemistry, Charlotte, NC, Nov. 8–11, **2017**. *Poster presentation*. Garrett Johnson, Bert C. Lampson and **Abbas G. Shilabin**. Structure elucidation of a polyketide isolated from *Rhodococcus* MTM3W5.2 via 2-D NMR and high-resolution mass spectroscopy.

13. 2017 SoCon Undergraduate Research Forum (SURF), Wofford College in Spartanburg, SC, October 27-29, **2017**. *Poster presentation*. Patrick South, Mohrah Alenzi, Bert C. Lampson and **Abbas G. Shilabin**. Discovery of a Novel Inhibitory Polyketide Produced by soil bacterium *Rhodococcus* MTM3W5.2.

12. Appalachian Student Research Forum, Natural Sciences Group 2, D. P. Culp Center, East Tennessee State University, Johnson City, Tennessee, 37614, April 6-7, **2016**. *Oral presentation.* Joseph O. Osazee and **Abbas G. Shilabin**. Molecular docking, synthesis and evaluation of 1,2,4–oxadiazolinone derivatives as potential β-lactam β-lactamase inhibitors.

11. Appalachian Student Research Forum, Natural Sciences Group 1, D. P. Culp Center, East Tennessee State University, Johnson City, TN, April 6-7, **2016**. *Oral presentation.* Joel K. Annor-Gyamfi and **Abbas G. Shilabin**. Synthesis, Characterization and *In Vitro* Evaluation of Novel Pyrrolo[2,1-c][1,4]benzodiazepine tetracyclic Analogs as Potential Anti-cancer Agents.

10. 2016 Appalachian Student Research Forum, Natural Sciences Group 2, D. P. Culp Centre, ETSU, Johnson City, TN. April 6-7, **2016**. *Oral presentation.* Pushpavathi Reddyvari Manikindi, Amber L. Ward, Bert C. Lampson and **Abbas G. Shilabin**. Development of an efficient method for extraction and purification of an inhibitory compound produced by *Rhodococcus sp.* MTM3W5.2.

9. Boland Undergraduate Research Symposium, Science and Technology Session, Johnson City, Tennessee, March 31st, **2016**. *Oral presentation.* John M. Jarrett, Joel K. Annor-Gyamfi, Whitted, Crystal, Victoria E. Palau, and **Abbas G. Shilabin**. Synthesis and *In-Vitro* Cell Viability/Cytotoxicity Studies of Novel Pyrrolobenzodiazepines.

8. Posters at the Capitol, Nashville, Tennessee, February 24th, **2016**. *Poster presentation.* John M. Jarrett, Joel K. Annor-Gyamfi, Crystal Whitted, Victoria E. Palau, and **Abbas G. Shilabin**. Synthesis and In-Vitro Cell Viability/Cytotoxicity Studies of Novel Pyrrolobenzodiazepines.

7. Joint 67th Southeastern and 71st Southwest Regional Meeting (SERMACS/SWRM 2015), Division of General Biological Chemistry, Memphis, TN, Nov. 4-7, **2015**. *Poster presentation*. Joseph O. Osazee, Mariah Huskey and **Abbas G. Shilabin.** Synthesis and molecular docking of pyrollobenzodiazepine derivatives as potential non-β-lactam β-lactamase inhibitors.

6. Joint 67th Southeastern and 71st Southwest Regional Meeting (SERMACS/SWRM 2015), Division of General Organic Chemistry, Memphis, TN, Nov. 4-7, **2015**. *Poster presentation*. Joel K. Annor-Gyamfi, John Jarret and **Abbas G. Shilabin**. Synthesis and characterization of a novel series of pyrrolo[2,1-c][1,4]benzodiazepine derivatives with potential biological activity.

5. Joint 67th Southeastern and 71st Southwest Regional Meeting (SERMACS/SWRM 2015), Division of General Organic Chemistry, Memphis, TN, Nov. 4-7, **2015**. *Poster presentation*. Pushpavathi R. Manikindi, Amber L. Ward, Tyler. King, Bert C. Lampson and **Abbas G. Shilabin**. Extraction and characterization of an antibiotic- like molecule produced by *Rhodococcus sp*. MTM3W5.2.

4. Appalachian Student Research Forum poster presentation. *Poster presentation*. Joseph O. Osazee and **Abbas G. Shilabin**. Natural Sciences Session, Group B, April 8-9, **2015**, ETSU. Fragment-Based Design and Evaluation of Pyrrolo[2,1-C][1,4]benzodiazepine Derivatives as Novel Non-β-lactam β-Lactamase Inhibitors.

3. Appalachian Student Research Forum poster presentation. *Poster presentation*. Amber L. Ward, Pushpavathi Manikindi, **Abbas G. Shilabin** and Bert C. Lampson. Biomedical and Health Sciences Session, April 8-9, **2015**, ETSU. Using Genomics To Infer The Identity Of An Inhibitory Compound Produced By Rhodococcus sp. MTM3W5.

2. Appalachian Student Research Forum poster presentation. *Poster presentation*. Joel K. Annor-Gyamfi, David Middaugh and **Abbas G. Shilabin.** Natural Sciences Session, Group B, April 8-9, **2015**, ETSU. Synthesis of Pyrrolo [2,1-C][1,4]benzodiazepine Derivatives as a New Class of Non β-Lactam β-Lactamase Inhibitors.

1. Boland Undergraduate Research Symposium, East Tennessee State University, April **2015**. *Oral presentation*. Tyler King and **Abbas G. Shilabin**. Isolation and Structure Determination of a Potential Antibiotic.

MSc Student Advisor for;

Joel Annor-Gyamfi
Fall 2014 – Spring 2016
Graduation date: May 13, 2016, Brown Hall room 476.

Joseph O. Osazee
Fall 2014 – Spring 2016

Graduation date: May 13, 2016, Brown Hall room 476.

Pushpavathi R. manikindi
Fall 2014 – summer 2016
Graduation date: July 13, 2016, Brown Hall room 476.

Mohrah Alenazi
Fall 2016 – Fall 2018
Graduation date: November 5, 2018, Sam Wilson building room 230.

Haiyu Wang
Fall 2016 – Spring 2018
Graduation date: The research work was terminated.

Chimdi Kalu
Spring 2017 – Spring 2019
Graduation date: March 21, 2019, Sam Wilson building room 209.

David Mingle
Spring 2017 – Spring 2019
Graduation date: April 23, 2019, Brown Hall room 320.

Kofi Kankam
Fall 2018 – Spring 2020
Graduation date: The research work was terminated.

Garrett Johnson (part-time Eastman Student)
Fall 2016 – Fall 2019
Graduation date: October 2, 2019, Brown Hall room 475.

Kwabena Fobi
Fall 2018 – Spring 2020
Graduation date: March 25, 2020, Zoom meeting.

Amonah Arije
Fall 2021 – Fall 2023
Graduation date: May 25, 2023, Brown Hall room 364.

Andy Agbakpo
Fall 2021 – Summer 2023
Graduation date: June 15, 2023, Brown Hall room 364.

Matthew T. Tetteh
Spring 2024 – present
Graduation date:

Brannon R. Ragsdale
Spring 2024 – present
Graduation date:

Luke A. Bryant
Spring 2025 – present
Graduation date:

Served on MSc Advisory Committee for;

Grace Abban (organic chemistry graduate student): June 12, 2015, Brown Hall room 476.
Selorm Fanah (organic chemistry graduate student): July 1, 2015, Brown Hall room 476.
Amber Ward (microbiology graduate student): July 2, 2015, Lamb Hall room 231.
Chris Acquah (inorganic chemistry graduate student): May 31, 2016, Brown Hall room 476.
Chris Holley (microbiology graduate student): July 21, 2016, Lamb Hall room 343.
Emmanuel Onobun (organic chemistry graduate student): May 28, 2017, Burleson Hall room 404.
Hannah Pollard (physical chemistry graduate student): November 1, 2017, Lamb Hall, room 231.
Helal Alharbi (organic chemistry graduate student): April 22, 2019, Brown Hall, room 364.
Ebenezer Ametsetor (organic chemistry graduate student): July 30, 2019, Brown Hall, room 364.
Anastasia Kuvayskaya (organic chemistry graduate student): March 4, 2020, Brown Hall, room 206.
Bertha Lotsi (organic chemistry graduate student): March 24, 2020, Zoom meeting.
Stephen Amoako (organic chemistry graduate student): March 22, 2024, Brown Hall, room 261.

Honors Scholar Research Advisor for;

John Jarrett (chemistry HID student)	Fall 2015, spring 2016
Patrick South (chemistry UHS student)	Fall 2016, spring 2017, fall 2017
Garrett L. Johnson (chemistry UHS student)	Fall 2018
Matthew Toppenberg (chemistry HID student)	Spring 2019, fall 2019
Wesley Jean (Nutrition HID student)	Fall 2023, spring 2024

Served on Honor Student Advisory Committee for;

Jessica Coleman (chemistry HID student): May 8, 2015 at Pharmacy Building 7, VA Campus - Room 211.
Troy Dolmetsh (chemistry HID student): March 28, 2017 in Room 130 of the Millenium Centre.
Ashley Cameron (chemistry HID student): March 27, 2018 in Room 120 of the Millenium Centre.
Harper Buldwin (chemistry HID student): March 29, 2019 in Room 137a of the Millenium Centre.
Jessa Murphy (chemistry HID student): March 29, 2019 in Room 120 of the Millenium Centre.
Natania Paul (chemistry HID student): March 29, 2019 in Room 137a of the Millenium Centre.

Greta Trogen (chemistry HID student): March 29, 2019 in Room 137a of the Millenium Centre.
Haley Bradshaw (chemistry HID student): April 4, 2019, VA Campus, college of Pharmacy, Building 7, Room 211.
Blakeley Griffin (Microbiology HID student): April 15, 2020, Department of Health Sciences, College of Public Health, Zoom meeting.
Gabrielle Shipstone (Microbiology HID student): November 9, 2023 in Gilbreath room 104, Department of Health Sciences, College of Public Health.
William S. Wamack (Microbiology HID student): November 9, 2023 in Gilbreath room 104, Department of Health Sciences, College of Public Health.

Undergraduate Student Research Advisor for;

David Middaugh	Spring 2015
Tyler King	Spring 2015, fall 2015
Mariah Huskey	Fall 2015
Julia Vishenchuk	Summer 2016
Kaleb Anderson (UNG internship)	Summer 2016
Austin Miller	Fall 2016, spring 2017, fall 2017, spring 2018
Heath Shelton	Spring 2017
Justin Pearson	Fall 2016, spring 2017
Hannah Sherrod	Fall 2017
Jamin Kapadia	Spring 2018
Noah Lyons	Fall 2018, spring 2019, fall 2019, spring 2020
Bronson Lynn	Spring 2019
Leigh Ann Michael	Fall 2019, spring 2020
Ethan Nussio	Fall 2019
Eyan Nussio	Fall 2019
Elizabeth Bond	Spring 2020, fall 2020, spring 2021
Marilyn Hagar	Spring 2021, Fall 2021
Allen Oudom	Fall 2022, Spring 2023
Maeren Horton	Fall 2022, Spring 2023, Fall 2023
Channel Kruger	Fall 2023, Spring 2024,
Abram J. Moore	Fall 2024

Served as a Graduate School representative;

Heather Abbott doctoral defense (sport physiology PhD student), June 3, 2016 at Health Alliance Mini Dome.
Derek Murrell doctoral defense (pharmacy PhD student), July 5, 2018 at VA building 178, small auditorium.
Bal Krishna Chand Thakuri doctoral defense (Biomedical Sciences PhD student), October 24, 2018 at Brown Hall room 320.

Served as a Judge at;

Appalachian Student Research Forum (ASRF), April 2016, Doctoral Candidates, Biomedical, Health and Natural Sciences, Group A., Johnson City, Tennessee.
Appalachian Student Research Forum (ASRF), April 2017, poster presentation of Pharmacy Doctoral Candidates, Biomedical section, Health and Natural Sciences.
Appalachian Student Research Forum (ASRF), April 2018, oral presentation in the Bays Mtn. Room 125 of the Millennium Centre.
Appalachian Student Research Forum (ASRF), April 12, 2019, poster presentation in the Bays Mtn. Room 125 of the Millennium Centre.

Served as a Grant Reviewer for;

April 2017 Research Development Committee, Reviewed 4 Major Grants, East Tennessee State University.
April 2018 Research Development Committee, Reviewed 2 Small Grants, East Tennessee State University.
Remote Referee of a proposal from the *French National Research Agency* (ANR), proposed by members of the panel CE18 Biomedical innovation to review MYCWall proposal titled: Development of inhibitors specific of cell wall synthesis in mycobacteria.
March 2020 Research Development Committee, Reviewed 6 Major Grants, East Tennessee State University.

Served as a Peer Reviewer for;

Reviewer of *Journal of Natural Products*, 2005 – Present. Reviewed more than 21 manuscripts for the journal.
Reviewer of *Heliyon,* the Elsevier's new open access journal, 2018 – Present.
Reviewer of *Current Plant Biology*, the Elsevier's open access journal, 2019 – Present.
Reviewer for ETSU RDC Major and small Grant proposals. I reviewed 4 RDC major and 2 Small grant proposals and participated in discussion panel of proposals at ETSU RDC plenary meeting.

Academic Development Activities

Organic Chemistry I & II Lab Manuals

In the spring of 2024, Dr. Abbas G. Shilabin and Teresa Bowers embarked on a significant academic development initiative by drafting new Organic Chemistry I and II lab manuals. This endeavor involved a comprehensive review and update of the existing experimental protocols to enhance the educational experience for students. The revisions aim to incorporate the latest advancements in organic chemistry and reflect current best practices in laboratory techniques. By integrating modern methodologies and addressing recent developments in the field, these updated manuals are designed to provide a more rigorous and engaging laboratory experience, ultimately contributing to the academic and professional growth of both students and faculty.

The ALEKS Chemistry Summit, A virtual symposium was held from ALKES group and McGrow hill publisher. This summit helped me to prepare for the platform transition from

McGraw Hill Connect® Chemistry to ALEKS Chemistry aligned with the availability of the newest edition of our textbook. The McGraw Hill Representative worked closely with me to identify our goals, helped me to build a course that complements my teaching approach, and provided training for me and my colleagues.

Guest Editor, Special Issue – Design, Synthesis, and Biological Evaluation of Heterocyclic Compounds, MDPI [Pharmaceuticals IF: 4.3] (October 2023 – March 2024).
A Special Issue dedicated to the fascinating world of heterocyclic compounds and their pivotal role in medicinal chemistry and drug discovery. Heterocyclic compounds represent a vast and diverse family within organic chemistry, making them a cornerstone of research in the field. Characterized by their heterocyclic core structures, they have emerged as a vital class of therapeutics for addressing a wide range of diseases.
https://www.mdpi.com/journal/pharmaceuticals/special_issues/Z0O3KFJ267

Guest Editor, Special Issue – Microbial Bioactive Metabolites: Extraction, Purification, Characterization and Its Pharmacological Relevance, MDPI [Molecules IF: 4.9]. (April 2022 – December 2023).
This Special Issue covers the microbial production of these biologically active secondary metabolites and the generation of new molecules using diverse bioactivity-guided extraction, purification, and structural determination approaches. A full elucidation of the structure of naturally occurring secondary metabolites is achieved via spectroscopic techniques, including full 2D-NMR datasets as well as high-resolution mass spectroscopy. Additionally, applications of cutting-edge developments and technological advances in the microbial production of bioactive natural products are desirable.
https://www.mdpi.com/journal/molecules/special_issues/Microbial_Bioactive_Metabolites

SERVICE

East Tennessee State University

Served as Bio-Safety & Chemical Safety Committee member (August 2023-present)

The ETSU Institutional Biosafety and Chemical Safety Committee (IBC) is responsible for developing institutional biosafety policies and for reviewing and approving research and teaching activities involving biohazards, recombinant DNA, and the use of toxic or hazardous chemicals. The committee ensures that all protocols comply with guidelines set by the Occupational Safety and Health Administration (OSHA) and standards determined by the ETSU IBC.

Served as Judge at Graduate School's Thesis or Dissertation Research Grants Committee Three of faculty and the chair of the committee, Karin Baroszuk, went through all the proposals. Eight proposals were granted in amount of 7780$.

Served as ETSU representative at Gray STEM Day at Gray Elementary School, being held on Wednesday May 17th, 2023.

Center for Inflammation, Infectious Disease, and Immunity (CIIDI), 2014 to present
Department representative at Science Expo, Unicoi County Middle School, Feb. 2016.
UMOJA Arts and Cultural Festival, Johnson City, TN, Sep. 8, 2018.

College of Arts and Sciences

RDC committee member, representing the College of Arts and Sciences, 2017 – 2022.
Nuclear Fuel Services (NSF) Erwin plant Meeting, October 20, 2016.

Department of Chemistry

Chemistry Department Organic Sections Supervisor and Organic Lab Sections Coordinator (July 2023 – present).

Responsibilities will focus on facilitating the delivery and development of laboratory courses in the Organic Chemistry curriculum, including:

• Acquire the reagents, small equipment, and supplies necessary for executing experiments in the teaching lab.

• Set up and take down reagents, equipment, and supplies for weekly experiments with the help of TA assistant.

• Be available during laboratory sessions to help with troubleshooting and replenishment of reagents and supplies.

• Help with maintaining the instrumentation for the labs to ensure facile use by the undergraduate students (FT-NMR, FT-IR, and GC-MS, etc.).

• Assist with implementation of new experiments for the laboratory curriculum

• Work with both the Lab Safety Manager and department chair to ensure that lab exercises, reagent preparation, and waste disposal are carried out using requisite safety protocols.

• Ensure the organization and cleanliness of the lab prep and teaching spaces.

• Select, schedule, and supervise graduate student lab assistants (TAs) to help with the responsibilities outlined above.

• Teach the 'Supervised Teaching' course to TAs, guiding them through the experiments and presenting demonstrations for the upcoming week.

• Coordinate student enrollments in Organic Chemistry I and II Labs

Graduate Students Admission Committee member (June 2023 – present)

- Evaluate applications, including academic transcripts, letters of recommendation, personal statements, and relevant test scores.
- Participate in interviews with prospective students to assess their qualifications, research interests, and fit for the program.
- Collaborate with other committee members to rank and select candidates based on established criteria.

- Contribute to the final admission decisions and discuss any borderline cases with the committee.
- Provide feedback to applicants, particularly those who were not accepted, if required by the institution.
- Assist in developing or revising admission policies and criteria to ensure fairness and alignment with the program's goals.
- Participate in recruitment efforts, such as open houses or informational sessions, to attract strong candidates.

Served as department representative in Spring Open House, being held on Saturday, April 15, 2023.

Chemistry Honors-in-Discipline Program Coordinator and Advisor (Aug 2015 – 2022).

Graduate Students Admission Committee member (Aug 2015 – 2021). Representing as Organic Chemistry faculty in graduate student Evaluation and Admission committee.

Served as department representative in Spring and Fall Open House, being held on Saturday, October 18, 2014, Saturday February 14, 2015, Saturday April 11, 2015, Thursday, May 12, 2016, Tuesday, March 17, 2018, and Saturday, March 30, 2019.

Participation in graduation ceremony on Saturday May 2015-2019 in Memorial Center.

Served in writing and execution of comprehensive exam. Every semester, I contributed in writing the questions and performing of the organic graduate student's comprehensive exam.

PROFESSIONAL AFFILIATIONS

Served as SynthBio Committee member (August 2023-present)

American Chemical Society (ACS), 2017 - Present
Organic Division of American Chemical Society, 2017 – Present
The Philadelphia Organic Chemists' Club (POCC), 2007 – 2009
The Phytochemical Society of North America (PSNA), 2018 – Present
Center of Excellence for Inflammation, Infectious Disease and Immunity (CIIDI), 2016 – Present

SPECIALIZED COURSES & CERTIFICATIONS

Pivot: Funding Search Tool Training, East Tennessee State University, Wednesday, 2019.

ETSU Research Grant Development Course, completed two semesters faculty Grant Writing Courses held on Ross Hall, taught by Dr. Bill Duncan (GRAD7820/GRAD7830) during Fall 2015 and Spring 2016.

Preventing Discrimination and Sexual Violence: Title IX, VAWA and Clery Act for Faculty and Staff – Online Training, East Tennessee State University, 2014-2019.

Title VI for Tennessee Faculty and Staff – Online Training, East Tennessee State University, 2014-2018.

Conflict of Interest Course, Collaborative Institutional Training Initiative.

Biosafety Lab Training – Department of Chemistry, East Tennessee State University.

Equity & Diversity - Respect in the Workplace – Online Training, East Tennessee State University.

Advising workshop –Sep 18 and Sep 23, 2015. Two hours each day workshop for advisors. 4-year plans, BS requirements, learning support, getting into Goldlink, taking notes in Goldlink, Using schedule builder, Resources available.

Advising workshop –Feb 26, 2019 in 225 Nicks Hall with Gordon Anderson. Implementing federal financial aid regulations that relate to a student's Program of Study.

2018 P&T workshop – Tenure and promotion workshop on Wednesday, April 11, 2018 in 121 Rogers Stout Hall with Gordon Anderson. Discussed the application and review process, as well as the on-line system at ETSU.

2019 P&T workshop – Arts and Sciences Tenure and Promotion Information Workshop on Wednesday, April 3, 2019 at Burleson 304 with Gordon Anderson.

Active Shooter Training session for faculty and staff in the College of Arts and Sciences held on Thursday, September 29, 2016 in the Culp Auditorium with Andrew Worley, ETSU's Emergency Management Specialist.

AWARDS AND HONORS

1st place, Undergraduate Students Award at 2024 ETSU Appalachian Student Research Forum poster presentation. Wesley Jean, Mary Andreae, Andy Clark, Michael Cartwright and **Abbas G. Shilabin**. D.P. Culp Center Ballroom, 5 April **2024**. Synthesis of a water-soluble vitamin D derivative.

1st place, Undergraduate Students Award at 2024 ETSU Appalachian Student Research Forum poster presentation. Maeren Horton and **Abbas G. Shilabin**. D.P. Culp Center Ballroom, 5 April **2024**. Extraction of Sandalwood Essential Oil: Isolating α/β-Santalol.

1st place, Master's Students Award at 2023 ETSU Appalachian Student Research Forum poster presentation, Biological and Chemical Sciences. Amonah Arije, Andy Agbakpo, Sean Fox and **Abbas G. Shilabin**. D.P. Culp Center Ballroom, 25 April 2023. Isolation and Structural Determination of Bioactive Metabolites Produced by a Soil Bacterium, *Arthrobacter sp.* TAJX1902.

1st place, Undergraduate Students Award at 2023 ETSU Appalachian Student Research Forum poster presentation, Biological & Life Sciences Group A. Noah Burnett and **Abbas G. Shilabin**. D.P. Culp Center Ballroom, 25 April 2023. Syntheses and Purification of Cannabinoid Derivatives.

The journal selected our publication (*Med. Chem. Res.* ***2020****, 1-11*) for the cover image of the first issue of Medicinal Chemistry Research **2021**, 30(1).

1st place winner of the East Tennessee State University 180 Undergraduate Research Competition: Noah Lyons and **Abbas G. Shilabin**. Boland Undergraduate Research Symposium, Millennium Centre. Synthesis of 1,2,4-Oxadiazolidin-5-one Derivatives as Potential β-lactamase Inhibitors. March 2019.

1st place Award at ETSU Appalachian Student Research Forum poster presentation, Natural Sciences Session, Group B: Joseph O. Osazee and **Abbas G. Shilabin**. D.P. Culp Student Center. Fragment-Based Design and Evaluation of Pyrrolo[2,1-C][1,4]benzodiazepine Derivatives as Novel Non-β-lactam β-Lactamase Inhibitors. April 2005.

1st place Award at Appalachian Student Research Forum poster presentation, Biomedical and Health Sciences Session: Amber L. Ward, Pushpavathi Manikindi, **Abbas G. Shilabin**, and Bert C. Lampson: ETSU D.P. Culp Student Center. Using Genomics to Infer the Identity of an Inhibitory Compound Produced by *Rhodococcus sp.* MTM3W5. April 2005.

Doctorate scholar's award, awarded by German research society, Deutsche Forschrung Gemeinschaft (DFG) for conducting research at the Clausthal University of Technology, 2002-2005.

Outstanding undergraduate of the year award for the best BSc graduate, University of Tabriz, 1992.

CITIZENSHIP

United States of America