GEOFFREY WEN-REI LANG

POSITIONS AND EMPLOYMENT

Pratt Lab Group (USC), Los Angeles, CA **August 2021–present**
Graduate Research Assistant

- Completed coursework in x-ray crystallography, chemical biology, molecular imaging, advanced nuclear magnetic resonance techniques, and medicinal chemistry
- Investigating how the O-GlcNAc modification of proteins affect the disease progression and chemoresistance in cancer

Centrillion Technologies, Palo Alto, CA **August 2020–August 2021**
Research Associate

- Developed and validated analytical HPLC protocols to evaluate and validate efficiency and yield of solid-state oligonucleotide synthesis
- Developed synthetic methods for coating silicon substrates with organic polymers
- Synthesized organic silanes for use in oligonucleotide synthesis
- Performed synthesis of oligonucleotides to evaluate efficiency and performance of aforementioned materials

England Lab Group (UCSF), San Francisco, CA **July 2018–April 2020**
Junior Specialist

- Developed and tested pharmaceutical drug candidates for the treatment of Parkinson's Disease
- Developed and validated high throughput screening protocols for measuring binding between proteins and ligands (microscale thermophoresis & surface plasmon resonance)
- Expressed and purified recombinant protein using ion-exchange and affinity chromatography
- Synthesized and purified a library of compounds as potential pharmaceutical drug candidates
- Performed characterization by NMR and mass spec analysis of compounds
- Presented my results during biweekly lab meetings

Pratt Lab Group (USC), Los Angeles, California **October 2015–May 2018**
Undergraduate Research Assistant

- Studied the role of post-translation glycosylation in Parkinson's Disease and Alzheimer's Disease
- Designed and validated syntheses for glycosylated amino acids and proteins
- Used native chemical ligation to synthesize proteins with site-specific glycosylation
- Performed western blot assays to measure presence of glycosylated protein levels in cells
- Developed tissue culture protocol for studying glycosylation under hypoxic conditions

Piro Lab Group (Franklin and Marshall College), Lancaster, PA **May–July 2015**
Undergraduate Research Assistant

- Performed DNA/RNA extraction for sequencing
- Used Nanodrop to quantify nucleic acid and protein concentration
- Performed recombinant protein expression and purification

EDUCA TION

University of Southern California, Los Angeles, CA **August 2015–May 2018**
Bachelor of Science in Chemistry and a minor in Spanish Language and Culture Graduated Cum Laude with Departmental Honors
Research Advisor: Dr. Matthew R. Pratt

University of Deusto, Bilbao, Spain **January 2017–May 2017**
Spanish Language & Culture Program

Franklin and Marshall College, Lancaster, PA **August 2014–June 2015**
Research Advisor: Dr. Christine P. Piro

AWARDS AND HONORS

USC Renaissance Scholar Graduation Honor **May 2018**
USC Discovery Scholar Graduation Honor **May 2018**
Provost Fellowship Award **Summer 2016, Fall 2017, Spring 2018**
Reba L., Harry W., and George H. Stahl Memorial Scholarship **2017**
Barry Goldwater Scholarship Foundation Nominee from USC **2017**
Del Amo Fellowship **2017**
Most Outstanding Undergraduate in Organic Chemistry Award **2016**
University of Southern California Dean's List **January 2016–May 2018**
Franklin and Marshall College Dean's List **August 2014–May 2015**

PUBLICATIONS (PEER-REVIEWED)

De Leon, C. A.; **Lang, G.**; Saavedra, M.; Pratt, M. R.; Simple and Efficient Preparation of O- and S-GlcNAcylated Amino Acids through InBr3-Catalyzed Synthesis of ß-N-Acetylglycosides from Commercially Available Reagents. *Org. Lett.* **2018**. 10, 1021. (PMID: 30088936; doi: 10.1021/acs.orglett.8b02182)

Kholodar, S. A., **Lang, G**., Cortopassi, W. A., Yoshie Iizuka, Y., Harman S. Brah, H. S., Jacobson, M. P., England, P. M.; Analogs of the Dopamine Metabolite 5,6-Dihydroxyindole Bind Directly to and Activate the Nuclear Receptor Nurr1 (NR4A2). *ACS Chem. Biol.* **2021**. 16, 7, 1159–1163. (PMID: 34165961; doi: 10.1021/acschembio.1c00326)

PRESENT A TIONS

American Chemical Society National Meeting, New Orleans, LA; (2018), poster presentation
46th John Stauffer Distinguished Lecture Student Research Poster Extravaganza, Los Angeles, CA; May 2018, poster presentation
USC Undergraduate Symposium, Los Angeles, CA; May 2018, poster presentation

TEACHING

Graduate Teaching Assistant in Organic Chemistry, University of Southern California, Los Angeles, CA **August 2021–May 2022**
Organic Chemistry Supplemental Instructor, University of Southern California, Los Angeles, CA **August 2017–May 2018**
English & Spanish Tutor, Capital Languages, Bilbao, Spain **January 2017–May 2017**

COMMUNITY SERVICE

EMT-B, Emergency Medical Services of Southern of California University of Southern California, Los Angeles, CA **August 2016–March 2018**
Tutor, Teach for Los Angeles, University of Southern California, Los Angeles, CA **August 2016–April 2018**
Translator, Joint Educational Project, University of of Southern California, Los Angeles, CA **October–December 2015, June–August 2016**
Head Coach, Trojan Youth Soccer League, University of Southern California, Los Angeles, CA **October 2015–April 2016**

EXTRA-CURRICULAR ACTIVITIES

Vice President/Founder, Trojan Chemistry Club, University of Southern California **September 2017–May 2018**
Men's Varsity Rowing Team, University of Southern California, (US Rowing, Division I) **August 2015–March 2016**
Men's Varsity Rowing Team, Franklin and Marshall College, (US Rowing, Division III) **August 2014–June 2015**

- Silver Medal in the 2000 meter sprint at the Mid-Atlantic Rowing Conference Championship
- Silver Medal in the 2000 meter erg sprint at the 2015 Pittsburgh Indoor Sprints

USC Men's Ultimate Frisbee Team, University of Southern California **August 2015–October 2017**

FUNDING (COMPLETED)

Provost Fellowship Award **Spring 2018**
University of Southern California $1,000
"Synthesis of Glycosylated Serine and Threonine using an Indium Bromide Catalyst"
The major goal of this project is to develop a new synthetic approach with mild conditions and minimal number of steps to afford O-GlcNAc serine and threonine using an Indium Bromide catalyst.

Provost Fellowship Award **Fall 2017**
University of Southern California $1,000
"Development of Threonine Analogs for the Study of α-Synuclein in Neurodegenerative Diseases"
The major goal of this project was to develop a new synthetic approach with mild conditions and minimizes the number of steps to afford S-GlcNAc threonine.

Del Amo Fund **2017**
University of Southern California $1,000

Provost Fellowship Award **Summer 2016**
University of Southern California $3,000
"Probing PKM2 Activity using DASA-58"
The major goal of this project was to test if the inhibitor, DASA-58, induces PKM2 in several cancer types as well as determine if PKM2 activity is important for elevated O-GlcNAc levels.