Curriculum Vitae

Timothy R. Ramadhar, Ph.D.

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Academic Employment

1. *Institution*: Howard University — Aug. 2018 – Present
   Position: Assistant Professor (Tenure-Track)

Education

3. *Institution*: Harvard Medical School — Jan. 2013 – June 2018
   Position: Postdoctoral Fellow (Chemical Biology)
   Supervisor: Prof. Jon Clardy
   Award: NIH F32 Ruth L. Kirschstein National Research Service Award

2. *Institution*: University of Toronto — Sept. 2007 – Oct. 2012
   Degree: Doctor of Philosophy (Organic Chemistry)
   Supervisor: Prof. Robert A. Batey
   Awards: NSERC Canada Graduate Scholarships D3 and M

1. *Institution*: University of Waterloo — Sept. 2003 – June 2007
   Degree: Bachelor of Science (Honours Biochemistry)
   Honours: Graduated on Dean's Honours List

Research Experience

5. *Position:* Postdoctoral Fellow, Chemical Biology, Harvard Medical School — Jan. 2013 – June 2018
   Supervisor: Prof. Jon Clardy, Harvard Medical School (Biological Chemistry and Molecular Pharmacology)
   Projects: Discovery of potential therapeutic agents from insect-associated symbiotic bacteria, investigating the modulatory roles of small molecules in biological systems, and analyzing and improving the crystalline sponge method

4. *Positions:* Research Assistant, Organic Chemistry — Oct. 2012 – Dec. 2012
   Ph.D. Candidate — Sept. 2007 – Oct. 2012
   Supervisor: Prof. Robert A. Batey, University of Toronto (Chemistry)
   Thesis: Synthetic and Theoretical Studies of [3,3]-Sigmatropic Rearrangements and Development of Allylboration Reactions

3. *Positions:* Summer Research Assistant, Medicinal Chemistry — May 2007 – Aug. 2007
   Honours Thesis Student — Sept. 2006 – Apr. 2007
   Volunteer — Sept. 2005 – Dec. 2005
   NSERC USRA Student — May 2005 – Aug. 2005
   Supervisor: Prof. Gary I. Dmitrienko, University of Waterloo (Chemistry)
   Project: Design and synthesis of broad-spectrum inhibitors for class B and class D β-lactamases

2. *Position:* NSERC USRA Student, Physical Chemistry / NMR Spectroscopy — May 2006 – Aug. 2006
   Supervisor: Prof. William P. Power, University of Waterloo (Chemistry)
   Project: Development of gel-phase nuclear magnetic resonance spectroscopic experiments for analyzing peptides on solid support synthetic resins

1. *Positions:* NSERC USRA Student, Biochemistry — May 2004 – Aug. 2004
   CHEM 13 News Research Assistant — Sept. 2003 – Apr. 2004
   Supervisor: Prof. Michael Palmer, University of Waterloo (Chemistry)
   Project: Elucidation and characterization of the proteomic domains in *S. agalactiae* CAMP factor

Teaching Experience

10. CHEM 243 – Advanced Organic Chemistry, Instructor, Howard University – Fall 2022
9. CHEM 142 – Organic Chemistry II Lecture, Instructor, Howard U. – Spring 2020–24
8. CHEM 006 – General Chemistry Laboratory II, Instructor, Howard U. – Spring 2020–22
7. CHEM 141 – Organic Chemistry I Lecture, Instructor, Howard U. – Fall 2019–24
6. CHEM 145 – Organic Chemistry Laboratory, Instructor, Howard U – Spring 2019/2023-24, Fall 2021/23-24
5. CHEM 005 – General Chemistry Laboratory I, Instructor, Howard U. – Fall 2018–20
4. CHEM 255 – Practical Crystallography in Chemistry and Materials Science (Grad Course)
   Teaching Fellow*,* Harvard University – Winter 2014
   * Q Evaluations – Section Leader / TF Overall Mean Score: 4.8 / 5
3. CHM 101 – Chemistry and Biology of Organic Molecules
   Teaching Assistant – Tutorial Demonstrator, University of Toronto – Winter 2011, Winter 2012
2. CHM 343 – Organic Synthesis Techniques
   Teaching Assistant – NMR Demonstrator, University of Toronto – Winter 2008
1. CHM 247 – Introductory Organic Chemistry II
   Teaching Assistant – Laboratory Demonstrator, University of Toronto – Fall 2007

Teaching Certifications

2. Distance Learning Certification, CETLA, Howard University (2020)
1. Blackboard Certification, CETLA, Howard University (2020)

Awards and Scholarships

20. Howard University College of Arts and Sciences Outstanding Scholarship Award (Assistant Professor, 2021-2022)
19. National Institutes of Health (NIH) Ruth L. Kirschstein National Research Service Award F32 Postdoctoral Fellowship Grant (grant numbers: 1F32GM108415-01A1 | 5F32GM108415-02) (May 2014 – April 2016)
18. Doctoral Completion Award, University of Toronto (Sept. 2012)
17. Teaching Reduction – University of Toronto Fellowship (Sept. 2011 – Aug. 2012)
16. Natural Sciences and Engineering Research Council (NSERC) of Canada Alexander Graham Bell Canada Graduate Scholarship (CGS) D3 (Sept. 2008 – Aug. 2011)
15. Mary H. Beatty Fellowship, University of Toronto (Sept. 2007 – Aug. 2008)
14. Helen Sawyer Hogg Graduate Admission Award, University of Toronto (Sept. 2007 – Aug. 2008)
13. NSERC Canada Graduate Scholarship (CGS) M Scholarship (Sept. 2007 – Aug. 2008)
12. Ontario Graduate Scholarship, Ontario Ministry of Training, Colleges, and Universities (award declined both Sept. 2007 – Aug. 2008 and Sept. 2008 – Aug. 2009)
11. SCI Merit Award, The Society of Chemical Industry (Sept. 2007 – Aug. 2008)
10. ACS DOC NOS Travel Award for Outstanding Undergraduate Students (June 2007)
9. SOUSCC Biochemistry / Bioorganic Division Oral Presentation Competition – 2nd Place (March 2007)
8. Biochemistry Upper – Year Scholarship, University of Waterloo (awarded twice: Sept. 2006 – April 2007; Sept. 2004 – Apr. 2005)
7. NSERC Undergraduate Student Research Award (USRA) (awarded three times: May 2006 – Aug. 2006; May 2005 – Aug. 2005; May 2004 – Aug. 2004)
6. Bruce Wyler Kelly Memorial Prize, University of Waterloo (Sept. 2005 – Apr. 2006)
5. Gretchen E. Mueller Memorial Biochemistry Scholarship, UWaterloo (Sept. 2005 – Apr. 2006)
4. Don E. Irish Scholarship in Science, University of Waterloo (Sept. 2004 – Apr. 2005)
3. Queen Elizabeth II Aiming for the Top Scholarship, Ontario Ministry of Training, Colleges, and Universities (Sept. 2003 – Apr. 2007)
2. Dean's Honours List, University of Waterloo (awarded for all eight terms)
1. CHEM 13 News Research Assistantship, University of Waterloo (Sept. 2003 – Apr. 2004)

Faculty Grants / Research Funding

Current Support

NSF Ramadhar (PI) | Butcher and Cummings (co-PI) Value: $199,472
Planning: Exploring a Partnership between Historically Black Universities in the District of Columbia and NSF's ChemMatCARS in Alignment with the NSF PREC Program (11/15/2023 – 10/31/2025)

NSF Cummings (PI) | Kim, Kulkarni, Raghavan, and Ramadhar (Co-PI) Value: $1,089,981
MRI: Track 1 Acquisition of a 500 MHz solid/liquid-state NMR to Expand Interdisciplinary Research and Education at Howard University (09/01/2023 – 08/31/2026)

NSF Ramadhar (PI) | Butcher and Cummings (co-PI) Value: $540,974 (NSF + HU)
MRI: Acquisition of a High-Brilliance X-Ray Diffractometer for Fundamental Materials and Catalysis Research and Education at Howard University (09/01/2021 – 08/31/2024 *No Cost Extension Requested*)

Previous Support

APS Ramadhar (PI) Beam time awarded: 18 x 8-hour shifts
Investigation of the Crystalline Sponge Method using Synchrotron Radiation (2022-2023)

Pfizer Inc. Ramadhar (PI) Value: $321,606
Metal-Organic Frameworks for Metabolite Structure Elucidation (09/01/2019 – 12/31/2023)

Students / Fellows Mentored in Independent Career

Master's Student: Eric Jackson (Graduated December 2023)

Undergraduate Students: Temiloluwa Akande, Natalie Fort, Chelsea Stephens, Francis Elimbi Moudio, Ravyn Dorleus, Amber Jones, Shayla Joseph

Postdoctoral Fellows: Drs. Ashley Cardenal, Maegan Dailey

Publications

29. Dailey, M.; Jackson, E. W.; **Ramadhar, T. R.*** Crystal structures, phase transition, and Hirshfeld surface analyses of the bromide and chloride congeners of aqua[2,4,6-tris(4-pyridyl)-1,3,5-triazine]zinc(II) halide. *Acta Crystallographica Section C: Structural Chemistry*, **2024**, *80*, 545–552.
28. Cardenal, A., **Ramadhar, T.*** Leveraging Quantum-Chemical *In Silico* Techniques to Determine Guest Binding Energies for the Crystalline Sponge Method. *Acta Crystallographica Section A: Foundations and Advances* **2023**, *79*, c1274. (Published conference abstract for 26th Congress and General Assembly of the International Union of Crystallography 2024, Melbourne, Victoria, Australia, August 22–29).
27. **Ramadhar, T.**;* Cardenal, A. Leveraging Quantum-Chemical *In Silico* Techniques to Determine Guest Binding Energies for the Crystalline Sponge Method. *Acta Crystallographica Section A: Foundations and Advances* **2022**, *78*, a261. (Published conference abstract for 2022 American Crystallographic Association Meeting, Portland, OR, USA, July 29 – August 2).
26. Cardenal, A. D.; **Ramadhar, T. R.*** The Crystalline Sponge Method: Quantum Chemical *In Silico* Derivation and Analysis of Guest Binding Energies. *CrystEngComm* **2021**, *23*, 7570–7575.
25. Cardenal, A. D.; **Ramadhar, T. R.*** Application of Crystalline Matrices for the Structural Determination of Organic Molecules. *ACS Central Science* **2021***, 7*, 406–414. (Open Access)
24. Bowden, G. D.; Reis, P. M.; Rogers, M. B.; Bone Relat, R. M.; Brayton, K. A.; Wilson, S. K.; Di Genova, B. M.; Knoll, L. J.; Nepveux, F. J., V; Tai, A. K.; **Ramadhar, T. R.**; Clardy, J.; O'Connor, R. M.* A conserved coccidian gene is involved in Toxoplasma sensitivity to the anti-apicomplexan compound, tartrolon E**.** *International Journal of Parasitolology: Drugs and Drug Resistance* **2020**, *14*, 1–7.

23. O'Connor, R. M.;* Nepveux, F. J., V; Abenoja, J.; Bowden, G.; Reis, P.; Beaushaw, J.; Relat, R.; Driskell, I.; Giminez, F.; Riggs, M. W.; Schaefer, D. A.; Schmidt, E. W.; Lin, Z.; Distel, D. L.; Clardy, J.; **Ramadhar, T. R.**; Allred, D. R.; Fritz, H.; Rathod, P.; Chery, L.; White, J. A symbiotic bacterium of shipworms produces a compound with broad spectrum anti-apicomplexan activity. *PLOS Pathogens* **2020**, *16*, e1008600.
22. Strandwitz, P.;‡* Kim, K. H.;‡ Terekhova, D.; Liu, J. K.; Sharma, A.; Levering, J.; McDonald, D.; Dietrich, D.; **Ramadhar, T. R.**; Lekbua, A.; Mroue, N.; Liston, C.; Stewart, E. J.; Dubin, M. J.; Zengler, K.; Knight, R.; Gilbert, J. A.; Clardy, J.; Lewis, K.* GABA Modulating Bacteria of the Human Gut Microbiota. *Nature Microbiology* **2019**, *4*, 396.
21. Puri, A. W.;‡ Mevers, E.;‡ **Ramadhar, T. R.**;‡ Petras, D.; Liu, D.; Piel, J.; Dorrestein, P. C.; Greenberg, E. P.; Lidstrom, M. E.; Clardy, J.* Tundrenone: An Atypical Secondary Metabolite from Bacteria with Highly Restricted Primary Metabolism. *Journal of the American Chemical Society* **2018,** *140*, 2002–2006. (‡ - Equal first authorship)
20. **Ramadhar, T. R.**; Kawakami, J.; Batey, R. A.* Sequential O-Arylation / Lanthanide(III)-Catalyzed [3,3]-Sigmatropic Rearrangement of Bromo-Substituted Allylic Alcohols. *Synlett* **2017**, *28*, 2865–2870.
19. **Ramadhar, T. R.;*** Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* The Crystalline Sponge Method: A Solvent-Based Strategy to Facilitate Noncovalent Ordered Trapping of Solid and Liquid Organic Compounds. *CrystEngComm* **2017**, *19*, 4528–4534. (Co-corresponding first author)
18. Beemelmanns, C.;‡ **Ramadhar, T. R.**;‡ Kim, K. H.;‡ Klassen, J. L.; Cao, S.; Wyche, T. P.; Hou, Y.; Poulsen, M.; Bugni, T. S.; Currie, C. R.; Clardy, J.* Macrotermycins A–D, Glycosylated Macrolactams from a Termite-Associated *Amycolatopsis* sp. M39. *Organic Letters* **2017**, *19*, 1000–1003.
17. Mevers, E.; Saurí, J.; Liu, Y.; Moser, A.; **Ramadhar, T. R.**; Varlan, M.; Williamson, R. T.; Martin, G. E.; Clardy, J.* Homodimericin A: A Complex Hexacyclic Fungal Metabolite. *Journal of the American Chemical Society*, **2016**, *138*, 12324–12327.
16. Sit, C. S.;‡ Ruzzini, A. C.;‡ Van Arnam, E. B.; **Ramadhar, T. R.**; Currie, C. R.; Clardy, J.* Variable genetic architectures produce virtually identical molecules in bacterial symbionts of fungus-growing ants. *Proceedings of the National Academy of Sciences USA*, **2015**, *112*, 13150–13154. (Open access)
15. Hiraki, M.;‡ Hwang, S.-Y.;‡ Cao, S.;‡ **Ramadhar, T. R.**; Byun, S.; Yoon, K. W.; Lee, J. H.; Chu, K.; Gurkar, A. U.; Kolev, V.; Zhang, J.; Namba, T.; Murphy, M. E.; Newman, D. J.; Mandinova, A., Clardy, J.*, Lee, S. W.* Small Molecule Reactivation of Mutant p53 through wt-like p53-Hsp40 Regulatory Axis. *Chemistry and Biology* **2015**, *22*, 1206–1216. (Open access)
14. Byun, S.; Lim, S.; Mun, J. Y.; Kim, K. H.; **Ramadhar, T. R.**; Farrand, L.; Shin, S. H.; Thimmegowda, N. R.; Lee, H. J.; Frank, D. A.; Clardy, J.,* Lee, S. W.,* Lee, K. W.* Identification of a Dual Inhibitor of Janus Kinase 2 (JAK2) and p70 Ribosomal S6 Kinase1 (S6K1) Pathways. *Journal of Biological Chemistry*, **2015**, 290, 23553–23562. (Open access)
13. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* The Crystalline Sponge Method: MOF Terminal Ligand Effects. *Chemical Communications* **2015**, *41*, 11252–11255. (Open access)

    ****See Media Coverage Section****
12. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* Analysis of Rapidly-Synthesized Guest-Filled Porous Complexes with Synchrotron Radiation: Practical Guidelines for the Crystalline Sponge Method. *Acta Crystallographica Section A: Foundations and Advances* **2015**, *71*, 46–58. (Open access)

    ****See Media Coverage Section****
11. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* The Crystalline Sponge Method: Synthetic and Crystallographic Guidelines. *Acta Crystallographica Section A: Foundations and Advances* **2014**, *70*, C1784. (Published conference abstract for IUCr2014 in Montréal, Québec, Canada, Aug. 5–12, 2014)
10. Kim, K. H.;‡ **Ramadhar, T. R.**;‡ Beemelmanns, C.;‡ Cao, S.; Poulsen, M.; Currie, C. R.; Clardy, J.* Natalamycin A, an Ansamycin from Termite-Associated *Streptomyces* sp. *Chemical Science* **2014**, *5*, 4333–4338.
9. **Ramadhar, T. R.**; Beemelmanns, C.; Currie, C. R.; Clardy, J.* Bacterial Symbionts in Agricultural Systems Provide a Strategic Source for Antibiotic Discovery. *Journal of Antibiotics* **2014**, *67*, 53–58. (Review article)
8. **Ramadhar, T. R.**; Bansagi, J.; Batey, R. A.* Mild Double Allylboration Reactions of Nitriles and Anhydrides Using Potassium Allyltrifluoroborate. *Journal of Organic Chemistry* **2013**, *78*, 1216–1221.

7. **Ramadhar, T. R.**;***** Batey, R. A.* Accurate Prediction of Experimental Free Energy of Activation Barriers for the Aliphatic-Claisen Rearrangement through DFT Calculations. *Computational and Theoretical Chemistry* **2011**, *976*, 167–182. (Co-corresponding first author)
6. **Ramadhar, T. R.**; Batey, R. A.* Resolving the Mechanistic Origins of *E*/*Z*-Selectivity Differences for the Aryl-Claisen Rearrangement through DFT Calculations. *Computational and Theoretical Chemistry* **2011**, *974*, 76–78.
5. **Ramadhar, T. R.**; Batey, R. A.* Recent Advances in Nucleophilic Addition Reactions of Organoboronic Acids and their Derivatives to Unsaturated C–N Functionalities. In *Boronic Acids: Preparation and Applications in Organic Synthesis, Medicine and Materials*, Second Edition. Hall, D. G. Ed.; Wiley-VCH: Weinheim, Germany, **2011**, Chapter 9, 427–477.
4. **Ramadhar, T. R.**; Batey, R. A.* Allylation of Imines and their Derivatives with Organoboron Reagents: Stereocontrolled Synthesis of Homoallylic Amines. *Synthesis* **2010**, 1321–1346. (Review article)
3. **Ramadhar, T. R.**; Kawakami, J.; Lough, A. J.; Batey, R. A.* Stereocontrolled Synthesis of Contiguous C(sp^3)-C(aryl) Bonds by Lanthanide(III)-Catalyzed Domino Aryl-Claisen [3,3]-Sigmatropic Rearrangements. *Organic Letters* **2010**, *12*, 4446–4449.
2. Johnson, J. W.; Evanoff, D. P.; Savard, M. E.; Lange, G.; **Ramadhar, T. R.**; Assoud, A.; Taylor, N. J.; Dmitrienko, G. I.* Cyclobutanone Mimics of Penicillins: Effects of Substitution on Conformation and Hemiketal Stability. *Journal of Organic Chemistry* **2008**, *73*, 6970–6982.
1. **Ramadhar, T. R.**; Amador, F.; Ditty, M. J. T.; Power, W. P.* Inverse H-C *ex situ* HRMAS NMR Experiments for Solid-Phase Peptide Synthesis. *Magnetic Resonance in Chemistry* **2008**, *46*, 30–35.

Patent Applications

2. Dmitrienko, G. I.;* Johnson, J. W.; **Ramadhar, T. R.**; Viswanatha, T.; Viswanatha, S. "Beta-Lactamase Inhibitors". US Patent Application 20110046101 A1. Published February 24, 2011.
1. Dmitrienko, G. I.;* Viswanatha, T.; Johnson, J. W.; **Ramadhar, T. R.** "Inhibitors of Class B and Class D β-Lactamases". WIPO/PCT Application WO 2009/114921 A1. Published September 24, 2009.

Invited Lectures

8. **Ramadhar, T. R.*** "Leveraging Quantum-Chemical *In Silico* Techniques to Determine Guest Binding Energies for the Crystalline Sponge Method". 2024 Advanced Crystallography Workshop, NSF's ChemMatCARS, Advanced Photon Source, Argonne National Laboratory, Lemont, IL, USA, May 13–14.

7-3. **Ramadhar, T. R.*** "The Crystalline Sponge Method: Enhancing the Technique for Small Molecule Structural Elucidation.". Seminars given at:
- University of Chicago (in-person): May 20, 2022
- Cerevel Therapeutics (virtual): May 10, 2022
- The College of Wooster (virtual): April 14, 2022
- George Washington University (virtual): April 1, 2022
- University of the West Indies Mona (virtual): January 27, 2022

2. **Ramadhar, T. R.*** "The Crystalline Sponge Method as a Tool for Small Molecule Structural Elucidation." International Society for Chemical Ecology (ISCE) 2019. Atlanta, GA, USA, June 2 – 6, 2019.
1. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* "Introduction to Chemical Crystallography and the Crystalline Sponge Method". Center for the Science of Therapeutics (CSofT) / Center for the Development of Therapeutics (CDoT) New Technologies Club, Broad Institute of MIT and Harvard, Cambridge, MA, USA, March 4, 2016. *Inaugural Speaker*

Conference Oral Presentations

7. **Ramadhar, T. R.**; Kim, K. H.; Beemelmanns, C.; Cao, S.; Klassen, J.; Wyche, T. P.; Hou, Y.; Poulsen, M.; Bugni, T.; Currie, C. R.; Clardy, J.* "Discovery and Detailed Structural Studies of Natural Products from Termite-Associated Actinobacteria". 99th Canadian Chemistry Conference and Exhibition 2016, Halifax, Nova Scotia, Canada. June 5–9.

6. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* "Practical Guidelines and Insights for the Crystalline Sponge Method". 2015 American Crystallographic Association Meeting, Philadelphia, PA, USA, July 25–29.
5. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* "The Crystalline Sponge Method: Procedural Improvements and Perspectives". 98th Canadian Chemistry Conference and Exhibition 2015, Ottawa, Ontario, Canada. June 13–17.
4. **Ramadhar, T. R.;** Batey, R. A.* "A DFT Study of Reactivity and Selectivity of Aryl-Claisen Rearrangements: Analysis of Various Functionals for the Claisen Rearrangement". 93rd Canadian Chemistry Conference and Exhibition 2010, Toronto, Ontario, Canada. May 29 – June 2.
3. **Ramadhar, T. R.**; Kawakami, J.; Lough, A. J.; Batey, R. A.* "Development and Studies of Catalyzed Mono and Domino Aryl-Claisen Rearrangements". 92nd Canadian Chemistry Conference 2009, Hamilton, Ontario, Canada. May 30 – June 3.
2. **Ramadhar, T. R.**; Johnson, J. W.; Marrone, L.; Evanoff, D. P.; Goodfellow, V. J.; Spencer, J.; Walsh, T. R.; Viswanatha, T.; Dmitrienko, G. I.* "Design and Synthesis of Broad-Spectrum Inhibitors for Class B and Class D β-lactamases". 35th Southern Ontario Undergraduate Student Chemistry Conference 2007, University of Ontario Institute of Technology, Oshawa, Ontario, Canada. March 17.
1. **Ramadhar, T. R.**; Amador, F.; Ditty, M. J. T.; Power, W. P.* "BIRD-HMQC and CT-HMBC-1: Promising Gel-phase Inverse NMR Experiments for Determining the ^{1}H-^{13}C Connectivities of Peptides on Wang Resin". 2006 MOOT XIX NMR Symposium, University of Guelph, Guelph, Ontario, Canada. Sept. 23–24.

Conference Poster Presentations

12. Cardenal, A. D.; **Ramadhar, T. R.*** "Leveraging Quantum-Chemical *In Silico* Techniques to Determine Guest Binding Energies for the Crystalline Sponge Method". 26th Congress and General Assembly of the International Union of Crystallography 2024, Melbourne, Victoria, Australia, August 22–29.
11. Cardenal, A. D.; **Ramadhar, T. R.*** "Leveraging Quantum-Chemical *In Silico* Techniques to Determine Guest Binding Energies for the Crystalline Sponge Method". Canadian Chemistry Conference and Exhibition (CSC 2023), Vancouver, British Columbia, Canada, June 4–8.
10. Cardenal, A. D.; **Ramadhar, T. R.*** "Leveraging Quantum-Chemical *In Silico* Techniques to Determine Guest Binding Energies for the Crystalline Sponge Method". 2022 American Crystallographic Association Meeting, Portland, OR, USA, July 29 – August 2.
9. **Ramadhar, T. R.***; Cardenal, A. D.; Zhao, S.-L.; Chen, Y.-S.; Clardy, J. "The Crystalline Sponge Method: Enhancing the Technique for Small Molecule Structural Elucidation." 47th National Organic Symposium 2022, La Jolla, CA, USA, June 26–30, 2022.
8. **Ramadhar, T. R.*** "The Crystalline Sponge Method as a Tool for Small Molecule Structural Elucidation." Advanced Manufacturing Workshop, National Science Foundation, Alexandria, VA, USA, Nov. 6–8, 2019.
7. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* "The Crystalline Sponge Method: Synthetic and Crystallographic Guidelines". 23rd Congress and General Assembly of the International Union of Crystallography (IUCr2014), Montréal, Québec, Canada, August 5 – 12. (Published conference abstract: *Acta Crystallographica Section A: Foundations and Advances* **2014**, *70*, C1784).
6. **Ramadhar, T. R.**;‡ Kim, K. H.;‡ Beemelmanns, C.;‡ Cao, S.; Poulsen, M.; Currie, C. R.; Clardy, J.* "Natalamycin A, an Ansamycin from Termite-Associated *Streptomyces* sp.". 2014 Gordon Research Conference: Natural Products, Andover, NH, USA, July 20–25. (‡ - Equal first authorship)
5. **Ramadhar, T. R.;** Zheng, S.-L.; Beemelmanns, C.; Clardy, J.* "Adaptation and Application of Nonstandard Techniques in Small Molecule Structural Elucidation". 2013 Harvard Medical School Biological Chemistry and Molecular Pharmacology Departmental Retreat, North Conway, NH, USA, October 22–24.
4. **Ramadhar, T. R.**; Batey, R. A.* "Synthetic and Theoretical Investigations on Aryl- and Aliphatic-Claisen Rearrangements". 2011 American Chemical Society Division of Organic Chemistry Graduate Research Symposium, University of California Santa Barbara, Santa Barbara, CA, USA, July 14–17.
3. **Ramadhar, T. R.**; Kawakami, J.; Lough, A. J.; Batey, R. A.* "Lanthanide(III)-Catalyzed Single and Domino Aryl-Claisen Rearrangements for the Synthesis for Contiguous Aryl Moieties and the Preliminary Design of Heterocycles". 41st National Organic Symposium 2009, Univ. Colorado, Boulder, CO, USA. June 7–11.

2. **Ramadhar, T. R.**; Kawakami, J.; Lough, A. J.; Batey, R. A.* "Development, Investigation and Potential Applications of Lanthanide-Catalyzed Domino Aryl-Claisen Rearrangements". 2008 Quebec-Ontario Minisymposium in Synthetic and Bioorganic Chemistry, Univ. Toronto, Toronto, ON, Canada. Nov. 7–9.
1. **Ramadhar, T. R.**; Johnson, J. W.; Marrone, L.; Evanoff, D. P.; Goodfellow, V. J.; Spencer, J.; Walsh, T. R.; Viswanatha, T.; Dmitrienko, G. I.* "Development of Metallo-β-Lactamase and Oxacillinase Broad-Spectrum Competitive Inhibitors". 40th ACS DOC National Organic Symposium 2007, Duke University, Durham, NC, USA. June 3–7.

Conference Contributions (* - presenting author)

13. Dailey, M.; Jackson, E. W.; Dorleus, R.; Jones, A.;* Joseph, S.; **Ramadhar, T. R.** "Exploring New Crystalline Sponges for Challenging Molecules". Howard University Research Symposium 2024, Washington, District of Columbia, Apr. 25.
12. Jackson, E. W.*; **Ramadhar, T. R.** "Altering the growing conditions of host crystals in the crystalline sponge method". 2023 Southeastern Regional Meeting of the American Chemical Society, Durham, North Carolina, Oct. 25–28.
11. Oscar, C.*; **Ramadhar, T.** "The Use of O-Alkylation to Enhance Structural-Stability and Biological Activity of Rotigotine". 2022 Chemical and Biological Defence Science & Technology, Moscone Center, San Francisco, California, Dec. 6–9.
10. Oscar, C.*; **Ramadhar, T.** "The Use of O-Alkylation to Enhance Structural-Stability and Biological Activity of Rotigotine". 2022 Merck Emerging Talent Symposium, Merck Campus, Rahway, New Jersey, Nov. 17.
9. Batey, R. A.*; Janetzko, J.; Beveridge, R.; Nowrouzi, F.; Kafal, A.; **Ramadhar, T.**; Bansagi, J. "Synthetic Utility of Organotrifluoroborate Salts and Application in Natural Products Synthesis". 2012 Boron Americas XII Conference, Purdue University, West Lafayette, Indiana, June 7–8.
8. Nowrouzi, F.; Janetzko, J.; **Ramadhar, T.**; Bansagi, J.; Batey, R.A.* "Synthetic Utility of Allylic Trifluoroborate Salts". 2011 IME BORON XIV Conference, Niagara Falls, Ontario, Canada. Sept. 11–15.
7. Guillemette, J. G.*; Labbé, G.; Krismanich, A.; de Groot, S.; Rasmusson, T.; **Ramadhar, T.**; Dmitrienko, G. I. "Design and Evaluation of Inhibitors of Class II Fructose 1,6-Bisphosphate Aldolase". 3rd Georgian Bay International Conference on Bioinorganic Chemistry 2011, Parry Sound, ON, Canada. May 31–June 4.
6. Power, W. P.*; **Ramadhar, T.**; Amador, F.; Ditty, M.; Hunter, H.; Andrey, S.; Chan, M. "HRMAS NMR Studies of Solid-Phase-Supported Peptides". 55th International Conference on Analytical Sciences and Spectroscopy 2009, Queen's University, Kingston, Ontario, Canada. Aug. 9–12.
5. Biernat, M. G.; **Ramadhar, T. R.**; Batey, R. A.* "Tetra-*N*-Alkylammonium Organotrifluoroborates - Development and Applications". 37th Southern Ontario Undergraduate Student Chemistry Conference 2009. Brock University, St. Catharines, Ontario, Canada. March 28.
4. Power, W. P.*; **Ramadhar, T. R.**; Amador, F. J.; Ditty, M. J. T.; Emwas, A. H. "Evidence of Multiple Conformations in Growing Peptide Chains: Applications of HRMAS to Questions of Structure in Solid-Phase Peptide Synthesis". 5th Alpine Conf. on Solid-State NMR 2007, Chamonix, France. Sept. 9–13.
3. Johnson, J. W.; Evanoff, D. P.; **Ramadhar, T. R.**; Taylor, N. J.; Dmitrienko, G. I.* "Cyclobutanone Analogs of Penicillins and Effects of Substitution on Conformation and Hemiacetal Formation". 40th ACS DOC National Organic Symposium 2007, Duke University, Durham, North Carolina, USA. June 3–7.
2. Power, W. P.*; Amador, F.; **Ramadhar**, **T.**; Ditty, M.; Emwas, A. "HRMAS NMR Study of Peptide Conformations in Solid-Phase Synthesis". 2006 MOOT XIX NMR Symposium, University of Guelph, Guelph, Ontario, Canada. Sept. 23–24.
1. Johnson, J. W.; Evanoff, D. P.; Heynen, M.; Goodfellow, V.; **Ramadhar, T.**; Viswanatha, T.; Taylor, N. J.; Dmitrienko, G. I.* "Strategies for Discovery of Broad Spectrum Inhibitors for Class B (metallo) and Class D (serine) β-Lactamases". 89th CSC Conference 2006, Halifax, Nova Scotia, Canada. May 27–31.

Media Coverage

9. News regarding the first workshop between Howard University, University of the District of Columbia, and NSF's ChemMatCARS in the Howard University College of Arts and Sciences *First Fridays Newsletter* story "Crystallography Workshop 2024, Held in the Department of Chemistry" (May 6, 2024;

https://myemail-api.constantcontact.com/COAS-Fridays-Newsletter--May-Edition--.html?soid=1140081773001&aid=TRenmeOCZkQ)

8. News regarding the first workshop between Howard University, University of the District of Columbia, and NSF's ChemMatCARS on the NSF's ChemMatCARS website ""MSI Crystallography Workshop": April 6-7, 2024" (May 6, 2024; https://chemmatcars.uchicago.edu/2024/05/06/msi-crystallography-workshop-april-6-7-2024/)
7. News of recent single-crystal X-ray diffractometer acquisition and research featured in the Rigaku *Crystallography Times* Lab in the Spotlight article (February 2023; https://japan.rigaku.com/sites/default/files/newsletters/times.2023.02.pdf)
6. Expert opinion given and quoted in a *Science Magazine* article "NSF to end cost-sharing mandate for some grants to level the playing field" (October 28, 2022; https://www.science.org/content/article/nsf-end-cost-sharing-mandate-some-grants-level-playing-field)
5. News regarding the award of an NSF MRI grant for a new single-crystal X-ray diffractometer in the Howard University College of Arts and Sciences *First Fridays Newsletter* story "Chemistry Professors Awarded MRI Grant from the NSF" (September 10, 2021; https://mailchi.mp/3c7d1dccffe0/1st-fridays-coas-april-2-5366853?e=ee06b6d4d0)
4. Expert opinion given on a *Journal of the American Chemical Society* article by Prof. Makoto Fujita's group (**2016**, *138*, 10140–10142) and quoted in an *RSC Chemistry World* story "Explosive intermediates muzzled by crystalline sponge" (August 24, 2016; https://www.chemistryworld.com/news/explosive-intermediates-muzzled-by-crystalline-sponge/1017308.article)
3. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* *Chem. Commun.* **2015**, *51*, 11252–11255:

   Interviewed for and quoted in an *RSC Chemistry World Magazine Article* "Confronting the Crystalline Sponge" (June 24, 2015; http://www.rsc.org/chemistryworld/2015/06/confronting-crystalline-sponge) where this manuscript was solely featured.
2. Expert opinion given on a *Chemical Science* article by Prof. Makoto Fujita's group (**2015**, *6*, 3765–3768) and quoted in an *RSC Chemistry World* story "Crystalline sponge method strikes again" (May 26, 2015; http://www.rsc.org/chemistryworld/2015/05/crystal-free-x-ray-crystallography-axial-planar-chirality)
1. **Ramadhar, T. R.**; Zheng, S.-L.; Chen, Y.-S.; Clardy, J.* *Acta Cryst*. **2015**, A*71*, 46–58:

   b. Interviewed for and quoted in an *ACS Chemical and Engineering News* article "Crystalline Sponges Catching On With Chemists" (February 16, 2016; Vol. 93, Iss. 7, pgs. 29–30, http://cen.acs.org/articles/93/i7/Crystalline-Sponges-Catching-Chemists.html).

   a. Featured in Dr. Derek Lowe's blog *In the Pipeline* "Guidelines for MOF Crystallography" (December 12, 2014; http://blogs.sciencemag.org/pipeline/archives/2014/12/12/guidelines_for_mof_crystallography) and mentioned again in "X-ray Sponges Ride Again" (June 15, 2015; http://blogs.sciencemag.org/pipeline/archives/2015/06/15/xray_sponges_ride_again)

Professional Service

Editorial Service

2. Guest Editor, *Journal of Visualized Experiments*, Current Methods in Single-Crystal Diffraction (2021)
1. Topics Editor, *Molecules* (2021–present)

External Meeting Participation

7. NSF's ChemMatCARS National Science Foundation Site Visit, February 2024
6. NSF's ChemMatCARS Advanced Crystallography Workshop, May 2023 (Discussion Leader / Writer)
5. 2023 American Society of Pharmacognosy Annual Meeting (Session Chair)
4. Bruker AXS Demonstration Visit, October 2021
3. Rigaku Americas Corporation Demonstration Visit, September 2021
2. NSF's ChemMatCARS Advanced Crystallography Workshop, December 2019
1. Brookhaven National Laboratory – BNL/Howard Collaboration, March 2019

Grant Reviewing

2. Swiss National Science Foundation: one R'Equip 2024 grant application
1. NSF Grant Reviewer 2022 and 2020

Manuscript Refereeing

3. *Independent*: Chem, CrystEngComm, Drug Metabolism and Disposition, Journal of the American Chemical Society, Journal of Natural Products, Journal of Organic Chemistry, Organic Letters, Molecules, Nature Communications
2. *With Prof. Clardy*: Angewandte Chemie International Edition, Chemical Science, IUCrJ, Journal of the American Chemical Society, Journal of Natural Products, Nature Chemical Biology, Nature Protocols, Organic Letters
1. *With Prof. Batey*: Chemical Reviews, Journal of Organic Chemistry, Journal of Physical Organic Chemistry

Workshop / Meeting Organization

6. Crystallography Workshop (NSF PREC Planning), NSF's ChemMatCARS, Chicago, IL, Oct. 26–27, 2024
5. Crystallography Workshop (NSF PREC Planning), Howard University, Washington, D.C., April 6–7, 2024
4. Prof. Jason Benedict (University of Buffalo visit), Howard University, Washington, D.C., November 12, 2021
3. Pfizer Outreach at Howard University, Washington, D.C., October 22, 2021 (Coordination with Pfizer)
2. Pfizer Outreach at Howard University, Washington, D.C., October 12, 2020 (Coordination with Pfizer)
1. USDA-ARS Science Night at Howard University, Washington, D.C., April 3, 2019 (Coordination with USDA)

Committee Memberships

17. Executive Committee, Graduate School, Howard University (2023–Present)
16. Executive Committee, Chemistry Department, Howard University (2023–Present)
15. Co-Director of Graduate Studies, Chemistry Department, Howard University (2023–Present)
14. Local Organizing Committee, Annual Meeting of the American Society of Pharmacognosy 2023, Rockville, MD (2022–2023)
13. Organic Chemistry Division Chair, Chemistry Department, Howard University (2021–Present)
12. Instrument Committee (Chairman), Chemistry Department, Howard University (2021–Present)
11. Building/Facilities Committee, Chemistry Department, Howard University (2021–Present)
10. Undergraduate Education Committee, Chemistry Department, Howard University (2021–Present)
9. Service Course Committee, Chemistry Department, Howard University (2021–Present)
8. Graduate Education Committee, Chemistry Department, Howard University (2021–Present)
7. Judiciary Committee, College of Arts and Science, Howard University (2020–2022)
6. Chair Search Committee, Chemistry Department Howard University (2020–2021)
5. ACS Student Chapter Faculty Mentor, Howard University (September 2019 – December 2023)
4. Organic Chemistry Lecturer Hiring Committee (non-voting student member, Chemistry, University of Toronto) (Nov. 2011)
3. Associate NMR Director Hiring Committee (non-voting student member, Chemistry, University of Toronto) (Sept. 2009)
2. NMR Users Committee (Chemistry, University of Toronto) (four terms within 2008–2012)
1. Graduate Student Advisory Committee (Chemistry, University of Toronto) (one term: 2009–2010)

Current Professional Membership

American Chemical Society (Division of Organic Chemistry)