

## EDUCATION

### Northwestern University, Evanston, IL

Ph.D. Candidate in Biomedical Engineering - Imaging & Biophotonics | GPA: 3.73

Expected 2022

- **Fellowships:** Fellowship in Leadership (2020) | Walter P. Murphy Fellowship (2017)

### Illinois Institute of Technology (IIT), Chicago, IL

B.S. in Biomedical Engineering - Cell & Tissue Engineering | GPA: 3.96 (*Summa Cum Laude*)

2013 - 2017

- **Scholarships:** Toprani Research Scholarship (2016) | ARC Scholar (2015) | International Student Scholarship (2013)

## RESEARCH & TEACHING EXPERIENCE

- **Backman Lab, Northwestern University: Graduate Student Researcher** Fall 2017 - Present
  - Led a project on cell reprogramming to study chromatin conformation for regenerative engineering applications.
  - Designed genomics and imaging experiments. Created custom software to perform analysis on large datasets.
  - Mentored interdisciplinary research teams as a part of the NSF Research Experience and Mentoring Program.
- **Northwestern Prison Education Program, Course Instructor** Fall 2021
  - Taught an introductory Epigenomics course in partnership with the Cook County Department of Corrections
- **Biomedical Engineering Department, Northwestern University & IIT: Teaching Assistant** Spring 2020 & 2017
  - Supervised lab sessions and mentored 40+ students in Quantitative Experimentation and Design.
  - Delivered presentations on Image Processing, held office hours, and trained 30+ students on MATLAB.
- **Medical Imaging Research Center (MIRC), IIT: Research Assistant** Spring 2016 - Fall 2016
  - Optimized quantitative molecular phenotyping of cell-surface tumor biomarkers using mathematical modeling.
  - Co-built an analysis software to identify key parameters to improve accuracy in experimental protocols.

## LEADERSHIP & PROFESSIONAL DEVELOPMENT

- **Mentor, Research Engagement Student Group, Niles West High School** Fall 2021
  - Mentored high school students in doing independent STEM research in planarian regeneration.
- **Extern, Mars & Co - Global Strategy Consulting Firm** Winter 2021
  - Shadowed senior consultants and practiced cases in strategy consulting as a part of the NU Externship program.
- **Diversity Committee Member, BMEGS at Northwestern University** Winter 2021 - Spring 2021
  - Developed SMART goals for DEI initiatives in partnership with Biomedical Engineering Graduate Students.
- **Vice President of Communications & Marketing, Advanced Degree Consulting Alliance** Fall 2020 - Fall 2021
  - Collaborated with consulting firms and professional development programs to organize case workshops. Created the website, designed surveys to integrate membership feedback, and increased membership by 58%.
- **Leadership Fellow, Center for Leadership at Northwestern University** Fall 2020 - Winter 2021
  - Selected to participate in a quarter-long fellowship program to discover strengths-based leadership, study major theories, and understand frameworks of leadership and teamwork.

## AWARDS AND HONORS

- IIT Armour College of Engineering Medal for Biomedical Research 2017
- Tau Beta Pi Engineering Honor Society, Member Since 2016
- Undergraduate Research Expo Winner, IIT 2016

## ★ COMPUTER SKILLS

- **Applications:** Microsoft Office, Adobe Photoshop, ImageJ, IMOD, and MATLAB (Image Processing Toolbox).
- **Languages:** Strong in Python, MATLAB, and R. Intermediate in C++ and JAVA.

## PATENT & PUBLICATIONS (of 7 publications and 3 conference presentations)

- Agrawal, V., Wang, X., et al. "Chromatin Reprogramming via Contact Guidance-Induced Nuclear Deformation Promotes Stem Cell Differentiation. *OSA Technical Digest (Optical Society of America). Bio-Optics: Design and Application* (2021).
- Daneshkhah, A., Agrawal, V., et al. "Evidence for possible association of vitamin D status with cytokine storm and unregulated inflammation in COVID-19 patients." *Aging Clinical and Experimental Research* (2020).
- Mass, P., Shah, N., Agrawal, V., and Tong, Y. "Foldable walker." U.S. Patent 10,857,056 issued December 8, 2020.