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VASUNDHARA AGRAWAL

Evanston, IL

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EDUCATION

Northwestern University, Evanston, IL
Ph.D. Candidate in Biomedical Engineering – Imaging & Biophotonics | **GPA:** 3.73 — Expected 2022
Certificate in Research Communication, Research Communication Training Program (RCTP) — Summer 2021
- **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%.

AWARDS AND HONORS

- IIT Armour College of Engineering Medal for Biomedical Research — 2017
- Society of Women Engineers Region H Research Competition - Best in Show — 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.