ANDREW J BASALLA

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EDUCATION

M.S. Pharmaceutical Sciences August 2021 - May 2023
University of Colorado Anschutz, GPA: 3.91/4.0
Thesis: A Novel Approach For the Correction of Absorbance Measurements for Light Scattering

B.S. Chemical and Biological Engineering August 2015 - May 2019
University of Colorado Boulder, Major GPA: 3.7/4.0
Biomedical Engineering Minor

TECHNICAL EXPERIENCE

Proteomic Mass Spec Core Facility, University of Texas, Austin, TX February 2024 - Present
Research Associate II / Lab Manager

- Proteomic mass spectrometry scientist analyzing protein ID, molecular mass, and PTM modifications by mass spectrometry at the core facility. Performing enzymatic protease digestions and sample preparation for mass spec analysis. Performing mass spec data analysis using Proteome Discoverer, UniDec, and BiopharmaFinder.
- Utilizing coding experience to automate tasks like data management, routine system suitability data analysis, and data monitoring to reduce manual time for the core staff.
- Meeting with graduate students to help in project planning so ensure their experiment will be suitable for their project's goals.
- Giving introductory lectures on mass spectrometry and proteomics to students and staff at the university.

KBI Biopharma, Louisville, CO August 2019 - December 2023
Senior Research Associate, Analytical and Formulation Sciences

- Leader of the formulation development team at Louisville; which includes designing and executing iterative statistical based formulation development projects for adeno-associated viruses (AAVs), high concentration monoclonal antibodies (mAbs), oligonucleotides, bacteriophages, and antibody drug conjugates (ADCs) that are in the drug development process and seeking FDA approval.
- Independently designing and executing analytical characterization studies of protein biopharmaceuticals using on biophysical techniques, chromatographic, and mass spectrometry techniques to characterize pharmaceuticals for FDA approval.
- Light scattering and chromatography subject-matter expert and mass spectrometry lead; leading projects in these techniques, training new staff, and existing as a resource for troubleshooting.
- Giving oral presentations demonstrating project results and providing guidance to external client representatives based upon data and knowledge of FDA guidelines.
- Development python applications to optimize processes and ease in data analysis. Collaborating with scientists company-wide to determine critical bottle necks in analytical workflows and design tools to resolve issues.
- Developed a data processing tool which deciphers and deconvolutes large proteomic mass spectrometry datasets and exports as human readable file to greatly save scientists time.
- Developed a data processing tool for HPLC chromatographic files, enabling multi-dimensional data deciphering, deconvolution, light scattering correction and file reassembly.
- Developed data processing tools which can correct for light scattering interference in absorbance measurements, deconvolute absorbance spectra for nucleic acid quantitation, and deconvolute CD spectra for nucleic acid base composition.
- Design and implementation of a tool which can determine biophysical properties of a protein, DNA, or oligonucleotide and perform theoretical proteolytic cleavages and ion fragmentation patterns for mass spec analysis.

Gin Lab, University of Colorado Boulder, CO May 2017 - June 2019
Undergraduate Researcher

- Synthesis of monomers used for fabrication of Lyotropic Liquid Crystal membranes.
- Design and synthesis of new room temperature ionic liquid containing monomers for use in development of functional block co-polymer materials and membranes.
- Design, Fabrication, and Characterization of new ultrathin membranes made from polymerizable liquid crystal surfactants for water purification applications.
- Design, Fabrication, and Quality testing of membranes under various conditions for use in chemical warfare agent resistant clothing.

TECHNICAL SKILLS

- Characterization techniques including proteomic protein ID, peptide maps, N-glycan analysis, intact mass, sequence coverage, size exclusion chromatography, ion exchange chromatography, reverse phase chromatography, hydrophilic phase chromatography, forced degradation studies, and protein purification techniques using UFDF filters and column chromatography.
- Chromatographic techniques including HPLC, UPLC, and mass spectrometry using ESI mass spectrometers including Agilent Q-TOF, TOF, QQQ, and Thermo Ascend, Qexactive, and LTQ, and Waters TOF.
- Biophysical techniques including AUC, CD, FTIR, DSC, XRD, SEM, UV-vis, light scattering (DLS and MALS),DSF, fluorescence, osmolality, MST, ITC, NMR, SPR, and TGA
- Experience writing IND/BLA application documents, research publications, technical reports, and standard operating procedures.
- Software: Biopharma Finder, Agilent Mass Hunter, Proteome Discoverer, Empower, Chemstation, Python, Dash, Pandas, Scipy, Numpy, Plotly, Git, Docker, Juypter, VSCode, VBA, Microsoft Suite, ASTRA, Graphpad prism, Sedfit, JMP, MicroCapillary PEAQ DSC,

RESEARCH AND PUBLICATIONS

- **Basalla, A.J.**, Kendrick, B.S. 2023, Correcting Ultraviolet-Visible Spectra for Baseline Artifacts. Journal of Pharmaceutical Sciences, Volume 112, Issue 12, 3240 - 3247.
- McGrath, M. J., Hardy, S. H., **Basalla, A. J.**, Dwulet, G. E., Manubay, B. C., Malecha, J. J., Shi, Z., Funke, H. H., Gin, D. L., & Noble, R. D. 2019 Polymerization of Counteranions in the Cationic Nanopores of a Cross-linked Lyotropic Liquid Crystal Network to Modify Ion Transport Properties. ACS Materials Letters, 1(4), 452–458.
- Dwulet, G. E., Dischinger, S. M., McGrath, M. J., **Basalla, A. J.**, Malecha, J. J., Noble, R. D., & Gin, D. L. 2019. Breathable, Polydopamine-Coated Nanoporous Membranes That Selectively Reject Nerve and Blister Agent Simulant Vapors. Industrial & Engineering Chemistry Research, 58(47), 21890–21893.