Saiful M. Chowdhury, Ph.D.
Assistant Professor
Department of Chemistry and Biochemistry
University of Texas at Arlington, Box19065
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Educations:

- **Ph.D. in Analytical Chemistry, July 2006**
  Washington State University
  Pullman, WA-99164, USA.
  Advisor: Dr. James E. Bruce, Department of Genome Sciences, University of Washington
  Thesis: "Chemical strategies for profiling protein-protein interactions and protein posttranslational modifications"

- **MS in Organic Chemistry, April 2001**
  Florida International University
  Miami, FL-33199, USA.
  Advisor: Dr. Stanislaw F. Wnuk
  Thesis: "An approach for clarification of the mechanism of inactivation of ribonucleotide reductases with 3'[^{17}O]-labeled 2'-azido-2'-deoxynucleotides"

- **M. Sc in Applied Chemistry and Chemical Technology, 1994 (First Class),** University of Dhaka
  Dhaka, Bangladesh.
  Thesis: "Studies on the quality of three selected varieties of rapeseed and mustard oils and oil cakes"

- **B.Sc (Honors) in Applied Chemistry and Chemical Technology, 1991 (First Class),** University of Dhaka
  Dhaka, Bangladesh.

Professional Affiliations (current/past):

- American Chemical Society (ACS) -Current
- American Society for Mass Spectrometry (ASMS)- Current
- American Association of Advancement of Science (AAAS)- past

Award and Honors:

- American Society of Mass Spectrometry (ASMS) travel award, 2004.
- Pacific Northwest National Laboratory (PNNL), Department of Energy (DOE) postdoctoral fellowship, 2006-2009.
- Laboratory Directed Research and Development (LDRD) grant award, PNNL (Co-principal Investigator, total 250,000 for two years), ranked 2nd out of 22 selected grant proposals.
- Fellow Award for Research Excellence (FARE), 2012, NIH: awarded to the top 25% fellow in NIH.

Professional Experiences:

- **2012- present**: Assistant Professor, Dept. of Chemistry and Biochemistry, University of Texas at Arlington, Arlington, TX.
- **2009- 2012:** Research Fellow: National Institute of Environmental Health Sciences, RTP, NC.
- **2006-2009**: Postdoctoral Research Associate C (highest research associate rank), Biological Separations and Mass Spectrometry Group, Pacific Northwest National Laboratory, Richland, WA – funded by NIAID, NIH and LDRD grant from PNNL.
    - **Technical Lead**: NCRR/ NIAID, NIH-PNNL collaborative proteomics projects with Prof. Fred Heffron of Oregon Health Science University, Portland, OR.
    - **Technical Lead**: Laboratory Directed Research and Development Grant (LDRD), PNNL (250 K for two years), Co-principal Investigator.
    - **Team Member**: Systems biology group at PNNL.
- **2001 - 2006**: Teaching Assistant of Organic and Analytical Chemistry/Research assistant, Dept. of Chemistry, Washington State University, Pullman, WA-99164.
- **1998 - 2001:** Teaching Assistant of Organic Chemistry, Dept. of Chemistry, Florida International University, Miami, FL-33174.
- **1995** - **1998**: Lecturer, Dept. of Chemical Engineering and Polymer Science, Shahjalal University of Science and Technology, Sylhet, Bangladesh.
- **1994-1995:** Lecturer, Dept. of Chemistry, Bangladesh Institute of Technology (current name, Dhaka University of Engineering and Technology), Gazipur, Dhaka Bangladesh.

Publications:

1. Bhawal RP, Shahinuzzaman AD, **Chowdhury SM***.Gas-Phase Fragmentation Behavior of Oxidized Prenyl Peptides by CID and ETD Tandem Mass Spectrometry- J Am Soc Mass Spectrom. 2016 Oct 26. [Epub ahead of print]- ***Corresponding author –emerging investigator focused issue**

2. Chakrabarty JK, Naik AG, Fessler MB, Munske GR, **Chowdhury SM***.- Differential tandem mass spectrometry-based cross-linker: a new approach for high confidence in identifying protein cross-linking.- Anal Chem. 2016 Oct 18;88(20):10215-10222.- ***Corresponding author**

3. Wanigasekara MS and **Chowdhury SM*-**Evaluation of chemical labeling methods for identifying functional arginine residues of proteins by mass spectrometry- **Analytica Chimica Acta,** accepted 2016.* ***Corresponding author.**

4. **Chowdhury, S. M.,** X. Zhu, J. J. Aloor, K. M. Azzam, K. A. Gabor, W. Ge, K. A. Addo, K. B. Tomer, J. S. Parks and M. B. Fessler (2015). "Proteomic Analysis of ABCA1-Null Macrophages Reveals a Role for Stomatin-Like Protein-2 in Raft Composition and Toll-Like Receptor Signaling." **Mol Cell Proteomics** **14**(7): 1859-1870.

5. Bhawal, Ruchika P., ConchadiSadananda, S., Bugarin, A., Laposa, B., **Chowdhury, Saiful M.*** - Mass spectrometry cleavable strategy for identification and differentiation of prenylated peptides.' – **Anal Chem**. **2015** Feb 17;87(4):2178-86. ***Corresponding author**

6. Bian, Shenjie and **Chowdhury Saiful M***- Profiling protein-protein interactions and protein structures using chemical cross-linking and mass spectrometry- *Austin J Biomed Eng,* **2014***,* 1 (4), 3. ***Corresponding author**

7. **Chowdhury, S. M*.;** Munske, G. R.; Yang, J.; Zhukova, D.; Nguyen, H.; Bruce, J. E.: Solid-phase N-terminal peptide enrichment study by optimizing trypsin proteolysis on homoarginine-modified proteins by mass spectrometry. **Rapid Commun Mass Spectrom 2014**, 28, 635-44. ***Corresponding author –three UTA undergraduate contributed in this research**

8. Du, X.; **Chowdhury, S. M.;** Manes, N. P.; Wu, S.; Mayer, M. U.; Adkins, J. N.; Anderson, G. A.; Smith, R. D.: Xlink-identifier: an automated data analysis platform for confident identifications of chemically cross-linked peptides using tandem mass spectrometry. **Journal of proteome research** 2011, 10, 923-31.

9. **Chowdhury, S. M.;** Du, X.; Tolic, N.; Wu, S.; Moore, R. J.; Mayer, M. U.; Smith, R. D.; Adkins, J. N.: Identification of cross-linked peptides after click-based enrichment using sequential collision-induced dissociation and electron transfer dissociation tandem mass spectrometry. **Analytical chemistry** 2009, 81, 5524-32. High-lighted in online news of Journal of Proteome Research. Link: http://pubs.acs.org/action/showStoryContent?doi=10.1021%2Fon.2009.06.29.395768

10. **Chowdhury, S. M.;** Shi, L.; Yoon, H.; Ansong, C.; Rommereim, L. M.; Norbeck, A. D.; Auberry, K. J.; Moore, R. J.; Adkins, J. N.; Heffron, F.; Smith, R. D.: A method for investigating protein-protein interactions related to salmonella typhimurium pathogenesis. **Journal of proteome research** 2009, 8, 1504-14. Ranked 15 in Top 20 most read articles in JPR for the March of 2009.

11. Shi, L.; **Chowdhury, S. M.;** Smallwood, H. S.; Yoon, H.; Mottaz-Brewer, H. M.; Norbeck, A. D.; McDermott, J. E.; Clauss, T. R.; Heffron, F.; Smith, R. D.; Adkins, J. N.: Proteomic investigation of the time course responses of RAW 264.7 macrophages to infection with Salmonella enterica. **Infect Immun** 2009, 77, 3227-33. Featured in Biological Science Division research highlights in PNNL. Link: http://www.pnl.gov/science/highlights/highlight.asp?id=656.

12. Rodland, K. D.; Adkins, J. N.; Ansong, C.; **Chowdhury, S.;** Manes, N. P.; Shi, L.; Yoon, H.; Smith, R. D.; Heffron, F.: Use of high-throughput mass spectrometry to elucidate host-pathogen interactions in Salmonella**. Future microbiology** 2008, 3, 625-34.

13. **Chowdhury, S. M.;** Munske, G. R.; Ronald, R. C.; Bruce, J. E.: Evaluation of low energy CID and ECD fragmentation behavior of mono-oxidized thio-ether bonds in peptides. **Journal of the American Society for Mass Spectrometry** 2007, 18, 493-501.

14. **Chowdhury, S. M**.; Munske, G. R.; Tang, X.; Bruce, J. E.: Collisionally activated dissociation and electron capture dissociation of several mass spectrometry-identifiable chemical cross-linkers. **Analytical chemistry** 2006, 78, 8183-93.

15. **Chowdhury, SM,:** Chemical strategies for profiling protein-protein interactions and protein posttranslational modifications (Ph. D. thesis, Washington State University, USA) - 2006 http://gradworks.umi.com/32/48/3248121.html

16. **Chowdhury, S. M**.; Munske, G. R.; Siems, W. F.; Bruce, J. E.: A new maleimide-bound acid-cleavable solid-support reagent for profiling phosphorylation. **Rapid Commun Mass Spectrom** 2005, 19, 899-909.

17. Wnuk, S. F.; **Chowdhury, S. M**.; Garcia, P. I., Jr.; Robins, M. J.: Stereodefined synthesis of O3'-labeled uracil nucleosides. 3'-[(17)O]-2'-Azido-2'-deoxyuridine 5'-diphosphate as a probe for the mechanism of inactivation of ribonucleotide reductases. **The Journal of organic chemistry** 2002, 67, 1816-9.

18. Hossain, M. A.; Mustafa, A. I.; Amin, M. N.; **Chowdhury, S. M**.- Studies on the quality of three selected varieties of rapeseed and mustard oils and oil cakes, **Dhaka University Journal of Science** (1997), 45(1), 23-29. Publisher: Dhaka University, CODEN: DJOSEM ISSN: 1022-2502.

Conference Papers:

From UTA:

1. Ricci, Contessa, Ledbetter, Bren E, Nguyen, Tam Phung, **Chowdhury, Saiful M**; Mydlarz, Laura D- Extracellular proteomic response of thermally stressed symbiodinium: implications for symbiosis breakdown during bleaching - poster abstracts, ASMS, San Antonio, June 5-9th, TX, 2016.

2. Shahinuzzaman, A.D.A; Bhawal, P Ruchika, **Chowdhury, Saiful M** - Identification of prenylome by chemical oxidation and CID and ETD tandem mass spectrometry- poster abstracts, ASMS, San Antonio, June 5-9th, TX, 2016.

3. Chakrabarty, Jayanta Kishor, Bhat, Apeksha; **Chowdhury, Saiful M** Mass spectrometry cleavable cross-linking approach for large-scale identification of protein-protein interactions- poster abstracts, ASMS, San Antonio, June 5-9th, TX, 2016.

4. Kamal, Abu Hena Mostafa, Chakrabarty Jayanta K, **Chowdhury, Saiful M**- Protein-protein interaction network of toll-like receptor 4 in macrophages with exposure to their agonists and external factors- poster abstracts, ASMS, San Antonio, June 5-9th, TX, 2016.

5. Ruchika Bhawal; Shahinuzzaman A.d.a; **Saiful Chowdhury** - A mass spectrometry cleavable approach for the identification and differentiation of farnesylated/geranylgeranylated peptides. American Society for Mass Spectrometry, May 31- June 4th, 2015, St. Lois, MO, conference proceeding, poster, published (**Graduate student**).

6. Maheshika Wanigasekara; Ruchika Bhawal; **Saiful Chowdhury** - Mass spectrometric fragmentation studies on peptides containing chemically modified arginine residues- American Society for Mass Spectrometry, May 31- June 4th, 2015, St. Lois, MO, conference proceeding, poster, published (**Graduate student**).

7. Tam P. Nguyen and **Saiful M. Chowdhury*** -Mass Spectrometric Studies on Modified Cysteinyl Peptides - Chemistry and Biochemistry Society at UTA-3rd Prize (**Undergraduate student**).

8. **Maheshika Wanigasekara**- Profiling reactive arginine residues of proteins by amino acid specific chemical labeling and mass spectrometry. ACES- March 25th 2015, poster **(Graduate Student).**

9. **Maheshika Wanigasekara**- Profiling reactive arginine residues by amino acid specific chemical labeling and mass spectrometry**- DFW ACS MIM April 25th 2015-oral presentation (Graduate Student).**

10. **Ruchika Bhawal:** Mass spectrometry cleavable strategy for identification of prenylated proteins- a potential target for several diseases. **DFW ACS MIM April 25th 2015-oral presentation (2nd prize) (Graduate Student).**

11. **Jayanta K Chakrabarty**, Saiful M. Chowdhury- Mass spectrometry cleavable cross-linking approaches for large-scale identification of Protein-Protein Interactions- poster presentation at 50th anniversary of UTA College of Science **(Graduate Student).**

12. Ruchika Bhawal and **Saiful M. Chowdhury*** - Novel method for identification of post-translational lipid modified proteins by tandem mass spectrometry, **American Chemical Society poster**, March, 18th, **2014,** Dallas, TX. Conference proceeding, Published. (**Graduate Student**).

13. Maheshika Wanigasekara; Ruchika Bhawal; **Saiful M Chowdhury***- Identification of functional arginine residues of proteins by selective chemical labeling and mass spectrometry. **American Society for Mass Spectrometry,** June 15-19, **2014**, Baltimore, Maryland, conference proceeding, published (**Graduate Student**).

14. Ruchika Bhawal; **Saiful M Chowdhury*** - A novel method for large-scale profiling of prenylated peptides by tandem mass spectrometry, **American**

Society for Mass Spectrometry, June 15-19, **2014**, Baltimore, Maryland, conference Proceeding, published (**Graduate Student**).

15. Jonathan Yang; Gerhard Munske; Daria Zhukova; James Bruce; Saiful Chowdhury* - Enrichment and identification of N-terminal peptides by a solid-phase acid-cleavable reagent and mass spectrometry, **American Society for Mass Spectrometry,** June 15-19, **2014**, Baltimore, Maryland, conference proceeding, published (**Undergraduate Student**).

16. Maheshika Wanigasekara; **Saiful M Chowdhury***- Profiling functional arginine residues of proteins by selective chemical labeling and mass spectrometry.- ACES poster, University of Texas at Arlington, March 26, **2014** (**Graduate Student**).

17. Ruchika Bhawal and **Saiful M. Chowdhury***- Large-scale profiling of post-translational lipid modified proteins by tandem mass spectrometry. **ACES oral presentation**, University of Texas at Arlington, March, 26th, 2014 (**Graduate Student**).

18. Jonathan Yang, **Saiful Chowdhury*** - A mass spectrometric study for enrichment of protein N-Terminal."- Poster presentation, **American Chemical Society**, March 18th, **2014**, Dallas, TX. **(Undergraduate student).**

19. Jonathan Yang; Hamilton Nguyen, **Saiful Chowdhury*** - A mass spectrometric study for enrichment of protein N-Terminal."- Poster presentation, Chemistry and Biochemistry Society, UTA, **2013**. (**First prize winner) (Undergraduate student).**

Past Presentations:

1. ATP Binding Cassette Transporter A1 Regulates The Lipid Raft Proteome Of The Macrophage - **Saiful M. Chowdhury**, Xuewei Zhu, Jason G. Williams, Kathleen M. Azzam, B. A. Merrick, Kenneth B. Tomer, John S. Parks, Michael B. Fessler. http://www.atsjournals.org/doi/abs/10.1164/ajrccmconference.2012.185.1_MeetingAbstracts.A1970

2. Proteomics Analysis of Abca1-/- macrophage reveals novel signaling in lipid rafts- **Saiful M. Chowdhury,** Zhu, X, Williams, JW., Deterding, LJ., Merrick, BA, Parks, JS, Tomer, KB, Fessler, MB-poster presented at 59th ASMS Conference on Mass Spectrometry & Allied Topics**,** June 05 – June 10th, 2011, Denver, CO.

3. ATP Binding Cassette transporter A1 Regulates the Lipid Raft Proteome of the Resting and Lipopolysaccharide-stimulated Macrophage –**Saiful M. Chowdhury,** Zhu, X, Williams, JW., Deterding, LJ., Merrick, BA, Parks, JS, Tomer, KB, Fessler, MB- poster presented at 58th ASMS Conference on Mass Spectrometry & Allied Topics**,** May 23 – May, 27, 2010, Salt lake city, UT.

4. CLIP: A cross-linker for enrichment and confident identification of protein cross- linking sites by mass spectrometry - **Saiful M. Chowdhury**; Xiuxia Du; Nikola Tolic; Ashoka D. Polpitiya; Ronald J. Moore; John R. Cort; Uljana M. Mayer; Richard D. Smith; Joshua

N. Adkins – poster presented at 57th ASMS Conference on Mass Spectrometry & Allied Topics**,** May 31 – June 4, 2009, Philadelphia, PA.

5. Du X, Rorie J, **Saiful Chowdhury,** Adkins J, Anderson G, Smith R. Identification of Protein-Protein Interactions Using Chemical Cross-linking and CID and ETD Tandem Mass Spectrometry" - Source: MOLECULAR & CELLULAR PROTEOMICS Pages: S33-S33Supplement: Suppl. S Published: AUG 2009 (Abstract).

6. Xlink-Identifier: An automated data analysis platform for confident identification of chemically cross-linked peptides using tandem mass spectrometry- Xiuxia Du, **Saiful M. Chowdhury**, James F. Rorie, Nathan P Manes, Kyle Suttlemyre, Si Wu, Uljana Mayer, Joshua N. Adkins, Gordon A. Anderson, Richard D. Smith – poste presentation at Ninth International Symposium on Mass Spectrometry in the Health and Life Sciences: Molecular and Cellular Proteomics: August 23-27, 2009, San Francisco, CA.

7. Profiling protein-protein interactions *in vivo* by cross-linking and mass spectrometry - **Saiful M. Chowdhury**; Liang Shi; Xiuxia Du; Uljana M. Mayer-Cumblidge; Nikola Tolic; Yoon Hyunjin; Ronald J. Moore; Norbeck D. Angela; Fred Heffron; Joshua N. Adkins; Richard D. Smith- Oral presentation at 56th ASMS Conference on Mass Spectrometry & Allied Topics**,** June 1 - 5, 2008, Denver, Colorado.

8. New protein interaction reporters for studying protein-protein interactions - **Saiful M. Chowdhury.** Gerhard R. Munske, Xiaoting Tang, James E. Bruce - poster presented at 53rd conference of American Society for Mass Spectrometry, San Antonio, TX, June 5-9, 2005.

9. A protein interaction reporter strategy for systems-level protein interaction networks of Shewanella oneidensis MR-1 - James E. Bruce, Xiaoting Tang, Harry Zhu, **Saiful Chowdhury**, Devi Adhikari, Gerhard Munske, Gordon A. Anderson and Nikola Tolic - Genomes to Life Contractor-Grantee Workshop III**,** February 6-9, 2005, Washington, DC.

10. Accurate Mass and PIRs: A new strategy for protein interactions-James E. Bruce, Gordon A. Anderson, Nikola Tolic, Xiaoting Tang, Devi Adhikari, Gerhard Munske, **Saiful Chowdhury** - poster presented at 53rd conference of American Society for Mass Spectrometry, San Antonio, TX, June 5-9, 2005.

11. A novel chemical method for selective isolation of N-terminal peptides - **Saiful M. Chowdhury.** Gerhard R. Munske, James E. Bruce - poster presented at Proteome Society conference at Pacific North West National Laboratory (PNNL), Richland, WA, March 31, 2005.

12. Chemical strategies for posttranslational modification profiling - **Saiful M. Chowdhury.** Gerhard R. Munske, William F. Siems, James E. Bruce - poster presented at 52nd conference of American Society for Mass Spectrometry, Nashville, TN, May 23-27, 2004.

13. Approach for clarification of the mechanism of inactivation of ribonucleotide reductases with 3'[17O]-labeled 2'-azido-2'-deoxynucleotides - **Saiful M Chowdhury.,**; Garcia, Pedro I., Jr.; Wnuk, Stanislaw F.- Department of Chemistry, Florida International

University, Miami, FL, USA. Abstracts of Papers, 221st ACS National Meeting, San Diego, CA, United States, April 1-5, 2001.

Invited Seminars:

1. Webinar: UT systems proteomics groups: Mass spectrometry cleavable strategies for identifying large-scale protein interactions and protein modifications, Nov, 17th, 2016.

2. Southern Methodist University chemistry dept.- Mass spectrometry cleavable strategies for identifying large-scale protein interactions and protein modifications, Oct 21st-2016

3. University of California Riverside chemistry dept- Mass spectrometry cleavable strategies for identifying large-scale protein interactions and protein modifications, Oct 6th -2016

4. UT Dallas- chemistry dept. seminar- Mass spectrometry based strategies for large-scale identification of protein interactions and PTMs, March, 2015.

5. Southwest regional Meeting (SWRM), ACS, Fort Worth, Texas, -"Mass spectrometry cleavable strategy for identification and differentiation of prenylated peptides"- Nov, **2014**.

6. UNT chemistry dept. seminar- Mass spectrometry based strategies for large-scale identification of protein interactions and PTMs, September, **2014.**

7. Graduate recruiting and research seminar, Council of Scientific and Industrial Research (BCSIR), Government of Bangladesh, Dhaka, Bangladesh, January, **2014**.

8. Graduate recruiting and research seminar: Dept. of Applied Chemistry and Chemical Engineering, University of Dhaka, Bangladesh, December, **2013.**

9. Southwest regional Meeting (SWRM, ACS, Waco, Texas,-Method for selective enrichment of N-terminal peptides by a solid-phase capture strategy and mass spectrometry, Nov, **2013**.

10. Laboratory of Respiratory Biology, National Institute of Environmental Health Sciences (NIEHS), NIH, Research Triangle Park, NC, August, 2009.

11. Cole Eye Institute, Cleveland Clinic, Cleveland, OH, August, 2009.

12. Hubbard Center for Genome Studies and Dept. of Molecular, Cellular and Biomedical Sciences – University of New Hampshire, Durham, NH, April, 2008.

13. Proteome Exploration Laboratory – California Institute of Technology, Pasadena, CA, April, 2008.

14. Invited talk at biological application of cross-linking session at 56th ASMS Conference on Mass Spectrometry & Allied Topics**,** June 1 - 5, 2008, Denver, Colorado.

15. Invited talk at carbohydrate section at 221st ACS National Meeting, San Diego, CA, United States, April 1-5, 2001.

Teaching:

- (FA12)-CHEM-2335-001-QUANTITATIVE_CHEMISTRY (30 students)
  - Supervised the associated laboratory sections of Chem. 2285 (two sections).
- (FA12)-CHEM-6100-001-TOPICS_IN_GRADUATE_RESEARCH (19 students)
- (SP13)-CHEM-2335-001-QUANTITATIVE_CHEMISTRY (53 students)
  - Supervised the associated laboratory sections of Chem. 2285 (three sections).
- (FA13)-CHEM-5304-001-MASS_SPEC_&_SPECTROSCOPY (32 students)
- (FA13)-CHEM-6100-001-TOPICS_IN_GRADUATE_RESEARCH (32 students)
- (SP14)-CHEM-2335-001-QUANTITATIVE_CHEMISTRY (38 students)
  - Supervised the associated laboratory sections of Chem. 2285 (three sections).
- (FA14)-CHEM-2335-001-QUANTITATIVE_CHEMISTRY (34 students)
  - Supervised the associated laboratory sections of Chem. 2285 (three sections).
- (FA14)-CHEM-6100-001-TOPICS_IN_GRADUATE_RESEARCH (19 students)
- (SP15)-CHEM-5304-001-MASS_SPEC_&_SPECTROSCOPY (23 students)
- (SP16)-CHEM-5304-001-MASS_SPEC_&_SPECTROSCOPY (13 students)
- (FA16)-CHEM-2335-001-QUANTITATIVE_CHEMISTRY (45 students)
  Supervised the associated laboratory sections of Chem. 2285 (three section