ANDREA A. JOSEPH
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I. EDUCATION

2016-2021 University of Washington, Seattle, WA
Ph.D. Chemical Engineering, expected June 2021
Cumulative GPA: 3.80/4.0

2013-2016 Johns Hopkins University, Baltimore, MD
B.S. Chemical and Biomolecular Engineering
Cumulative GPA: 3.85/4.0
Departmental Honors

II. PROFESSIONAL EXPERIENCE

2017-present University of Washington, Seattle, WA
Graduate Research Assistant, Advisor: Elizabeth Nance
Polymeric nanoparticles for the treatment of neonatal brain injury

2015-2016 Johns Hopkins University, Baltimore, MD
Undergraduate Research Assistant, Advisor: Justin Hanes
Multiple particle tracking (MPT) to probe sputum microstructure in cystic fibrosis

2015 International Business Machines, Essex Junction, VT
Process Engineering Intern, Manager: Erik Putlitz
Characterization and optimization of chemical vapor deposition tools

III. HONORS and AWARDS

2020 Collegiate Rapid Fire Competition Finalist, Society of Women Engineers
2020 Husky 100 Awardee, UW
2019 Graduate School Conference Travel Award, UW Graduate School
2019 NIH Training Course in Neurotherapeutics Discovery and Development Attendee
2018-2021 NIH F31 Fellow
2018 Travel Grant, UW Graduate & Professional Student Senate
2017 National Science Foundation Graduate Research Fellowship Honorable Mention
2016 Runstad Family Endowed Fellowship Recipient
2016 Centennial Conference Champions, Johns Hopkins University Varsity Tennis
2013-2016 Engineering Dean's List, Johns Hopkins University
2013-2016 Thomas J. Watson Memorial Scholarship

IV. MEMBERSHIPS

Society of Women Engineers
Controlled Release Society
American Institute of Chemical Engineers
Tau Beta Pi Engineering National Honor Society

V. PUBLICATIONS

*Co-first; Corresponding

1. H. Helmbrecht, **A. Joseph**, M. McKenna, M. Zhang, E. Nance. Governing Transport Principles for Nanotherapeutic Application in the Brain, *Current Opinions in Chemical Engineering.* (2020)
2. **A. Joseph***, R. Liao*, M. Zhang, H. Helmbrecht, M. McKenna, J. Filteau, E. Nance. Nanoparticle-microglial interaction in the ischemic brain is modulated by injury duration and treatment, *Bioengineering & Translational Medicine.* (2020)
3. V. Yellepeddi, **A. Joseph**, E. Nance. Pharmacokinetics of Nanotechnology-Based Formulations in Pediatric Populations, *Advanced Drug Delivery Reviews.* (2019)
4. **A. Joseph**, T. Wood, C. Chen, K. Corry, J. Snyder, S. Juul, P. Parikh, E. Nance. Curcumin-loaded polymeric nanoparticles for neuroprotection in neonatal rats with hypoxic ischemic encephalopathy, *Nano Research*. (2018)
5. J. Smith*, K. G. Sprenger*, R. Liao, **A. Joseph**, E. Nance, J. Pfaendtner, Determining Dominant Driving Forces Affecting Controlled Protein Release from Polymeric Nanoparticles, *Biointerphases*. (2017)
6. G. Duncan, J. Jung, **A. Joseph**, A. Thaxton, N. West, M. Boyle, J. Hanes, J. S. Suk, Microstructural alterations of Sputum in Cystic Fibrosis Lung Disease, *JCI Insight*. (2016)

Under Revision
1. **A. Joseph**, G. Simo, T. Gao, N. Alhindi, E. Nance. Surfactant effects on nanotherapeutic fate in the brain, *Journal of Controlled Release.* Submitted: April 2020

VI. PRESENTATIONS

Oral presentations
1. **A. Joseph**, E. Nance. Can nanoparticles treat brain disease? Virtual talk (originally Seattle, WA). *Town Hall Science Speaker Series.* (Oral presentation, June 2020)
2. **A. Joseph**, G. Simo, T. Gao, E. Nance. Effect of surfactant size and structure on biodegradable nanoparticle interaction with the brain microenvironment. Seattle, WA. *Biomaterials Day.* (Oral presentation, December 2019)
3. **A. Joseph**, E. Nance. Nanoparticle design for drug delivery to the neonatal brain. Seattle, WA. *Graduate Student Symposium.* (Oral presentation, September 2019)

Poster presentations
4. **A. Joseph**, R. Liao, C. Nyambura, K. Hildahl, E. Nance. Nanotechnology for therapeutic applications in the developing brain. *Chemical Engineering Research Showcase.* Seattle, WA. (February 2020)
5. G. Simo, **A. Joseph**, T. Gao, E. Nance. Evaluation of Surfactant Effects on Nanoparticle Toxicity in the Brain Microenvironment. *NCSU Future Leaders in Chemical Engineering Symposium.* Seattle, WA. (November 2019)
6. **A. Joseph**, T. Wood, C. Chen, K. Corry, J. Snyder, S. Juul, P. Parikh, E. Nance. Curcumin-loaded polymeric nanoparticles for neuroprotection in neonatal rats with hypoxic ischemic encephalopathy. *Biomedical Engineering Society*. Philadelphia, PA. (October 2019)
7. G. Simo, **A. Joseph**, T. Gao, E. Nance. Evaluation of Surfactant Effects on Nanoparticle Toxicity in the Brain Microenvironment. *NSF REU Symposium.* Seattle, WA. (August 2019)
8. **A. Joseph**, G. Simo, T. Gao, E. Nance. Surfactant choice in nanoparticle formulation drives nanoparticle behavior and fate in the brain. *Controlled Release Society.* Valencia, Spain. (July 2019)
9. **A. Joseph**, R. Liao, M. Zhang, C. Nyambura, J. Filteau, E. Nance. Nanotherapeutics for developmental brain injury. *Chemical Engineering Research Showcase.* Seattle, WA. (March 2019)

10. **A. Joseph**, R. Liao, E. Rhodes, H. Pontes, J. Pon, E. Nance. Surfactant effects on biodegradable nanoparticle behavior in the brain. *Nano Drug Delivery Symposium*. Portland, OR. (September 2018)
11. **A. Joseph**, T. Wood, C. Chen, K. Corry, J. Snyder, S. Juul, P. Parikh, E. Nance. Curcumin-loaded polymeric nanoparticles for neuroprotection in neonatal rats with hypoxic ischemic encephalopathy. New York City, NY. *Controlled Release Society*. (July 2018)
12. **A. Joseph**, T. Wood, C. Chen, K. Corry, J. Snyder, S. Juul, P. Parikh, E. Nance. Curcumin-loaded brain-penetrating nanoparticles for neuroprotection in neonatal HIE. Asilomar, CA. *11th Hershey Conference on Developmental Brain Injury*. (May 2018)
13. **A. Joseph**, T. Wood, C. Chen, K. Corry, J. Snyder, S. Juul, P. Parikh, E. Nance. Curcumin-loaded brain penetrating nanoparticles for the treatment of neonatal brain injury. *Biomaterials Seminar.* Seattle, WA. (March 2018)
14. C. Curtis, **A. Joseph**, R. Liao, M. McKenna, M. Zhang, E. Nance. Nanotechnology and imaging-based platforms for the evaluation and treatment of neurological disease. Seattle, WA. *Chemical Engineering Research Showcase*. (March 2018)

VII. TEACHING EXPERIENCE

Fall 2019	University of Washington, Chemical Engineering, *Teaching Assistant for Mass Transfer and Separations*
Summer 2018	University of Washington, *Project Leader for Math Academy*
Fall 2015	Johns Hopkins University, Chemical and Biomolecular Engineering, *Teaching Assistant for Introduction to Process Analysis*
2015-16	Johns Hopkins University, Introductory Chemistry, *Peer-Led Team Learning Leader*

VIII. MENTORSHIP and OUTREACH

Undergraduate Students

2020-present	Denise Beebout, Chemical Engineering Bachelor's student
2020-present	Ana Rios, Biongineering Bachelor's student
2019-present	Norah Alhindi, Molecular and Cellular Biology Bachelor's student KAUST Scholar
2019-2020	Tora Goa, BS in Chemical Engineering
2018-2020	Georges Simo, BS in Chemical Engineering and Biochemistry 2019 Mary Gates Scholar
2018	Hugo Pontes, BS in Chemical Engineering 2018 Washington Research Foundation Fellow
2017-2020	Jessica Pon, BS in Chemical Engineering
2017-2018	Emily Rhodes, BS in Chemical Engineering
2017-2018	Andrew Kirk, BS in Chemical Engineering
2017-2018	Catherine Panlillio, BS in Chemical Engineering
2017-2018	Sanchit Gad, BS in Chemical Engineering
2017-2018	Alex Choe, BS in Chemical Engineering

High School Students

2020	Maria Sati, Bellevue WA
2018	Sanjana Janakiraman, Bellevue WA
2017	Meghan Mallya, Austin TX, STEMMPREP

Outreach

2020	Introduce a Girl to Renewable Energy, ACES booth lead
2019	Science demonstration at Horizon Elementary School, Mukilteo School District

2019 Engineering Discovery Days, Nance Lab booth lead
2018 Women in Science and Engineering Conference (UW), Volunteer
2018 Engineering Discovery Days, Nance Lab booth lead
2017 Engineering Discovery Days, Nance Lab booth lead
2017 Introduce a Girl to Nano, Nance Lab booth lead

IX. EXTRACURRICULAR ACTIVITIES

2020-present President, Society of Women Engineers, UW Graduate Section, Seattle WA
2020-present Treasurer, Young Scientists Committee, International
2019-present Graduate Student Liaison, Faculty Council on Women in Academia, Seattle WA
2019 President, Association of Chemical Engineering Graduate Students, Seattle WA
2018 Fundraising and event chair, Association of Chemical Engineering Graduate Students, Seattle WA
2018-2020 Sponsorship Chair, Young Scientists Committee, International
2017-2018 Vice President, Women in Chemical Engineering, Seattle WA
2016-2017 Social Director, Women in Chemical Engineering, Seattle WA
2016-present Tutor, Roosevelt High School, Seattle WA
2015-2016 Centennial Conference Champions, Varsity Tennis, Baltimore MD
2014-2016 Mentor, Thread, Baltimore MD
2013-2016 Peer Tutor, Peer-Led Team Learning, Baltimore MD
2013-2015 Vice President, Club Tennis, Baltimore MD