

Hardworking Q. Student

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EDUCATION

Georgia State University, Atlanta, GA 30303

2010 - present

Master of Science in Chemistry

Thesis title: Proteins Rock

Graduation date: August 2011

GPA: 3.9, Graduation with Distinction

Georgia State University, Atlanta, GA 30303

2006 - 2010

Bachelor of Science in Chemistry, Minor in Biology

Graduation date: August 2010

GPA: 4.0, Graduation with Distinction

RESEARCH EXPERIENCE

Georgia State University Department of Chemistry, Atlanta, GA

2007 - present

Key Results:

- Maximized the expression of proteins by varying conditions such as temperature, bacterial hosts, and vectors.
- Improved purification of proteins using Fast Performance Liquid Chromatography, affinity tags, and buffer systems.
- Performed conformational analysis of proteins, using techniques such as circular dichroism, fluorescence, relaxivity measurements, and metal titrations to further testing as contrast agents.

Techniques:

- Used Fast Performance Liquid Chromatography (ÄKTA Purifier systems): anion exchange, cation exchange, nickel column, size exclusion chromatography
- Purified proteins using affinity chromatography (glutathione-S-transferase, histidine tag)
- Used circular dichroism (JASCO J-810 spectropolarimeter)
- Used minispec relaxometer (Bruker Instruments)
- Used spectrofluorimeter (SC-500 PTI)
- Determined K_d of proteins to metals using Fluorescence Resonance Energy Transfer (FRET) method and fluorescence competition with dyes
- Designed and cloned plasmids
- Used gel extraction kit to extract plasmids from PCR
- Purified the engineered DNA using a DNA miniprep kit
- Performed DNA phosphorylation and ligation
- Optimized large scale expression of proteins
- Applied ImageJ software to calculate band intensities in SDS PAGE gels
- Used sonicator, French press, and cell disrupter (Microfluidics M110P)
- Developed purification protocol using denaturing buffers (protein refolding)
- Performed Bradford protein assay
- Performed glutathione-S-transferase detection module (GE Healthcare)
- Calculated activity of GST tag in fusion protein
- Incorporated PEG-chain onto proteins
- Fitted data using Kaleidagraph
- Used PCR (Techne TC3000)

TEACHING ASSISTANT EXPERIENCE

Georgia State University Department of Chemistry, Atlanta, GA

2006 - present

- Directed students in laboratory experiments and problem solving
- Assisted with proton nuclear magnetic resonance operation and student sample analysis
- Prepared solutions necessary for experiments
- Graded papers and occasionally lectured

PUBLICATIONS

- Li, S.; Jiang, J.; Zou, J.; Qiao, J.; Xue, S.; Wei, L.; Long, R.; Wang, L.; Castiblanco, A.; White, N.; Ngo, J.; Mao, H.; Liu, Z. R.; Yang, J. J., PEGylation of protein-based MRI contrast agents improves relaxivities and biocompatibilities. *J Inorg Biochem* 107, (1), 111-118.
- Xue, S.; Qiao, J.; Jiang, J.; Hubbard, K.; White, N.; Wei, L.; Li, S.; Liu, Z.; Yang, J. J., Design of ProCAs (Protein-based Gd³⁺ MRI Contrast Agents) with High Dose Efficiency and Capability for Molecular Imaging of Cancer Biomarkers. *Med Res Revs*, Under Review.
- Wei, L.; Li, S.; Yang, J.; Ye, Y.; Zou, J.; Wang, L.; Long, R.; Zurkiya, O.; Zhao, T.; Johnson, J.; Qiao, J.; Zhou, W.; Castiblanco, A.; Maor, N.; Chen, Y.; Mao, H.; Hu, X.; Yang, J. J.; Liu, Z. R., Protein-based MRI Contrast Agents for Molecular Imaging of Prostate Cancer. *Mol Imaging Biol* 13, (3), 416-23.

PROFESSIONAL PRESENTATIONS

- "Analysis of CD2 Variants as Magnetic Resonance Imaging Contrast Agents," **Wei, L.**; Li, S.; Yang, J.; Hubbard, Y.; Zurkiya, J., *Biotechnology Symposium*, Georgia State University, December 2010.
- "Protein-Based MRI Contrast Agents: Expression, Purification, and Structural Analysis of CD2 Variants," **Wei, L.**; Li, S.; Yang, J.; Hubbard, Y.; Zurkiya, J., *LSAMP Scholar Symposium*, Clark Atlanta University, GA 30303, April 2010.
- "Protein-Based MRI Contrast Agents: Expression, Purification, and Structural Analysis of CD2 Variants," **Wei, L.**; Li, S.; Yang, J.; Hubbard, Y.; Zurkiya, J., *Georgia State University Undergraduate Research Conference*, Georgia State University, Atlanta, GA 30303, March 2010.
- "Protein-Based MRI Contrast Agents: Expression, Purification, and Structural Analysis of CD2 Variants," **Wei, L.**; Li, S.; Yang, J.; Hubbard, Y.; Zurkiya, J., *Department of Chemistry's Second Annual Poster Day*, February 2010.

ACADEMIC AWARDS

- Biotechnology Scholarship, 2008 – present
- President's List, 2008 - present
- GlaxoSmithKline Fellowship, 2008
- Best Overall Chemistry Undergraduate Student, 2008
- Best Overall University Scholar, 2008
- Atlanta Minority Fellowship, 2008 - present
- Dean's Scholarship Key, 2008
- Faculty Scholarship Award, 2007 -2008
- Faculty Scholar, 2007 -2008
- Molecular Basis of Disease Fellowship, 2007 - present
- Dean's List, 2006 -2007

EXTRACURRICULAR (Medical)

Grady Memorial Hospital, volunteer; Emory Midtown Hospital, shadowing OB/GYN; Children's Health Care of Atlanta, volunteer; Nurse's Aide, Genesee Hospital Emergency Room; Piedmont Hospital, shadowing anesthesiologist; shadowing pediatrician.