Chinmay Singh

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Summary

Innovative biomedical engineer with a strong foundation in biotechnology, medical device development, and synthetic biology.

Education

Biomedical Engineering | University of North Carolina at Chapel Hill | 05/2026 | Chapel Hill, NC

- GPA: 3.714/4.0
- Dean's List 7x

Biomedical Engineering | North Carolina State University | 05/2026 | Raleigh, NC

Experience

UNC iGEM Team, Wet Lab Lead | 01/2025 - Present | University of North Carolina at Chapel Hill | Chapel Hill, NC

- Led and organized bi-weekly sub-team meetings for the wet lab team of 6 in UNC's International Genetic Engineering Machine team; presented at large group meetings bi-weekly on wet lab contributions and findings; won gold at the iGEM Grand Jamboree in Paris, France, for presenting findings
- Synthesized proteins for development of a novel probiotic aiming to reduce PFAS within the body

Teaching Assistant; BMME 398: Junior Design & Manufacturing | 01/2025 - Present | Lampe Joint Department of Biomedical Engineering | Chapel Hill, NC

- Organized and led laboratory sessions, ensuring smooth execution of experiments and activities
  Provided instruction on VR development in healthcare, guiding students through Unreal Engine 5 and VR module concepts
- Delivered hands-on training in mammalian cell culture techniques for tissue engineering and drug development
- Hosted office hours, offering individualized support on coursework, lab concepts, and technical challenges

Undergraduate Researcher in Sode Lab | 01/2025 - Present | University of North Carolina at Chapel Hill | Chapel Hill, NC

- Researching single-chain variable fragment (scFv) antibody development under the mentorship of Dr. Madoka Nagata
- Cultivating genetically modified E. coli to facilitate BNP and NPY antibody transformations
- Leveraging AlphaFold to predict and analyze the 3D structure of target proteins

Co-Founder | 08/2023 - Present | KAIRS, LLC | Chapel Hill, NC

- KAIRS: Knee AI Rehab Sleeve: prototyped and validated solution for patients undergoing rehabilitation post-knee surgery, utilized TensorFlow to build a machine learning model for prototype.
- First runner-up globally at the 2024 BMES/Medtronic Student Design Competition
- Received KEEN Entrepreneurial Mindset Award at UNC BeAM MakerFest Fall 2024
- NC State VenturePack Grand Champion 2025 & Audience Choice Winner
- Raised $12,500 in non-dilutive, equity-free funding

President | 06/2023 - Present | Engineering World Health @ UNC | Chapel Hill, NC

- Organized and led UNC's inaugural 'Engineer-A-Thon' for 40+ students, managing a $2,000 corporate-sponsored budget, coordinating engineering workshops, and guest speaker events with Dr. Robert Langer and Dr. Eric Green
- Organized and instructed kit-building events of 20+ to build optical heart rate monitor kits, soldering skills, and other electronic components
- Providing exposure to biomedical engineering to those unfamiliar with the field, communicating engineering skills

Co-Founder & Co-Host of BioCast Podcast | 06/2023 - Present | Self-Employed | Chapel Hill, NC

- Coded and designed an entire desktop website from scratch using HTML, CSS, and JavaScript (https://biocast.co)
- Edited episodes using Adobe Audition, wrote and published blog posts on the website, and advertised episodes on social media
- Interviewed guests such as Eric Green, Director of the NHGRI, Robert Langer, co-founder of Moderna, Sethuraman Panchanathan, Director of the National Science Foundation, and more

Undergraduate Researcher in Stein Lab | 01/2023 - 05/2025 | University of North Carolina at Chapel Hill | Chapel Hill, NC

- Growing brain organoids to examine biomarkers and mechanisms of cortical hyperexpansion in patients of autism spectrum disorder, under mentorship of Dr. Esther Park
- Conducted weekly mycoplasma testing on organoids to ensure fidelity
- Utilized R to conduct single-cell RNAseq data analysis
- Comparing pre-existing brain organoid protocols and optimizing to develop reproducible outcomes

Undergraduate Researcher in Zylka Lab | 06/2022 - 05/2025 | University of North Carolina at Chapel Hill | Chapel Hill, NC

- Studying the effects of spinal macrophages on resolving nociceptive hypersensitivity utilizing immunohistochemistry techniques and flow cytometry, under mentorship of Dr. Esther Park
- Quantifying cell counts for a project concerning neuropathic pain in mice models using Fiji
- Evaluating azoxystrobin effects on mouse brain models by performing cryosectioning and immunostaining techniques

Peer Instructor for BIOL 103: How Cells Work | 08/2023 - 05/2024 | University of North Carolina at Chapel Hill | Chapel Hill, NC

- Aided in student instruction in class and facilitated discussion on course content
- Held office hours once a week for students to ask questions and review concepts
- Conducted review sessions prior to exams to aid students

Skills

Fiji R, Unreal Engine 5, Python, Soldering, Fusion360, OnShape CAD, Immunohistochemistry, Cell Culture, Adobe Suite, Data Analysis, 3-D Printing, Laser Cutting, PCB Design

Certificates

CPR/BLS Certified, North Carolina Emergency Medical Technician