CAMERON YOUNG

young.cam@northeastern.edu (617) 640-1335 www.linkedin.com/in/camyoung54/

EDUCATION

May 2022	B.S. in Chemical Engineering and Biochemistry, Northeastern University, Boston, MA (expected) **GPA: 3.96**
June 2017	High School Diploma, Medfield High School, Medfield, MA

AWARDS

2022	Winston Churchill Foundation of the United States – Churchill Scholar ($60,000)
2021	Barry Goldwater Excellence in Education Foundation – Goldwater Scholar ($7,500)
2020	Department of Chemical Engineering Outstanding Leadership Award
2019	Department of Chemical Engineering Outstanding Sophomore
2019	Best Poster Presentation – Engineering, Mathematics, and Applied Sciences, National Collegiate Research Conference, Harvard University ($500)
2019	Northeastern University, Office of Undergraduate Research and Fellowships, Undergraduate Research and Creative Endeavor (UGRCE) Award ($1,000)
2018	Northeastern University, Honor's Program, Early Research Award ($1,000)
2017	Northeastern University Honors Scholarship
2017	Honor's Essayist and Commencement Speaker, Medfield High School

RESEARCH EXPERIENCE

Randolph Lab of Boston Children's Hospital
Full-time Clinical Research Assistant June 2020 – Present
Advisor: Dr. Adrienne G. Randolph

- Facilitated a nationwide CDC-funded public health surveillance registry (Overcoming COVID-19) to characterize and track demographics, symptoms, complications, and clinical characteristics associated with COVID-19-related illness in children and adolescents as part of a full-time co-op experience
- Redefined the diagnosis and treatment of Multisystem Inflammatory Syndrome in Children (MIS-C) through careful prospective and retrospective analysis of patient data and application of clinical knowledge
- Performed epidemiological and statistical analyses using adjusted regression models, propensity score matching, and clustering algorithms on a database of over 2,000 patients to help physicians and public health officials better identify, diagnose, and treat COVID-19-related illness in children

Langer and Traverso Labs of MIT and Brigham and Women's Hospital
Full-time Clinical Research Assistant in Radiation Oncology July 2019 – September 2020
Advisors: Dr. James D. Byrne, Dr. C. Giovanni Traverso, Dr. Robert S. Langer

- Developed a novel class of personalized radioprotective devices for mitigating healthy tissue damage in cancer patients as part of a full-time co-op experience
- Manufactured and 3D printed customized drug delivery systems for localized delivery and expression of radiation damage suppressing mRNA in various tissues
- Analyzed patient genetic information from whole genome sequencing and medical records to establish associations between single nucleotide polymorphisms and risk of radiation induced toxicities using machine learning models
- Identified previously undiscovered drug-drug interactions in the gastrointestinal tract using a Python-based machine learning model, validated by patient data

Northeastern University Molecular Bioelectrostatics and Drug Delivery Laboratory
Undergraduate Research Fellow January 2018 – Present
Advisor: Dr. Ambika G. Bajpayee

- Identified the role of advanced glycation end-products (AGEs) in age-related osteoarthritis (OA) progression and determined targeted drug treatments to reverse negative OA tissue properties
- Created an accurate *in vitro* model of age-related osteoarthritis through biochemical and biomechanical tissue manipulation
- Developed novel assays and tissue characterization techniques based on relevant literature review and methodical independent experimental design

Northeastern University Advanced Mixed Signal and Integrated Circuit Laboratory
Summer Internship Participant June 2016 – August 2016
Advisor: Dr. Marvin Onabajo

- Constructed an automatic calibration system for a portable brain signal measuring device
- Learned Arduino coding, advanced breadboard wiring, oscilloscope and signal generator operation, conduct in a research environment, and poster and presentation skills

PUBLICATIONS

Peer-Reviewed Publications

1. **Young, C.C.**, Byrne, J. D., Wentworth, A. J., Collins, J. E., Chu, J. N., Traverso, G (2022). Respirators in Healthcare: Material, Design, Regulatory, Environmental, and Economic Considerations for Clinical Efficacy. doi: 10.1002/gch2.202200001
2. Schuster, J. E., Halasa, N. B., Nakamura, M., Levy, E. R., Fitzgerald, J. C., **Young, C. C.**, Newhams, M. M., Bourgeois, F., Staat, M. A., Hobbs, C. V., Dapul, H., Feldstein, L. R., Jackson, A. M., Mack, E. H., Walker, T. C., Maddux, A. B., Spinella, P. C., Loftis, L. L., Kong, M., Rowan, C. M., Bembea, M. M., McLaughlin, G. E., Hall, M. W., Babbitt, C. J., Maamari, M., Zinter, M. S., Cvijanovich, N. Z., Michelson, K. N., Gertz, S. J., Carroll, C. L., Thomas, N. J., Giuliano, J. S., Singh, A. R., Hymes, S. R., Schwarz, A. J., McGuire, J. K., Nofziger, R. A., Flori, H. R., Clouser, K. N., Wellnitz, K., Cullimore, M. L., Hume, J. R., Patel, M., Randolph, A. G., & the Overcoming COVID-19 Investigators (2022). A Description of COVID-19-Directed Therapy in Children Admitted to US Intensive Care Units 2020. *J Pediatric Infect Dis Soc*. doi: 10.1093/jpids/piab123
3. Hobbs, C. V., Woodworth, K., **Young, C. C.**, Jackson, A. M., Newhams, M. M., Dapul, H., Maamari, M., Hall, M. W., Maddux, A. B., Singh, A. R., Schuster, J. E., Rowan, C. M., Fitzgerald, J. C., Irby, K., Kong, M., Mack, E. H., Staat, M. A., Cvijanovich, N. Z., Bembea, M. M., Coates, B. M., Halasa, N. B., Walker, T. C., McLaughlin, G. E., Babbitt, C. J., Nofziger, R. A., Loftis, L. L., Bradford, T. T., Campbell, A. P., Patel, M. M., Randolph, A. G., & the Overcoming COVID-19 Investigators (2021). Frequency, Characteristics and Complications of COVID-19 in Hospitalized Infants. *Pediatr Infect Dis J*. doi: 10.1097/INF.0000000000003435
4. Geva, A., Patel, M. M., Newhams, M. M., **Young, C. C.**, Son, M. B. F., Kong, M., Maddux, A. B., Hall, M. W., Riggs, B. J., Singh, A. R., Giuliano, J. S., Hobbs, C. V., Loftis, L. L., McLaughlin, G. E., Schwartz, S. P., Schuster, J. E., Babbitt, C. J., Halasa, N. B., Gertz, S. J., Doymaz, S., Hume, J. R., Bradford, T. T., Irby, K., Carroll, C. L., McGuire, J. K., Tarquinio, K. M., Rowan, C. M., Mack, E. H., Cvijanovich, N. Z., Fitzgerald, J. C., Spinella, P. C., Staat, M. A., Clouser, K. N., Soma, V. L., Dapul, H., Maamari, M., Bowens, C., Havlin, K. M., Mourani, P. M., Heidemann, S. M., Horwitz, S. M., Feldstein, L. R., Tenforde, M. W., Newburger, J. W., Mandl, K. D., Randolph, A. G., & the Overcoming COVID-19 Investigators (2021). Data-driven Clustering Identifies Features Distinguishing Multisystem Inflammatory Syndrome from Acute COVID-19 in Children and Adolescents. *EClinicalMedicine*. doi: 10.1016/j.eclinm.2021.101112.

5. Son, M. B. F., Murray, N., Friedman, K., **Young, C. C.**, Newhams, M. M., Feldstein, L. R., Loftis, L. L., Tarquinio, K. M., Singh, A. R., Heidemann, S. M., Soma, V. L., Riggs, B. J., Fitzgerald, J. C., Kong, M., Doymaz, S., Giuliano, J. S., Jr., Keenaghan, M. A., Hume, J. R., Hobbs, C. V., Schuster, J. E., Clouser, K. N., Hall, M. W., Smith, L. S., Horwitz, S. M., Schwartz, S. P., Irby, K., Bradford, T. T., Maddux, A. B., Babbitt, C. J., Rowan, C. M., McLaughlin, G. E., Yager, P. H., Maamari, M., Mack, E. H., Carroll, C. L., Montgomery, V. L., Halasa, N. B., Cvijanovich, N. Z., Coates, B. M., Rose, C. E., Newburger, J. W., Patel, M. M., Randolph, A. G., & the Overcoming COVID-19 Investigators (2021). Multisystem Inflammatory Syndrome in Children - Initial Therapy and Outcomes. *N Engl J Med, 385*(1), 23-34. doi:10.1056/NEJMoa2102605
6. Byrne, J. D., **Young, C. C.**, Chu, J. N., Pursley, J., Chen, M. X., Wentworth, A. J., Feng, A., Kirtane, A. R., Remillard, K. A., Hancox, C. I., Bhagwat, M. S., Machado, N., Hua, T., Tamang, S. M., Collins, J. E., Ishida, K., Hayward, A., Becker, S. L., Edgington, S. K., Schoenfeld, J. D., Jeck, W. R., Hur, C., & Traverso, G. (2021). Personalized Radiation Attenuating Materials for Gastrointestinal Mucosal Protection. *Adv Sci*, 8(12), 2100510. doi:10.1002/advs.202100510
7. LaRovere, K. L., Riggs, B. J., Poussaint, T. Y., **Young, C. C.**, Newhams, M. M., Maamari, M., Walker, T. C., Singh, A. R., Dapul, H., Hobbs, C. V., McLaughlin, G. E., Son, M. B. F., Maddux, A. B., Clouser, K. N., Rowan, C. M., McGuire, J. K., Fitzgerald, J. C., Gertz, S. J., Shein, S. L., Munoz, A. C., Thomas, N. J., Irby, K., Levy, E. R., Staat, M. A., Tenforde, M. W., Feldstein, L. R., Halasa, N. B., Giuliano, J. S., Jr., Hall, M. W., Kong, M., Carroll, C. L., Schuster, J. E., Doymaz, S., Loftis, L. L., Tarquinio, K. M., Babbitt, C. J., Nofziger, R. A., Kleinman, L. C., Keenaghan, M. A., Cvijanovich, N. Z., Spinella, P. C., Hume, J. R., Wellnitz, K., Mack, E. H., Michelson, K. N., Flori, H. R., Patel, M. M., Randolph, A. G., & the Overcoming COVID-19 Investigators (2021). Neurologic Involvement in Children and Adolescents Hospitalized in the United States for COVID-19 or Multisystem Inflammatory Syndrome. *JAMA Neurol, 78*(5), 536-547. doi:10.1001/jamaneurol.2021.0504
8. Feldstein, L. R., Tenforde, M. W., Friedman, K. G., Newhams, M., Rose, E. B., Dapul, H., Soma, V. L., Maddux, A. B., Mourani, P. M., Bowens, C., Maamari, M., Hall, M. W., Riggs, B. J., Giuliano, J. S., Jr., Singh, A. R., Li, S., Kong, M., Schuster, J. E., McLaughlin, G. E., Schwartz, S. P., Walker, T. C., Loftis, L. L., Hobbs, C. V., Halasa, N. B., Doymaz, S., Babbitt, C. J., Hume, J. R., Gertz, S. J., Irby, K., Clouser, K. N., Cvijanovich, N. Z., Bradford, T. T., Smith, L. S., Heidemann, S. M., Zackai, S. P., Wellnitz, K., Nofziger, R. A., Horwitz, S. M., Carroll, R. W., Rowan, C. M., Tarquinio, K. M., Mack, E. H., Fitzgerald, J. C., Coates, B. M., Jackson, A. M., **Young, C. C.**, Son, M. B. F., Patel, M. M., Newburger, J. W., Randolph, A. G., & the Overcoming COVID-19 Investigators (2021). Characteristics and Outcomes of US Children and Adolescents with Multisystem Inflammatory Syndrome in Children (MIS-C) Compared with Severe Acute COVID-19. *JAMA, 325*(11), 1074-1087. doi:10.1001/jama.2021.2091
9. Mehta, S., **Young, C. C.**, Warren, M. R., Akhtar, S., Shefelbine, S. J., Crane, J. D., & Bajpayee, A. G. (2021). Resveratrol and Curcumin Attenuate Ex Vivo Sugar-Induced Cartilage Glycation, Stiffening, Senescence, and Degeneration. *Cartilage*, 1947603520988768. doi:10.1177/1947603520988768
10. **Young, C. C.**, Vedadghavami, A., & Bajpayee, A. G. (2020). Bioelectricity for Drug Delivery: The Promise of Cationic Therapeutics. *Bioelectricity*, 2(2), 68-81. doi:10.1089/bioe.2020.0012

Non-Peer-Reviewed Publications

1. Byrne, J. D., Shakur, R., Collins, J. E., Becker, S., **Young, C. C.**, Boyce, H., & Traverso, G. (2020). Prophylaxis with Tetracyclines in ARDS: Potential Therapy for COVID-19-induced ARDS? *medRxiv*. doi:10.1101/2020.07.22.20154542

CONFERENCE PRESENTATIONS

1. Boyce H., **Young C.C.**, Wawer K. "How to Run a Career Meeting: Interview Preparation, Resume Review, and LinkedIn Help," *2021 Virtual AIChE Annual Meeting*; 2020 November 13; Virtual.
2. Byrne J.D., **Young C.C.**, Pursley J., Remilard K., Edgington S., Schoenfeld J.D., Traverso G. "Personalized radiation attenuating materials for mucosal protection," *American Physical Society*; 2020 March 2; Denver, CO.

3. **Young C.C.**, Mehta S., Warren M., Bajpayee A.G. "Role of Advanced Glycation End Products in Age Related Osteoarthritis," *American Society of Biochemistry and Molecular Biology Northeast Regional Meeting*; 2019 November 3; Boston, MA.
4. **Young C.C.**, Mehta S., Warren M., Bajpayee A.G. "Role of Advanced Glycation End Products in Age Related Osteoarthritis," *Northeastern University Research, Innovation and Scholarship Expo*; 2019 April 4; Boston, MA.
5. **Young C.C.**, Mehta S., Warren M., Bajpayee A.G. "Role of Advanced Glycation End Products in Age Related Osteoarthritis," *Harvard University National Collegiate Research Conference*; 2019 January 24-26; Cambridge, MA.

VOLUNTEER EXPERIENCE

Boston Children's Hospital
Inpatient Volunteer and New Volunteer Trainer — June 2018 – Present
- Dedicated over 300 hours of volunteering in the General Medicine and Complex Care Unit and facilitating new volunteer training
- Interacted with patients and families to provide games, activities, food, and other items, either at bedside or in Activity Room to create a friendly and welcoming environment for all at the hospital
- Assisted staff in comforting and distracting patients, running errands, and cleaning
- Gained meaningful insight into the perspective of both medical professionals and patients in the hospital setting

Boston Public Health Commission
Emergency Clinical Volunteer — April 2020 – June 2020
- Provided hands-on medical support at an emergency homeless shelter in Boston in response to the COVID-19 pandemic for 24 hours per week according to the EMT scope of practice
- Assessed residents' conditions, monitored chronic illnesses, and ensured access to prescribed medications, as primary on-site medical provider for 80 residents

WORK EXPERIENCE

Hinkley Pond, Medfield, MA
Head Lifeguard — Summers 2015 – 2018
- Managed team of 25 lifeguards, created schedules, assessed employees' performance, and executed disciplinary action
- Tasked with opening and closing beach area, water testing, and member conflict resolution

Various Soccer Leagues in the Greater Boston Area
Grade 8 Soccer Referee — September 2012 – May 2018
- Referee for various leagues in the Boston Area: Boston Area Youth Soccer (BAYS), Northeast Soccer League (NSL), and New England Premiership (NEP)
- Selected to referee in several high-level tournaments including Needham Memorial Day Tournament, Massachusetts State Cup, and Massachusetts Tournament of Champions
- Young Referee of the Tournament, Needham Memorial Day Tournament, 2018
- Honorable Mention, Massachusetts State Referee Committee's award for Young Referee of the Year, 2017

PROFESSIONAL SKILLS

Laboratory: Cell and Tissue Culture, Biochemical Assay Development, HPLC, Centrifugation, Tissue Homogenization, Confocal Microscopy, Western Blotting, Tissue Dissection, Small Animal Handling, Media Preparation, Data Analysis, Literature Review, Figure Preparation, Grant and Manuscript Writing
Mechanical: 3D Printing, Soldering, Silicone Molding, Metal Casting, Milling

Software Knowledge: SolidWorks, AutoCAD, MATLAB, ImageJ, Meshmixer, PreForm, Epic EMR, PowerChart EMR, REDCap, Microsoft Excel, Microsoft PowerPoint
Programming Languages: R, Python, C++, HTML, CSS, Arduino

COURSE WORK

GPA: 3.96
Capstone II: Process Design Capstone I: Design and Process Analysis, Biochemistry & Lab, Bioanalytical Chemistry & Lab, Kinetics, Process Control, Chemical Engineering Design Lab I & II, Thermodynamics I, Thermodynamics II, Transport Processes I, Transport Processes II, Conservation Principles, Introduction to the Spectroscopy of Organic Compounds & Lab, Organic Chemistry I & Lab, Organic Chemistry II & Lab, Microbiology & Lab, Genetics and Molecular Biology & Lab, Physics I & Lab, Physics II & Lab, Advanced Writing in the Technical Disciplines, General Chemistry for Engineers, Differential Equations and Linear Algebra, Biostatistics & Lab, Calculus III, Cornerstone of Engineering I & II, First Year Writing, Emergency Medical Technician Training, Foundations of Coordinated Patient Care

CAMPUS INVOLVEMENT

American Institute of Chemical Engineers, Northeastern Student Chapter
Treasurer (August 2020 – Present)
President (August 2019 – August 2020)
Webmaster and E-Board Member (August 2018 – August 2019)
STEM Committee Member (September 2017 – August 2018)

College of Engineering
Peer Mentor and Tutor (September 2018 – Present)

Interfraternity Council
Director of Recruitment (December 2019 – December 2020)

International Society of Pharmaceutical Engineers, Northeastern Student Chapter
Member (September 2017 – Present)

Northeastern Science Magazine
Staff Writer (September 2018 – May 2019)

Omega Xi Epsilon – Chemical Engineering Honor Society
Member and Peer Mentor (September 2020 – Present)

Sigma Xi – Scientific Research Honor Society
Scholarship Chair (January 2022 – Present)
Research Immerse Program Peer Mentor (September 2020 – Present)
Associate Member and Peer Mentor (September 2020 – Present)

Tau Beta Pi – Engineering Honor Society
Member (November 2019 – Present)