

Neil Gupta

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EDUCATION

DUKE UNIVERSITY

M.ENG. BIOMEDICAL ENGINEERING

AREA FOCUS CERTIFICATE: MEDICAL DEVICE DESIGN
May 2020 • GPA 3.80/4.0

DUKE UNIVERSITY

B.S.E. BIOMEDICAL ENGINEERING

May 2019 • GPA 3.31/4.0

SKILLS

LAB SKILLS

- Bacterial Cell Culture & Maintenance, Cell Transformation & Selection, Shake Flask Fermentation, Cell Homogenization & Product Extraction, IR Spectroscopy, qNano TPRS, PCR, Gibson Assembly, Gene Analysis, Primer Design, DNA Gel Electrophoresis, Carbon (SLA) 3D Printer Operation, FDM 3D Printer Operation

PROGRAMMING & COMPUTER SKILLS

- Python, MongoDB, RESTful API Development, Server/Client Management, MATLAB, Arduino, SolidWorks, Fusion360, Technical Drawings, Rapid Computer Design & 3D Prototyping, Experimental Data Analysis

BUSINESS SKILLS

- Financial Accounting & Quantitative Projection, R&D Cost Analysis & Budgeting
- Market Research, IP Strategy, FDA Regulatory Pathway Analysis, Project Management, Business Plan Formation, Business Pitch Presentations

TECHNICAL EXPERIENCE

CEO/DESIGN ENGINEER, DUKE BME - ASSISTIVE AUDITOR MEDICAL DEVICE

AUG. 2019 - PRESENT

- Invented and designed novel medical device for automated contaminant detection in clinical environments.
- Lead team of Duke BME graduate students to design prototypes, develop solutions, conduct experiments, and present findings to hospital administrators.
- Documented key experimental results and device progress in order to commercialize invention and pursue patent protection.

DESIGN ENGINEER, MAK/DUKE COLLABORATION

DURHAM, NC & KAMPALA, UGANDA, JAN. 2019 - MAY 2019

- Designed and developed a low-cost, low-power autoclave for sterilization of medical equipment in collaboration with BME students at Makerere University (MAK) in Uganda.
- Visited Kampala, Uganda to implement the device and research hospital conditions alongside team members.

PRIMARY DESIGN ENGINEER, ENDOSWITCH, DUKE UNIVERSITY

JAN. 2016 - AUG. 2018, ONGOING

- Researched, designed, and prototyped novel 3D-printed endoscopic sheath with Duke physicians and BME Faculty.
- Presented device schematics and prototypes to project managers and incorporated feedback for iterative product development.
- Produced final device used in endoscopic pre-human cadaver trials by Duke ENT physicians.

ENGINEERING STRATEGY ADVISOR, DUKE TECHNOLOGY TRANSFER PROJECT

AUG. 2019 - DEC. 2019

- Assisted in development of novel rapid cerebral cooling device for mitigation of traumatic brain injury (TBI) related secondary injuries in collaboration with Duke BME and Medical Faculty.
- Assessed device FDA classification, planned early stage trials, and developed budget, timeline, and financial projections.

LEADERSHIP

CO-FOUNDER/VP OF RESEARCH, SYNTIVA THERAPEUTICS

DURHAM, NC, SEPT. 2017 - PRESENT

- Founded start-up company with patent-pending methods for bio-synthetic production of pharmaceutical-grade cannabinoids; Planned, organized, and conducted R&D tasks, including overall strategy, daily lab management, and key experiments.
- Performed post-operations analysis to gain valuable insight on biotechnology start-up strategy and troubleshooting lab methods.

CO-PRESIDENT, ENGINEERING TEAM PEER ADVISORY BOARD

DURHAM, NC, 2018

- Provided personalized academic counseling, course scheduling resources for 25 incoming Duke engineering students; organized and hosted networking events for over 200 students.

CAPTAIN, DUKE IM BASKETBALL

DURHAM, NC, 2018-2019

- Progressed from bench player on Duke intramural basketball team to Team Captain throughout 4 years of college.

HONORS AND AWARDS

BEST BUSINESS APPLICATION AWARD, DUKE BME SYMPOSIUM, 2020

- Presented findings and business development strategy for a novel medical device to graduate students and BME faculty; awarded to project with the most business potential.

PRATT FELLOWSHIP, DUKE UNIVERSITY, 2019

- Selected for research fellowship with Duke Material Science lab; Designed experiments for fabrication of in vitro human kidney stone models for testing of laser lithotripsy treatment.
- Conducted daily research experiments and presented findings to students and faculty at annual fellowship presentation.

FACULTY'S CHOICE AWARD, DUKE BME SYMPOSIUM, 2018

- Presented research results on novel methods for bio-synthetic production of cannabinoids to graduate students and BME faculty; awarded to the best performing project as decided by Duke BME faculty.

DEAN'S LIST, DUKE UNIVERSITY, SPRING 2016 & 2017

- Recognition awarded to academically high-performing students.

PROFESSIONAL DEVELOPMENT

AMERICAN ASSOCIATION OF PHYSICIANS OF INDIAN ORIGIN CONVENTION

JULY 2017, 2018

- Attended the annual AAPI meeting, networking with physicians and researchers of Indian origin, attending seminars and workshops, and participating in cultural events.