

# ROBERTO GAMBARINI

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## EDUCATION

### IMPERIAL COLLEGE LONDON (London, UK)

September 2022

#### MRes Molecular Engineering

- Programme focused on advancing the understanding in molecular science and engineering with a three month industry placement. The course includes modules about optimization, simulation, programming, and ecologic responsibility in the context of molecular physics.

### UNIVERSITY OF SOUTH CAROLINA (Columbia, SC)

May 2020

#### Bachelor of Science in Biomedical Engineering, Minor in Chemistry

Dean's Honour List; Graduation with Leadership Distinction in Research

- Applied the principles of kinetics for applications involving biochemical and biological systems to design a bioreactor
- Used the conservation laws of biological and biomedical systems to design a transdermal delivery device for the non-invasive delivery of Rivastigmine for the treatment of Alzheimer's disease
- Proposed mechanisms from developmental biology of kidneys to improve 3D-Bioprinting techniques for artificial organ designs

## WORK EXPERIENCE

### COLLINSON GROUP (London, UK)

January 2021 – September 2021

COVID-19 Testing Centre at St. Pancras International & Heathrow Airport

#### COVID Senior Testing Technician

- Performed tests such as Lateral Flow - Rapid Antigen Test, RT-LAMP, and RT-PCR for the detection of COVID-19 for the purpose of travelling in our out of the UK
- Worked in a high-output aseptic UKAS compliant environment with direct interaction with customers
- Supported the senior nurse in the training and supervision of other technicians
- Acted as liaison between the testing centre and the lab

### UofSC MECHANICAL ENGINEERING DEPARTMENT (Columbia, SC)

October 2019 – May 2020

Mechanical Engineering Senior Design

#### Teaching Assistant

- Graded assignments and organized peer evaluations using Visual Basic for Applications
- Managed communications and evaluations between members in each design group

### UofSC SCHOOL OF MEDICINE (Columbia, SC)

January 2019 – May 2020

Human Anatomy & Physiology for Biomedical Engineers

#### Laboratory/Teaching Assistant

- Performed dissections on human cadavers used in the laboratory
- Assisted students in basic human anatomy using human cadavers
- Maintained, cleaned, and sterilized laboratory and safety equipment

### THE SOUTH CAROLINA ISPE CHAPTER (Columbia, SC)

October 2018– May 2020

Professional society dedicated to connect college students with biotechnology industries

#### Vice President, Founding Member

- Organized and hosted meetings for executive and general members
- Networked with faculty, student organizations and industry in South Carolina for funding and events

## RESEARCH EXPERIENCE

**UofSC DEPARTMENT OF CHEMICAL ENGINEERING** (Columbia, SC) *October 2018 – January 2020*  
POCD for resource limited settings using Nanotechnology. Dr. Chang Liu Lab

*Assistant Researcher*

- Operated a 3<sup>rd</sup> gen sequencing tool “Nanopore”. As a detection and sequencing tool of polynucleotides
- Developed the lab’s graphing software using R Language
- Created the website at the request of the Principal Investigator
- Performed extensive literature review for the detection of circulating RNA from HIV

**UofSC BIOMEDICAL ENGINEERING PROGRAM** (Columbia, SC) *September 2019 – May 2020*  
Manipulation of Cell Membrane Environment to Prevent Fusion among Immune Cells

*Lead Researcher*

- Used a molecular dynamics simulation package to simulate cell membrane fusion at different cholesterol concentrations
- Developed simulations using mean field theory in Fortran code
- Established standard protocol procedure for future research groups to follow

## PUBLICATIONS

**Research Collaborator**

*December 2019*

Wei, X., Zhang, Z., Wang, X., Lenhart, B., Gambarini, R., Gray, J., & Liu, C. – “Insight into the effects of electrochemical factors on host-guest interaction induced signature events in a biological nanopore”.  
Nanotechnology and Precision Engineering

## AWARDS

**McNair Undergraduate Research Award Recipient**

*April 2019*

Sponsor: *University of South Carolina, Office of Undergraduate Research*

Awarded a stipend for a project regarding the detection of CRISPR mediated nucleic acids using biological nanopore at UofSC. Results presented at Summer Research Symposium

## CERTIFICATIONS

**First Response Emergency Care Level 3**

*Hearts First Ambulance Service. Issued Jan 2021. Expires Jan 2023*

**General Laboratory Safety and Compliance**

*University of South Carolina. Issued Jan 2019. No expiration*

**Hazardous Waste Competency**

*University of South Carolina. Issued Jan 2019. No expiration*

**Bloodborne Pathogens Training for Labs**

*University of South Carolina. Issued Jan 2019. Expired Jan 2020*

**Biosafety Level 2 Training for Labs**

*University of South Carolina. Issued Feb 2019. Expired Feb 2021*

