

JOSEPH VECCHIO

jvecchi2@nd.edu | 732-977-5953

EDUCATION

University of Notre Dame, College of Science

Doctor of Philosophy (Ph.D.) in the Integrated Biomedical Sciences

Notre Dame, IN

August 2022– Present

- Concentration: Immunology and Infectious Disease

Boston College, Morrissey College of Arts and Sciences

Bachelor of Science (B.S.) in Biochemistry

Chestnut Hill, MA

August 2018– May 2022

- Relevant courses: Introduction to Genomics, Investigations in Molecular Cell Biology Lab, Biochemistry I & II, Vaccination and Immunity, Principles of Immunology, Microbiology

Biotechnology High School

IB Diploma Recipient

Freehold, NJ

June 2018

RESEARCH EXPERIENCE

Notre Dame Biology Department

Laboratory Research Assistant

South Bend, IN

August 2022 – Present

- Principal Investigator: Jeff Schorey, Ph.D.
- Working to understand the extent to which infection with the *M. bovis* BCG vaccine strain induces IFN- β production upon macrophage entry in vitro to improve vaccine potency
- Elucidating the roles of extracellular vesicles (EVs) in innate and adaptive immunity following intranasal mice infection with *M. bovis* BCG

Boston College Biology Department

Laboratory Research Assistant

Chestnut Hill, MA

January 2019 – May 2022

- Principal Investigator: Ismael Ben Fofana, Ph.D.
- Characterization and analysis of SIV-specific monoclonal antibodies using phage display technology
 - Selecting for SIV-specific monoclonal antibodies
 - Characterizing single chain Fv (scFv) antibodies by ELISA
- Analysis of COVID-19 severity (fatality, viral load, patient demographic information), antibody responses in coronavirus infected patients
 - Measuring IgG, IgA, IgM titers in smokers versus non-smokers and elucidating the effect of smoking on COVID-19 disease progression using ELISA
 - Determining antibody potency and measuring the amount of potent inhibitory antibodies (Neutralizing Antibody Titration using pseudovirus assay and 293T ACE-2 cells)

Boston College Biology Department

Laboratory Teaching Assistant

Chestnut Hill, MA

August 2021 – May 2022

- Teaching Assistant for the Advanced Experience Elective Course “Research in Molecular Biology Laboratory”
- Perform projects alongside students to instruct them on various molecular biology techniques
- Organize, prepare, and facilitate experiments in the lab
 - Genetic engineering, PCR primer design, DNA sequencing, cell culture and maintenance (passage, splitting), cell transfection, protein expression, and immunology (ELISA, flowcytometry).

Boston College Sociology Department

Research Assistant

Chestnut Hill, MA

September 2021 – May 2022

- Principal Investigator: Sara Moorman, Ph.D.
- Working on a project focused on the effects of social networks and relationships on dementia-linked cognitive decline and functioning within populations of the oldest old (75+)
- Completing statistical analyses in STATA and attending weekly meetings

Icahn School of Medicine at Mount Sinai

New York City, NY

- Principal Investigator: Melissa Smith, Ph.D.
- Worked on a project titled “Full Length Repertoire Sequencing of the Rhesus macaque (*M. mulatta*) Expressed Immunoglobulin G (IgG) VDJ-CH Region”
- Techniques learned: HiFi library construction through SMRTbell Template preparation (PacBio), Qubit Fluorometric Quantitation (Thermo Fisher Scientific), Chip-based electrophoresis to assess quality and size of RNA and DNA (Agilent - Bioanalyzer)
- Using the Rhesus macaque model for HIV infection and pathogenesis
- Understanding antibody responses and IgG repertoire analysis
- Sequencing full-length IgG molecules using a next-generation sequencing platform (PacBio)
 - IgG RNA extraction, cDNA amplification and purification, full length sequencing from PacBio from PBMCs amplification

PUBLICATIONS

Viral and immunologic evaluation of smokers with severe COVID-19

Vecchio et al.

*Scientific Reports**March 2023*

- First-author publication associated with Boston College. Manuscript submitted.

WORK EXPERIENCE

Office of University Communications

Chestnut Hill, MA

*Lead Social Fellow**October 2018 – May 2022*

- Curate the Instagram feed of the official Boston College Instagram account (@BostonCollege)
- Organize and schedule meetings with the Social Fellow team
- Showcase the daily life of being a student at Boston College through the coordination of posts, Story Takeovers, and social media campaigns

Boston College Campus Ministry

Chestnut Hill, MA

*Social Media Manager**September 2018 – May 2022*

- Manage social media platforms for Boston College Campus Ministry (@bccampusmin) to spread its messages of faith and justice through sacramental, retreat, and service-immersion programming
- Design posts, stories, campaigns, and graphics for the social media accounts
- Meet with and manage the requests of various departmental programs and student groups to ensure their meets are met by meeting deadlines and keeping an organized scheduling process

CAMPUS & COMMUNITY INVOLVEMENT

Berthiaume Institute for Precision Health (BIPH) Graduate Student Group

South Bend, IN

*Theme Leader**October 2022 – Present*

- Co-lead Microbiome and Human Health cluster to coordinate social, academic, and professional development events for graduate students and faculty associated with the Berthiaume Institute for Precision Health (BIPH) at the University of Notre Dame
- Meet biweekly to coordinate event planning and organization

Food Bank of Northern Indiana

South Bend, IN

*Volunteer**February 2023 – Present*

- Pack food, snacks, and beverages for the Food 4 Kids Backpack Program, which serves over 2,500 students suffering from food insecurity in Elkhart, LaPorte, Marshall, Starke and St. Joseph Counties
- Aid in other general functions of the food bank such as inventory processing

American Chemical Society: Boston College Chapter

Chestnut Hill, MA

*President, Member**August 2020 – May 2022*

- Elected President 2021-2022 academic year

- Lead weekly meetings with the Executive Board and organize events for the officially licensed American Chemical Society Chapter of Boston College
- Plan events that bring chemistry-themed events to the greater undergraduate population including both professional / career development and recreation
- American Chemical Society Student Member since September 2017

First Generation Club – First Generation College Student Group

Executive Board

Chestnut Hill, MA
August 2018 – May 2022

- Media Chair (2019-2020): Created event flyers and managed the social media for the first-generation college student community at Boston College and beyond
- Event Planner (2020-2021): Planned professional and social events during the 2020-2021 school year for the first-generation community
- Senior Advisor (2021-2022): Advise the club, provide advice to other executive board members on overall functioning, and serve on panels as the Senior Advisor to the club

Campus Activities Board (CAB)

Creative Coordinator

Chestnut Hill, MA
September 2020 – May 2022

- Design graphics, posts, and flyers for marketing events for the largest event-planning campus organization
- Attend weekly departmental meetings to discuss the needs of the organization and upcoming events for branding purposes

CERTIFICATIONS

COVID-19 Contact Tracing

Coursera, Johns Hopkins Bloomberg School of Public Health

July 2020

CITI Program Training

January 2021 – Present

Basic Biosafety Training (ID 94707), OSHA Bloodborne Pathogens (ID 94711), Emergency and Incident Response to Biohazard Spills and Releases (ID 94713), OSHA Personal Protective Equipment Training (ID 94716)

HONORS

Dean's List

Boston College

First Honors: Fall 2020, Spring 2021, Fall 2021
Second Honors: Fall 2019, Spring 2020, Spring 2022

IB Diploma Recipient

International Baccalaureate Program

Biotechnology High School
June 2018

Eagle Intern Fellowship

Boston College Career Center

Boston College
May 2018

2018 NJ Governor's STEM Scholar

Research & Development Council of New Jersey
December 2017

GeneTex 2019 Fall Scholarship Recipient

GeneTex, Inc.
August 2019

RTK Scholar Program - Scholarship Recipient

RTK Environmental Group
July 2018

SKILLS

Laboratory: Primer Design, Restriction Enzyme Digestion, Electrophoresis, Bacterial Cloning, Mammalian Cell Culture, PCR, ELISA, Neutralization Assay, Light and Fluorescent Microscopy, Ion / Gas Chromatography, Western Blot, Immunofluorescence, Protein Purification

Computer: Python, STATA, SnapGene, Geneious, GraphPad Prism, BLAST, NEBCutter, R, Bash, Microsoft Office

Language: Spanish (limited working proficiency)

Please contact jvecchi2@nd.edu for reference contact information.