

# Jiefei Wang

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## EDUCATION

September 2013 – present      Ph.D candidate, Biochemistry, Indiana University Bloomington  
Advisor: David P. Giedroc

September 2009 – May 2013      B.S., Biosciences, University of Science and Technology of China

## RESEARCH EXPERIENCE

### Indiana University Bloomington

*Sep. 2013 – now*

Ph.D candidate, Biochemistry

Graduate Research Assistant

Advisor: Prof. David P. Giedroc

*Jan. 2014 – now*

Project: The response of *Acinetobacter baumannii* to human-mediated metal starvation

- Purified recombinant proteins utilizing FPLC (AKTA) systems (affinity chromatography, IEX, SEC) and characterized enzymatic activity, metal binding, ligand binding and DNA binding affinity using UV-visible spectroscopy, fluorometer, plate reader, HPLC and isothermal titration calorimetry (ITC).
- Acquired basic skills working under anaerobic conditions with anaerobic chamber.
- Conducted growth, prepared and analyzed samples of *Acinetobacter baumannii* ATCC 17978 (biosafety level II) with ICP-MS, UPLC-MS based peptidoglycan profiling and metabolites quantification, LC-MS based proteome and quantitative RT-PCR.
- Experienced user and maintenance of inductively coupled plasma mass spectrometry (ICP-MS) and atomic absorption spectroscopy (AAS).
- Experienced user of common mass spectrometry techniques and analysis (ESI-MS, MALDI-TOF MS, UPLC-MS).
- Gained experience with NMR (2D HSQC and backbone assignment)/X-ray crystallography/SAXS on protein samples.
- Gained experience with Python and R for data analysis and visualization.
- Gained experience with DNA oligomer (automated amidite synthesis) synthesis, peptide synthesis and purification.
- Collaborated closely with graduate students, postdoctoral associates and technicians.
- In charge of and trained graduate students on laboratory duties including laboratory safety, preparation of competent cells, ICP-MS and AA.

### University of Science and Technology of China

*Sep. 2009 – May. 2013*

Bachelor of Science in Biosciences

Research Assistant

Advisor: Prof. Changlin Tian

*July. 2012 – May. 2013*

Project: Site-specific incorporation of unnatural amino acid at two sites and distance measurement by  $^{19}\text{F}$  NMR

- Gained general molecular cloning techniques: site-directed mutagenesis and construct formation.
- Inspected protein-protein interaction by  $^{19}\text{F}$  NMR.
- Gained experience with Western blot, Sf9 insect cell expression system and mammalian cell culture.

Internship at Institute of Biophysics, Chinese Academy of Sciences

*Jun. 2010*

## **PUBLICATIONS**

1. **Wang, J.\***, Lonergan, Z. R.\*, Gonzalez-Guitierrez, G., Nairn, B. L., Maxwell, C. N., Zhang, Y., Andreini, C., Karty, J. A., Chazin, W. J., Trinidad, J. C., Skaar, E. P., and Giedroc, D. P. (2019) Multi-metal restriction by calprotectin impacts *de novo* flavin biosynthesis in *Acinetobacter baumannii*. Cell Chem Biol, in the press
2. Lonergan, Z. R., Nairn, B. L., **Wang, J.**, Hsu, Y. P., Hesse, L. E., Beavers, W. N., Chazin, W. J., Trinidad, J. C., VanNieuwenhze, M. S., Giedroc, D. P., and Skaar, E. P. (2019) An *Acinetobacter baumannii*, zinc-regulated peptidase maintains cell wall integrity during immune-mediated nutrient sequestration. Cell Rep 26, 2009-2018
3. Capdevila, D. A., **Wang, J.**, and Giedroc, D. P. (2016) Bacterial strategies to maintain zinc metallostasis at the host-pathogen interface. J Biol Chem 291, 20858-20868
4. Nairn, B. L., Lonergan, Z. R., **Wang, J.**, Braymer, J. J., Zhang, Y., Calcutt, M. W., Lisher, J. P., Gilston, B. A., Chazin, W. J., de Crecy-Lagard, V., Giedroc, D. P., and Skaar, E. P. (2016) The response of *Acinetobacter baumannii* to zinc starvation. Cell Host & Microbe 19, 826-836

## **MANUSCRIPT**

1. **Wang, J.\***, Capdevila, D. A.\*, and Giedroc, D. P. (2019) Metal ion homeostasis. Invited chapter for Comprehensive Coordination Chemistry III (Editors: Yi Lu & Lawrence Que Jr.), Elsevier

## **PROFESSIONAL ACTIVITIES**

### **Oral Presentations**

March 2019 BMB series seminar, Department of Molecular and Cellular Biochemistry, Indiana University  
July 2016 Gordon Research Seminar (GRS) - Cell Biology of Metals, West Dover, VT  
March 2016 BMB series seminar, Department of Molecular and Cellular Biochemistry, Indiana University

### **Poster Presentations**

June 2018 Summer Symposium in Molecular Biology, State College, PA  
July 2016 Gordon Research Conference (GRC) - Cell Biology of Metals, West Dover, VT

## **TEACHING EXPERIENCE**

### **Associate Instructor**

**Department of Chemistry, Indiana University, Bloomington, IN**

C127 Principles of Chemistry and Biochemistry I (undergraduate course)

Laboratory instructor

*2014 Spring, Summer & Fall*

- Lectured, instructed and trained students on scientific principles common to all science disciplines and to teach specific laboratory skills and software important in the study of chemistry and biochemistry.
- Graded assignments and exams.

C487 Biochemistry (upper level undergraduate course)

Laboratory instructor

*2015 Spring*

- Lectured, instructed and trained students on fundamental laboratory approaches for biochemistry and biotechnology.
- Graded assignments and exams.

## **REFERENCES**

### **David P. Giedroc**

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Department of Chemistry  
Indiana University,  
Bloomington, IN, USA

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Bloomington, IN, USA

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### **Eric P. Skaar**

Ernest W. Goodpasture Professor  
Department of Pathology,  
Microbiology, and Immunology  
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