L. Andrea Acevedo, Ph.D.

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Highly motivated physicist with a PhD in Biophysics. Trained and interested in protein structure and dynamics with 7 plus years of experience in molecular biology, protein expression and purification, biochemical characterization, while using a variety of biophysical techniques to elucidate protein-protein and protein-compound interactions in different biological relevant systems. Fast learner with outstanding interpersonal skills to work on team as well as strong experience on leadership positions and communicating science to diverse group of people.

Education

Cornell University, Doctor of Philosophy in Biophysics, minor in Biochemistry, Ithaca, NY. August 2018
Dean's Excellence Fellowship, NIH Molecular Biophysics fellowship.
Tompkins Cortland Community College Associate of Science, Biotechnology, Dryden, NY. May 2014
Graduate of Note.
National University of Colombia, Bachelor of Science, Physics, Bogota, Colombia October 2011
Best graduating GPA.

Skills

- Cloning and overexpression of recombinant proteins in *E.coli*. including the use of minimal media for isotopically labeled proteins. Constructed over 50 plasmids.
- Protein purification: metal-resin affinity, size exclusion and ion-exchange chromatography. (including experience with an ÄKTA FPLC system and a Bio-Rad FPLC system).
- Protein characterization: SDS-PAGE, western blotting, and thermal shift assay.
- Design experiments, data acquisition, processing and analysis of biophysical techniques such as:
    - Protein Nuclear Magnetic Resonance (NMR) 1D, 2D, and 3D experiments to determine kinetics and affinity determination in complex biological system.
    - X-ray crystallography for structural biology to determine inhibitor bound to protein.
    - ELISA kinase activity assay for determination of IC_{50} values for inhibitors.
    - Analytical Ultra Centrifugation (AUC) to determine stoichiometry of complexes.
    - Isothermal Titration Calorimetry (ITC) for protein inhibitor interaction.
    - Fluorescence Polarization for use of small molecule inhibitor screen.

- **Computer:** Experience with Matlab, C++ scripts, UNIX. NMR spectroscopy Software: VARIAN, NMRpipe, NMRDraw, Sparky, TITAN (TITration ANalysis Software). X-ray crystallography software: CCP4, COOT, PHENIX. Molecular visualization software: PyMol, Swiss Pdb-viewer, VMD. Simulation software: CP2K, NAMD, VCell. Proficiency in Microsoft Office, Adobe Illustrator, Adobe InDesign, EndNote, GraphPad.
- **Communication:** Fluency in writing, reading, listening and speaking Spanish (Native level). Public Speaking.

Research Experience

Glaxo Smith Kline, R&D Protein Cellular and Structure Sciences, *Protein Biochemist Investigator*, Collegeville, PA
Aug 2020-Present

- Develop and optimize expression and purification of proteins from various sources including recombinant expression in E coli, Baculovirus and mammalian expression systems.
- Characterization of proteins and biological systems using biochemical, biophysical and structural techniques.

University of Pennsylvania, Marmorstein Lab, *Postdoctoral Research Fellow*, Philadelphia, PA
Aug 2018-Aug 2020

- Investigated in parallel multiple synergistic alternative to inhibit Mitogen-activated protein kinases pathway in

the case of drug resistance in cancer skin, melanoma.
- Lead interdisciplinary collaboration between chemists, cell biologist and structural biologist.
- Employed various protein constructs to obtained high yield of recombinant protein including crystallography grade pure protein.
- Acquired and analyzed data from biophysical techniques such as X-Ray crystallography, AUC, Differential Scattering Calorimetry (DSC), ELISA kinase activity assay resulting on pre-selection of inhibitors for cell base studies.
- Mentor post-bachelor researcher, graduate, undergraduate and high school students.

Cornell University, Nicholson Lab, *Graduate Research Assistant*, Ithaca, NY
June 2014-July 2018
- Expressed and purified various protein constructs in *E.Coli* to obtained high yield of recombinant isotopically labeled and unlabeled protein for used in NMR experiments.
- Acquired and analyzed NMR data for study of molecular switches in proteins that control biological processes.
- Investigated the role of peptidyl-prolyl bond as a timing device in lateral root development in rice, resulting on a founded NSF grant and three first author publications.
- Elucidated the molecular mechanism of interaction between VASP and Zyxin, two proteins related to cell adhesion and migration resulting in a first author publication.
- Trained three undergraduate, three rotation students, and two graduate students.

Cornell University, Oswald Lab *Volunteer technician*, Ithaca, NY
February 2013-May 2014
- Expressed, purified and prepared soluble proteins for biophysical studies.
- Optimized protocol for expression of binding domains from ionotropic glutamate receptors.
- Applied Isothermal ITC to study the binding of inhibitors in glutamate receptors.

Selected Publications

Acevedo LA, Korson NE, Williams JM, Nicholson LK. (2019) Tuning a timing device that regulates lateral root development in rice. Journal of Biomedical NMR. PMID 31407206 DOI: 10.1007/s10858-019-00258-0.

Acevedo, L.A., Kwon J., & Nicholson, L. K. (2019). Quantification of reaction cycle parameters for an essential molecular switch in an auxin-responsive transcription circuit in rice. Proceedings of the National Academy of Sciences of the United States of America. PMID 30696765 DOI: 10.1073/pnas.1817038116.

Acevedo, L.A., & Nicholson, L. K. (2018). NMR assignments of Cyclophilin LRT2 (OsCYP2) from rice. Biomol. NMR Assignments. Jan 20, 2018. doi: 10.1007/s12104-018-9803-x.

Acevedo, L. A., Greenwood, A. I., & Nicholson, L. K. (2017). A Noncanonical Binding Site in the EVH1 Domain of VASP Regulates Its Interactions with the Proline Rich Region of Zyxin. Biochemistry. PMID 28783324 DOI: 10.1021/acs.biochem.7b00618.

Selected Scholarships, Honors and Awards

SMPD Scholar	2020
NIH Diversity Supplement Awardee	2019
Travel Award and Facilitator for SciOut18, Rockefeller University	2018
Exemplary Service Award (Advanced Career Graduate Student, Cornell)	2018
FGSA Travel Award for Excellence in Graduate Research (APS)	2018
CID Travel Award Biophysical Society Meeting	2018
Telluride School on Biomolecular Structure and Dynamics, summer school	2017
Molecular Cellular Bioimaging Summer Program, KAUST, Thuwal, Saudi Arabia	2016
Graduate of Note, Tompkins Cortland Community College (TC3)	2014

Selected Leadership and Outreach Experience

SACNAS at Cornell University

2017- 2018
Society for Advancing Chicanos/Hispanics and Native American in Science (SACNAS) at Cornell offers a welcome environment for empowering Hispanics and Native American in science.

- Participated as active member, as outreach coordinator and as Social Chair.
  Outreach Chair:
  Coordinated SACNAS involvement in five activities for kids and adults from the general project in spring 2017
  Social Chair:
  - Organized, budgeted and promoted social events between the SACNAS members.
  - Created a mentorship program between current grad students at Cornell and 57 undergraduate students from "Universidad de Puerto Rico (UPR)" who came for Spring 2018 as part of the Cornell-UPR interuniversity Relief Program after hurricane "Maria".

Biophysics Graduate Student Representative at Cornell University
2016-2017

- Organized Annual Biophysics Symposium at Cornell 2016.
- Scheduled and hosted Student Invited speaker for Biophysics Colloquium.
- Coordinated weekly lunch between Biophysics colloquium speaker and students.

GEEKS (Graduates Employing Empathy, Knowledge and Services) at Cornell University
Jan 2015-Jun 2017
As Vice-president:

- Planned, coordinated and executed a biochemistry workshop for more than 75 girls in 7th and 8th grade and their parents at the Expanding Your Horizon (EYH) Conferences in 2016 at Cornell. In 2017, organized same workshop for 90 girls and their parents.

Selected Oral and Poster Presentations

Oral Presentations:

- DR. George W. Raiziss 36th annual retreat, Department of Biochemistry and Biophysics, UPENN. "Development of bivalent MAP kinase signaling inhibitors" **Presented**: Dec. 5, 2019 Pocono Mountains, PA.
- Science on Tap, Summer Series. "Living Machines: how the study and manipulation of proteins can be used to advance treatments for human disease and other technologies!", **Presented**: Jun 27, 2018. Ithaca, NY.

Poster Presentations:

- **Acevedo L.A.**, and Nicholson L.K. "Tuning A Prolyl *Cis/Trans* Molecular Switch That Regulates Lateral Root Development In Rice". **Presented:** Feb 21, 2018. San Francisco, California. 62th Annual Meeting Biophysical Society.
- **Acevedo L.A.**, Greenwood A.I., Gibbs E., Showalter S., and Nicholson L.K. "Novel Bivalent Interaction between VASP-EVH1 and Zyxin is Critical for Binding Orientation". **Presented:** Feb 28, 2016. Los Angeles, California. 60th Annual Meeting Biophysical Society.