

Sireesha Mamillapalli

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Professional Summary

Dedicated Assistant Professor with experience in teaching and research in the areas of Chemistry & Biochemistry. Extensive knowledge in various biochemical techniques and protein chemistry focused on protein-ligand interactions with over six years of expertise in undergraduate teaching and mentoring. Believe in students' abilities to learn and inherent the thirst for knowledge with a right environment. Actively work to connect students to their material to transform lives.

Skills

- Students mentoring and advising
- Interpersonal communication skills
- Conference participation
- Curriculum development
- Undergraduate research
- Scientific teaching and Grant writing
- Academic Committees

Work experience

Assistant Professor- Biochemistry, Marywood University Scranton, PA

Fall 2018

Membership

Editorial board member: Veterinary Open Access Open Journal (VOAOJ)

Education

Wichita State University, Wichita, KS

Doctor of Philosophy *Ph.D.*, Chemistry

Spring 2018

“Structural and Stability studies on Domain 4 of anthrax toxin protective antigen (PA); its role in anthrax pathogenesis”

Master of Science *MS.*, Chemistry

Wichita State University, Wichita KS

Fall 2016

Master of Science *M.Sc. (May 2010)*
Organic Chemistry
Andhra University, India

Bachelor of Science *B.Sc. (May 2008)*
Chemistry Biochemistry & Microbiology
Andhra University, India

Publications

- ‘Stability of domain 4 of the anthrax toxin protective antigen and the effect of the VWA domain of CMG2 on stability’ **Mamillapalli S, Miyagi M, Bann JG. *Protein science* 2016.**
- ‘Long-Range Stabilization of Anthrax Protective Antigen upon Binding to CMG2’ **Mullangi V, Mamillapalli S, Anderson DJ, Bann JG, Miyagi M. *Biochemistry* 2014.**
- ‘Thermodynamic stabilization of anthrax PA by the soluble VWA domain of CMG2 and effects on anti-PA IgG titer production kinetics in mice’ **Mamillapalli S, Bann JG. (Manuscript under preparation)**
- ‘Identification of a stalled intermediate of anthrax protective antigen that precedes formation of a pore’ **Mamillapalli S, Bann JG. (Manuscript under preparation)**

Research Skills

- Expertise in protein expression and purification in bacterial systems, preparation of minimal media and selective labeling of amino acids with fluorine analogs (4-Fluoro and 5-Fluoro Tryptophan) and fluorescent probes (AF350, AF488, mBBr and mBCl) for spectroscopic studies.
- Proficient in protein purification using diverse chromatographic techniques (Affinity, Ion-exchange, Size exclusion).
- Worked on selective cleavage of proteins using different proteases like thrombin, trypsin and thermolysin for definite purposes.
- Extensive theoretical and practical knowledge on molecular biological techniques like cloning, primer design and spliced overlap extension PCR.
- Expertise in exploring protein-protein and ligand interactions using various biophysical techniques like EMSA, Pulse proteolysis, UV/visible, CD, Calorimetry (ITC), Fluorescence, ¹⁹FNMR spectroscopy and has sound knowledge on immunochemical assays like Western blotting and ELISA.
- Skilled in protein lyophilization techniques under various temperature conditions for immunization studies in mice.
- Experienced in conducting cell culture and imaging using confocal microscopy.
- Skillful in managing the chemical inventory, maintaining and operating laboratory equipment.
- Keen eye for detail, especially in monitoring the work of junior biochemists and undergraduates.
- Ability to furnish reports, papers and adept at presenting research results to colleagues and other professionals.
- Commendable problem solving skills, critical thinking abilities including great speaking and writing skills.

Graduate Research Assistant

Fall 2012 – Spring 2018

Wichita State University, Wichita, KS, USA

- Passionate and results oriented biomedical researcher with over 5 years of experience in protein structural and functional characterization, resulting in 2 peer-reviewed scientific publications.
- Explored interactions of anthrax toxin protective antigen (PA) and its host cellular receptor capillary morphogenesis protein II (CMG2) using various biophysical techniques and pulse proteolysis methods.
- Worked on preparing protein samples for studying the effect of protein stability on its immunogenicity. Obtained preliminary results for the studies on Balb/c mice by ELISA. Heading towards studies on individual peptides of PA to analyze antigen presentation.
- Expertise in analyzing stability of proteins both quantitatively and qualitatively and ability to learn new technologies in quick time and design, execute projects independently.
- Following structure-based vaccine design, worked on synthesizing a chimeric molecule between (Fip-Fve protein-Domain 1V of PA) retaining the immunogenicity, which serves to be a novel approach in enhancing the stability of a protein.
- Adept public speaker and writer; successfully delivered 5 poster and 2 oral presentations
- Expertise in multi-tasking and prioritization of work as evidenced by mentoring undergraduates,

- allowing them to successfully complete projects under tight deadlines.
- Efficiently coordinated independent research projects with students in an advanced biochemistry-teaching lab.

Graduate Teaching Assistant

Fall 2012- Spring 2018

Wichita State University, Wichita, KS, USA

Awarded '**Outstanding Teaching Assistant**' among a group of 20 others for introductory chemistry (Fall 2013) and general chemistry (Spring 2016).

Introductory chemistry lecture

Fall 2017

- Taught introductory chemistry lecture for a group of 100 students (nursing majors) as a substitute for an Associate professor during his/her sick leave.

Biochemistry

Spring 2017

- Assisted students of undergraduate biochemistry lab in carrying out various molecular biology techniques to obtain a mutant as a part of their course content.
- Provided them with required web information for virtual design of the mutants (Pymol) and using sources like Protein databanks to obtain essential information on variety of proteins.
- Supervised the group of students in handling growth and purification of proteins using affinity chromatography.
- Aided the lab exercise of studying proteins using UV/Visible and Fluorescence spectroscopy techniques and helped them analyze the results.
- Backed the group in developing independent projects and also mentored them in presenting their ideas.

General Chemistry

Fall 2014 - Fall 2016

- Taught general chemistry lab for a group of 50 students each semester form over 10-15 different majors.

Introductory Chemistry

Spring 2013 - Spring 2014

- Taught basic level chemistry for a group of 50 students (mostly nursing majors) each semester.
- Students barely know the chemistry lab practices and equipment used, assisted them in carrying out various experiments and introduced them to diverse concepts of chemistry.

Industrial Experience

SAI LIFE SCIENCES, Hyderabad, India

Research and Development R&D, Research Associate

Jan 2011- April 2012

- Worked on synthesizing various macromolecules involving multi-step reactions for clients.
- Hands on experience in handling reactions from milligrams to multi gram scale.
- Handled several dry reactions and has knowledge on column purifications for different chemical compounds.
- Conduct research, compile data, and prepare reports for consideration and presented to team leads and executives.
- Adept at interdepartmental coordination and communication.

Honors and Awards

- ‘Outstanding Teaching Assistant’ in chemistry *Fall 2013 & Spring 2016*
- B. Lloyd and Eleanor B. Parker Graduate fellowship *Fall 2012 & 2013*
- Jerry B. Cohlma chemistry fellowship *Fall 2014 & 2015*
- Dr. Erach R Talaty chemistry fellowship *Fall 2015*

Selected Presentations

- ‘Effects of the receptor CMG2 on stability changes in domain 4 of anthrax protective antigen in comparison to the full-length protein’ **Mamillapalli S, Bann JG**. Gordon Research conference (Proteins), June 2015.
- ‘Role of His616-Tyr642 hydrogen bond on the thermodynamic stability of domain 4 of the anthrax toxin protective antigen’ **Mamillapalli S, Bann JG**. American chemical society Midwest regional meeting, November 2013.
- ‘Effect of the receptor CMG2 on stability changes in domain IV of anthrax toxin protective antigen’ **Mamillapalli S, Bann JG**. GRASP, Wichita State University April 2016.

Activities

- Volunteer for the program ‘Expanding Your Horizon’ to motivate young women in pursuing Science careers held at Wichita state University.
- Actively involved in STEM outreach programs for performing basic chemistry experiments.
- Assistant lab coordinator for Science Olympiad program at Wichita state university.
- Judged a policy debate for a group of high school students held at Wichita East high school.