Ande Marini, Ph.D.

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Education

Doctor of Philosophy in Bioengineering (Defended Nov 11, 2024) Graduation: May 2025

- **University of Pittsburgh**, Pittsburgh, PA GPA: 3.927
- Tissue Engineering and Regenerative Medicine Track

Bachelor of Science in Engineering Science and Biology May 2018

- **Saint Vincent College**, Latrobe, PA GPA: 3.963
- Minor: Mathematics

Grants (Fellowships) Awarded

Grant name or #	Source	Dates	Award Amount
F31 HL164082	NIH	Sept 2023 – Dec 2024	$143,082
23PRE 1019551	AHA	Jan 2023 – Sept 2023	$65,106
Berenfield Fellowship	University of Pittsburgh, Department of Bioengineering	Sept 2022 – Dec 2022	$33,000
Cardiovascular Bioengineering Training Program T32 Training Grant	University of Pittsburgh, Department of Bioengineering	Sept 2020 – Aug 2022	$51,156
Bevier Fellowship	University of Pittsburgh, Department of Bioengineering	Sept 2019 – Aug 2020	$30,000

Awards

Award name	Organization	Date	Award Amount
Travel Award	Biomedical Engineering Society, University of Pittsburgh Graduate Chapter	Nov 2024	$300
Travel Award	Graduate and Professional Student Government, University of Pittsburgh	Nov 2024	$400

Best Poster, BioE Day	Biomedical Engineering Society, University of Pittsburgh Graduate Chapter	Apr 2024	$50
Travel Award for 2023 Biennial Meeting	American Society for Matrix Biology	Aug 2023	$750
Leadership and Service Award	Graduate and Professional Student Government, University of Pittsburgh	Mar 2023	$250
Travel Award	Graduate and Professional Student Government, University of Pittsburgh	Oct 2022	$400
3rd Place Poster Award, 18th Biennial Meeting	International Society for Applied Cardiovascular Biology	Oct 2022	$250
Catalyze Early Career Scientist Award	NIH - NHLBI	Sept 2022	$600
Bevier Award	University of Pittsburgh, Department of Bioengineering	Sept 2019	$1000
Best paper in Science and Engineering Category for Region VI	Alpha Chi, Region VI	Apr 2019	$500
Wimmer Scholar (full tuition scholarship)	Saint Vincent College	Aug 2014 – May 2018	$120,000

Honors

- Three Minute Thesis Runner Up, University of Pittsburgh — Apr 2024
- Three Minute Thesis Finalist, Swanson School of Engineering, University of Pittsburgh — Mar 2024
- Graduated Summa Cum Laude, Saint Vincent College — May 2018
- Graduate of the Honors Program, Saint Vincent College — May 2018
- Academic Excellence Award for Engineering Science, Saint Vincent College — Apr 2018
- Davis Award (for extraordinary service), Alpha Chi Region VI — Apr 2018
- Leadership and Service Award, Saint Vincent College — Dec 2017
- Dean's List, Saint Vincent College — Aug 2014 – May 2018

Research & Work Experience

- Postdoctoral Scholar — Jan 2025 – Present

  Optimize parameters of constructs for prevention of lymphedema and investigate effects of extracellular matrix on lipedema derived adipose stem cells cells

  Advisor: Ngan Huang, Associate Professor of Cardiothoracic Surgery

  Department of Cardiothoracic Surgery, **Stanford University**, Palo Alto, CA

- Ruth L. Kirschstein Predoctoral Fellow Jun 2019 – Dec 2024

  Developed a magnetic microparticle delivery system of extracellular vesicles for localized abdominal aortic aneurysm repair

  Dissertation title: “Attractive” Treatment for Abdominal Aortic Aneurysm: Magnetic Localization of Silk-Iron Packaged Extracellular Vesicles, defended on Nov 11, 2024

  Advisor: Justin Weinbaum, Research Assistant Professor

  Co-Advisor: David Vorp, Senior Associate Dean for Research & Facilities

  Department of Bioengineering, **University of Pittsburgh**, Pittsburgh, PA

- Research Assistant Nov 2018 – May 2019

  Screened, consented, and enrolled patients to participate in a CDC influenza study and NIH reduction of alcohol usage study (MATCH)

  Principal Investigators: Richard Zimmerman (Influenza study), Brian Suffoletto and Tammy Chung (MATCH)

  UPMC Emergency Medicine, Pittsburgh, PA

- Patient Liaison Aug 2017 – Jun 2018

  Communicated with nurses, technical partners, and dietary staff to cater to patient needs and improved patient satisfaction through surveys

  Manager: Laura Denner

  Excela Health, Latrobe, PA

- PFM REU Research Fellow May 2017 – Aug 2017

  Fabricated and analyzed release of stem cell conditioned media from poly(lactic-co-glycolic acid) microparticles for treatment of cardiovascular and ophthalmic diseases

  Advisor: Morgan DiLeo

  Department of Chemical and Petroleum Engineering, **University of Pittsburgh**, Pittsburgh, PA

- Student Research Assistant July 2015, May 2016 – Jul 2016

  Researched and analyzed the wrinkling of polydimethylsiloxane materials under an applied force to develop pressure-sensitive stamps with tunable wrinkled surfaces

  Advisor: Derek Breid

  Department of Engineering, **Saint Vincent College**, Latrobe, PA

Peer-Reviewed Podium Presentations

1. **Marini, A.**, Gueldner, P., Li, B., Rodriguez, B., Chung, T., Curci, J., Vorp, D., and Weinbaum, J., Topical Elastase Administration Decreases Elastin Content and Alters Mechanical Properties in an Abdominal Aortic Aneurysm Mouse Model. American Society for Matrix Biology Biennial Meeting, St. Louis, MO., September 2021
2. **Marini, A.**, Gueldner, P., Li, B., Darvish, C., Rodriguez, B., Chung, T., Weinbaum, J., Curci, J., and Vorp, D., Topical Elastase Administration Decreases Elastin and Collagen Content and Alters Mechanical Properties in an Abdominal Aortic Aneurysm Mouse Model. 9th World Congress of Biomechanics, Taipei, Taiwan, July 2022

3. **Marini A.**, Bruk, L., Gupta, P., Chaudhry, A., Mandal, B., DiLeo, M., Weinbaum, J., and Vorp, D., "Artificial Mesenchymal Stem Cells" fabricated from conditioned media enhance acute patency in silk-based vascular grafts. BioE Day, Pittsburgh, PA., April 2023
4. **Marini, A.**, Tomaraei, G., Weinbaum, J., Bedewy, M., and Vorp, D., Magnetic Extracellular Vesicle Delivery System for Matrix Synthesis for Abdominal Aortic Aneurysm Repair. Joint Biennial Meeting 2023 for American Society for Matrix Biology, Salt Lake City, UT, October 2023
5. **Marini, A.**, Tomaraei, G., Pellegrino, A., Weinbaum, J., Bedewy, M., and Vorp, D., "Attractive" Treatment for Abdominal Aortic Aneurysm Repair: Magnetic Localization of Silk-Iron Packaged Extracellular Vesicles. International Society of Applied Cardiovascular Biology 19th Biennial Meeting, Vienna, Austria, October 2024

Invited Presentations

1. **Marini, A.,** Regenerative Treatments for Abdominal Aortic Aneurysm. 21st McGowan Institute Scientific Retreat, Pittsburgh, PA, March 2022
2. Vorp, D., **Marini, A.**, Pellegrino, A., and Charles, K., Industry-University Partnership Accelerates MSC & Extracellular Vesicle Based Regenerative Medicine Applications. RoosterBio Webinar Series, November 2023 Link to summary

Additional Podium Presentations (also presented as Greco, A.)

1. Anderson, E., Dunchack, D., Farnan, J., and **Greco, A.**, Making Bag-Tying Easier. Saint Vincent College's Academic Conference, April 2017
2. **Greco, A.**, Bruk, L., and Fedorchak, M., Utilization of Polymer Microspheres for Controlled Release of Stem Cell Conditioned Media and Ciprofloxacin. University of Pittsburgh's PFM-REU, August 2017 and Alpha Chi National Convention, Portland, OR, April 2018

Peer-Reviewed Poster Presentations

1. **Marini, A.**, Cunnane, E., Ramaswamy, A., Lorentz, K., Vorp, D., and Weinbaum, J., Extracellular Vesicles Derived from Primary Adipose Stromal Cells Induce Elastin and Collagen Deposition by Smooth Muscle Cells within 3D Fibrin Gel Culture. American Society for Biochemistry and Molecular Biology Virtual Conference, "Extracellular Vesicle Studies from benchtop to therapeutics," July 2021
2. **Marini, A.**, Gueldner, P., Li, B., Rodriguez, B., Chung, T., Curci, J., Vorp, D., and Weinbaum, J., Topical Elastase Administration Decreases Elastin Content and Alters Mechanical Properties in an Abdominal Aortic Aneurysm Mouse Model. American Society for Matrix Biology Biennial Meeting, St. Louis, MO., September 2021
3. Zheng, J.**, **Marini, A.**, Chung, T., Curci, J., Weinbaum, J., and Vorp, D., Magnetic Guidance of Adipose-derived Mesenchymal Stem Cells (ADMSCs) Using Iron Nanoparticles. Biomedical Engineering Society Annual Meeting, Orlando, FL., October 2021
4. Wang, M.**, **Marini, A.**, Weinbaum, J., and Vorp, D., Studying Insulin-Induced PAI-1 Expression in VSMCs Mimicking Type 2 Diabetes. Biomedical Engineering Society Annual Meeting, Orlando, FL., October 2021
5. **Marini, A.**, Gueldner, P., Li, B., Darvish, C., Rodriguez, B., Chung, T., Weinbaum, J., Curci, J., and Vorp, D., Topical Elastase Administration and β-aminopropionitrile (BAPN) Decrease Elastin and Collagen Content and Alters Mechanical Properties in an Abdominal Aortic Aneurysm Mouse Model. 21st McGowan Institute Scientific Retreat, Pittsburgh, PA., March 2022, BioE Day, Pittsburgh, PA., March 2022, and AHA Fellows Day, Pittsburgh, PA., May 2022

6. **Marini, A.**, Lorentz, K., Bruk, L., Gupta, P., Chaudhry, A., Charles, K., Pellegrino, A., Mandal, B., DiLeo, M., Weinbaum, J., and Vorp, D., Seeded microparticles containing adipose-derived stem cell conditioned media enhance acute patency in silk-based vascular grafts. International Society of Applied Cardiovascular Biology 18th Biennial Meeting, Memphis, TN., September-October 2022, won 3rd place in the Poster Competition
7. Lorentz, K., **Marini A.**, Bruk, L., Gupta, P., Chaudhry, A., Mandal, B., DiLeo, M., Weinbaum, J., and Vorp, D., "Artificial Mesenchymal Stem Cells" fabricated from conditioned media enhance acute patency in silk-based vascular grafts. 22nd McGowan Institute Scientific Retreat, Pittsburgh, PA., March 2023
8. **Marini, A.**, Tomaraei, G., Weinbaum, J., Bedewy, M., and Vorp, D., Magnetic extracellular vesicle delivery system for stimulating elastin synthesis. 3rd Meeting of the American Society for Intercellular Communication, Potomac, MD, October 2023
9. Lee, J.**, **Marini, A.**, Vorp, D., and Weinbaum, J., Exploring the effect of extracellular vesicles on matrix metalloproteinases in aortic smooth muscle cells. 2023 Biomedical Engineering Society Annual Meeting, Seattle, WA, October 2023, won 2nd place in the High School Poster Competition
10. **Marini, A.**, Tomaraei, G., Weinbaum, J., Bedewy, M., and Vorp, D., Magnetic Extracellular Vesicle Delivery System for Matrix Synthesis for Abdominal Aortic Aneurysm Repair. Joint Biennial Meeting 2023 for American Society for Matrix Biology, Salt Lake City, UT, October 2023, and BioE Day, Pittsburgh, PA, April 2024, won best poster at BioE Day Poster Competition
11. Pellegrino, A., **Marini, A.**, Charles, K., Gau, D., Weinbaum, J., and Vorp, D. Improvement of Extracellular Vesicle Yield via Tangential Flow Filtration for Commercialization of Tissue Engineered Vascular Grafts. BioE Day, Pittsburgh, PA, April 2024

**Indicates undergraduate or high school student I advised

Additional Poster Presentations (also presented as Greco, A.)

1. **Greco, A.**, Bruk, L., and Fedorchak, M., Utilization of Polymer Microspheres for Controlled Release of Stem Cell Conditioned Media and Ciprofloxacin. Duquesne University's Summer Research Symposium, July 2017
2. **Greco, A.,** Bethke, B., and Breid, D., The Influence of the Physical Microenvironment and Soluble Indian Hedgehog on the Differentiation of Human Mesenchymal Stem Cells (hMSCs). Saint Vincent College's Academic Conference, April 2018, Alpha Chi National Convention, Cleveland, OH, April 2019, and best paper at Alpha Chi National Convention, Cleveland, OH, April 2019

Peer-Reviewed Journal Articles

1. Gueldner, P.*, **Marini, A.***, Li, B., Darvish, C., Chung, T., Weinbaum, J., Curci, J., and Vorp, D., Mechanical and matrix effects of short and long-duration exposure to beta-aminopropionitrile in elastase-induced model abdominal aortic aneurysm in mice. *JVS-Vascular Science,* 4, (2023)
2. Lorentz, K.*, **Marini, A.***, Bruk, L., Gupta, P., Mandal, B., DiLeo, M., Weinbaum, J., Little, S., and Vorp, D., Mesenchymal Stem Cell-Conditioned Media-Loaded Microparticles Enhance Acute Patency in Silk-Based Vascular Grafts. *Bioengineering,* 11, (2024)
3. **Marini, A.***, Tomaraei, G.*, Weinbaum, J., Bedewy, M., and Vorp, D., Chemical Conjugation of Iron Oxide Nanoparticles for the Development of Magnetically Directable Silk Particles. *ACS Applied Materials & Interfaces*, 17, (2025)

*Indicates shared first authorship

Intellectual Property and Patents

1. **Marini, A.,** Bedewy, M., Tomaraei, G., Ramaswamy, A., Vorp, D., Weinbaum, J., Silk Particles for use in Tissue Engineering, and Related Methods, provisional application to the US patent office (Serial No. 63/535,695).

Research Mentoring (*** indicates underrepresented minority)

- Undergraduate Students, Stanford University
  - Precious Vann***
- Undergraduate Students, University of Pittsburgh
  - Annalise Barnes
  - Jason Zheng (B.S. 2021)
    - SSOE Summer Research Fellowship
  - Anna Kelly (B.S. 2022)***
  - Michelle Wang (B.S. 2022)
    - SSOE Summer Research Fellowship
  - Maria Montoya Orozco (B.S. 2023)***
- High School Students, University of Pittsburgh
  - Jade Lee (2023)
    - Hillman Academy Scholar

Teaching Experience

- Teaching Assistant, University of Pittsburgh — Jan 2021 – Apr 2021

  BIOENG 1241: “Societal, Political, and Ethical Issues” – Arash Mahboobin, Ph.D

  Attended weekly lectures, assisted with in-class assignments, fabricated a rubric for grading homework assignments, and taught a lecture about the ethics associated with IACUC guidelines

- Teaching Assistant, University of Pittsburgh — Aug 2021 – Dec 2021

  BIOENG 1051: “Artificial Organs” – Harvey Borovetz, Ph.D

  Organized group meeting times, graded midterms, and provided feedback on midterm and final projects

- Mathematics Tutor, Saint Vincent College — Jan 2017 – May 2018

  Assisted students with math concepts in Elementary Functions (MA104), Calculus 1 – 3 (MA111-113), Differential Equations (MA114), Linear Algebra (MA115), and Probability and Statistics (MA208)

- Engineering Tutor, Saint Vincent College — Aug 2017 – Dec 2017

  Assisted students taking Statics (ENGR223) and Thermodynamics (ENGR310) by explaining concepts such as force balance problems (Statics) and energy balance problems (Thermodynamics)

- Collaborative Learning Program Facilitator, Saint Vincent College — Aug 2015 – Dec 2017

  Developed worksheets weekly that correlated with class material, met weekly with the professor to discuss potential misconceptions in class, and held a weekly review session for students

Classes: General Chemistry 1 (CH101, Fall 2015), Calculus 2 (MA112, Spring 2016 and 2017), and Calculus 3 (MA113, Fall 2017)

- Physics Tutor, Saint Vincent College — Jan 2017 – May 2017

  Assisted students with physics concepts regarding circuits, electricity, and magnetism twice per week to students taking General Physics 2 (PH112)

- Opportunity Program Math Tutor, Saint Vincent College — Jul 2015 – Aug 2015

  Taught precalculus and elementary functions (MA104) concepts to approximately 20 incoming freshmen in Saint Vincent College's Summer opportunity program

Leadership Experience

- International Society for Applied Cardiovascular Biology (ISACB) — Jan 2023 – Present
  - **Member of the Young Investigators Committee** — Jan 2023 – Present
    - Organize events specifically for early career members (e.g. graduate student, postdoctoral members, junior faculty, etc)
    - Work with council to plan early career activities at biennial meetings
    - Facilitate webinars to give advice for early career members (e.g. fellowship applications, start ups, industry vs. academia, etc)
    - Moderate early career sessions and panels
- Graduate and Professional Student Government (GPSG), University of Pittsburgh — Jan 2023 – Apr 2023
  - **Member of the Programming Committee** — Jan 2023 – Apr 2023
    - Organized various programming events for the University of Pittsburgh Graduate and Professional Student Community under the VP of Programming
    - Events included social events such as happy hours, professional development events, and Graduate and Professional Student Appreciation week events
    - Assisted during the events and helped create flyers for advertising on social media
- Engineering Graduate Student Organization (EGSO), University of Pittsburgh — Jul 2020 – Jun 2023
  - **President** — Jul 2022 – Jun 2023
    - Led organization that oversees all engineering graduate students
    - Worked with a board of 10 officers and 6 department representatives to develop and plan social events, professional development workshops, international cultural celebrations, and service/outreach initiatives to facilitate a diverse and collaborative environment
    - Interviewed candidates for the executive board and evaluated progress of the organization
    - Met with faculty advisor (Associate Dean of Graduate Education) on a monthly basis to ensure good communication between all engineering students and administration of the Swanson School of Engineering
    - Attended monthly Assembly Board Meetings hosted by GPSG and communicated ongoing issues and events with other student organizations
    - Led discussion with other organizations to assess current graduate stipends and compare them to other R1 universities

- Discussed with incoming president formation of two new ambassador roles to better encompasses and serve all engineering graduate organizations (International Engineering Student Organization and Graduate Women Engineering Network)

  - **Bioengineering Department Representative** Jul 2020 – Jun 2022
    - Communicated the current events of the Biomedical Engineering Society to the EGSO board for coordination between the two organizations
    - Gathered nominations for graduate teaching assistant and research assistant awards

- Outreach and Communication Committee, American Society for Matrix Biology Sept 2021 – Present
  - **Member and Social Media Coordinator** Sept 2021 – Present
    - Maintain a social media presence through Twitter and Instagram (created this account)
    - Post and advertise a variety of events for members of the organization (social media campaigns including a diversity campaign and women in STEM campaign (led 2023 and currently leading 2024 initiative), and ongoing events hosted by the entire organization)
    - Create graphics and designs for various social media posts to advertise events
    - Assisted with hybrid biennial meeting in 2021 by ensuring virtual speakers and participants had access to the conference sessions by working with the WHOVA platform
    - Co-moderated an e-symposium showcasing research of the ASMB image contest awardees (June 2023)

- Graduate Biomedical Engineering Society (BMES), University of Pittsburgh Nov 2019 – Present
  - **DEIA Committee member** Oct 2023 – Present
    - Work with DEIA Committee Chair (board member of BMES) to improve the BioE Department culture for students from a variety of different backgrounds
    - Assist with recruitment weekend DEIA session for incoming students
    - Meet regularly to discuss events related to DEIA
  - **President** Jul 2021 – Jun 2022
    - Led Graduate BMES by planning and approving events (including outreach events such as BioBots), running and organizing meetings with the board, Department Administration, and faculty, working with all members of the board for different committees of BMES
    - Organized, in collaboration with the Director of PhD Admissions, the Bioengineering Department's annual PhD Recruitment Weekend
    - Organized Orientation events for students to learn about BMES and upcoming events
    - Worked with the Vice President and Undergraduate BMES to plan BioE Day, a day where students can present their research internally
    - Met semesterly with BMES Faculty Advisor to ensure good communication between Bioengineering students and administration
    - Hosted and organized semesterly meetings with the Bioengineering administration to hear thoughts from the student body regarding current issues and ways we can improve
    - Gathered student information for a bi-annual survey regarding the graduate student experience in Pitt's Bioengineering Department and presented the information at the Biennial Faculty Retreat
  - **Vice President** Jul 2020 – Jun 2021

- Assisted the president with running Graduate BMES, coordinating events, communicating with Department Administration, and acting as a voice for the Bioengineering Student Body
- Worked with Pitt's Bioengineering Department's Director of PhD Admissions to plan the Bioengineering Department's first completely virtual recruitment weekend via WHOVA
- Worked with Pitt's Bioengineering Department and CMU's Biomedical Engineering Department to plan Northeast Bioengineering Conference (NEBEC) virtually through the WHOVA platform
- Organized student events of the first virtual McGowan Retreat

o **First year representative** Nov 2019 – Jun 2020

- Acted as a liaison between BMES, the first-year graduate students for 2019, and the Bioengineering Department
- Worked with other first year representative and Graduate Coordinator to adapt the preliminary exam abstract submission for the COVID-19 pandemic
- Worked as a co-first year representative to host events for studying and socializing

- Alpha Chi National College Honor Society Sept 2016 – Apr 2022

o Student Representative for Region VI Apr 2018 – Apr 2022

- Served as a member of the National Council to run the society and plan a national annual convention including contacting convention speakers, coordinating convention events, and planning and implementing a service project (one with Reading is Fundamental)
- Communicated with Region VI and other members of Alpha Chi to implement new means of improving Alpha Chi by receiving feedback from different chapters, and assessed and approved the finances of the society
- Served on the Membership Committee and Convention Planning Committee
- Voted on annual budget for the society and created initiatives to improve membership in the society

o President of Pennsylvania Nu Chapter, Saint Vincent College Sept 2016 – Apr 2018

- Discussed annual plans of Alpha Chi with faculty advisor regarding upcoming events and attendance at the annual convention
- Organized and hosted annual induction ceremony to welcome new members to the honor society
- Collaborated with other organizations to plan social and outreach events

- Residence Life, Saint Vincent College Aug 2016 – May 2018

o Prefect (Resident Assistant) Aug 2016 – May 2018

- Maintained pod or floor of upperclassmen, maximum of 20 residents per pod/floor
- Trained in conflict resolution, diversity issues, academic development, CPR, and provided mental health resources for all student residents
- Organized catering and social events to promote student community and enforced college policies when necessary
- Coordinated a minimum of 25 programs per semester to incorporate the Benedictine Hallmarks established by Saint Vincent College and promote community among the residents

- Engineering Club, Saint Vincent College – Oct 2014 – May 2018

o Founder (October 2014) and President (October 2014 – May 2017):

- Established an engineering club to promote teamwork and community for the newly developed Engineering Science Program
- Organized at least 2 guided tours to local engineering facilities per year to give students the opportunity to network and learn about the engineering profession
- Managed club budget and led club meetings
- Planned and coordinated with faculty and staff to host an annual local pasta bridge competition for high school students
- Coordinated events for the club including study groups, social events, and competitions for Pi Day

Service Work

- Women in STEM Panelist, Saint Vincent College — Mar 2024
  - Invited to speak as one of 6 women in STEM alumni from Saint Vincent regarding experience as women in STEM
  - Answered Q&A regarding research, journey, career, day to day tasks
  - Gave advice to current undergraduate students based on my journey and experience
- Biobots Volunteer, University of Pittsburgh — Jun 2022 – Sept 2023
  - Taught bioengineering concepts to elementary aged students from underrepresented backgrounds and underserved communities at the University of Pittsburgh's Community Engagement Center
  - Planned weekly lessons with ~10 other bioengineering graduate students
- BMES Peer Mentor, University of Pittsburgh — Sept 2021 – Feb 2022
  - Co-led a group of 5 first year Bioengineering PhD and Masters students
  - Facilitated conversation and advice regarding navigating graduate school
  - Met monthly to build community, learn about each other, and provide suggestions for success
- Graduate Women Engineering Network Peer Mentor, University of Pittsburgh — Sept 2020 – Present
  - Started leading a group in Oct 2021 and still lead a group for this academic year (2023-2024); led by facilitating conversation and planning the bi-weekly meetings
  - Participate in a peer mentoring group of 4-5 women engineers to discuss long term and short term goals, build community
  - Meet bi-weekly to talk about progress, issues, and give advice to each other

Invited Engineering Class Speaker, Greensburg Salem High School — Sept 2020, Oct 2021 Jan 2023, Oct 2023

- Invited to speak to a group of high school students interested in pursuing engineering
- Presented previous experience and journey to my engineering career and gave advice
- Answered Q&A regarding my engineering career

- Engineering Career Panel, Saint Vincent College — Nov 2019, Apr 2020 Sept 2020
  - Invited to speak on a panel of Saint Vincent Engineering Graduates to talk about my experience in the engineering program and how that has led to my current success
  - Participated in person and virtually and answered questions

- Discussed information regarding graduate school and my previous experience as an undergraduate student

- Ingenium Reviewer, University of Pittsburgh Aug 2019 – Present
  - Review abstracts and manuscripts from undergraduate summer research projects to determine if they are accepted into the Ingenium Journal of Undergraduate Research f or the Swanson School of Engineering
- Service Learning Volunteer, Saint Vincent College May 2017
  - Traveled to Guatemala with the Office of Service Learning to teach English to elementary students at the San Francisco Coll School
  - Assisted with local construction projects at the school and around the community.
  - Built cross-cultural relationships with teachers at the school
- Campus Ministry Volunteer, Saint Vincent College June – July 2018
  June – July 2019
  - Volunteered with Little Flower organization in Beijing, China to care for and play with special needs babies
  - Taught English to Taiwanese students at a local parish
  - Led English lessons at Guo Tai elementary school English camp
  - Coordinated lessons with Fu Jen English department
  - Learned about the traditions, customs, and culture of China and Taiwan

Technical Skills

- Laboratory skills: Spectrophotometer, Liquid chromatography, SDS Electrophoresis, Agarose and Acrylamide gel electrophoresis, Micropipetter, Colony counting on agar plates, Distillation process, Gram Staining, Light Microscope, Cell counting on slides containing grids, Cell culture, NMR spectroscopy, IR spectroscopy, GC Mass spectrometry, RT- qPCR, SEM, MSC/ASC exosome isolation (ultracentrifugation and tangential flow filtration), ninhydrin/hydroxproline assays, uPa assays, BCA assay, Flow Cytometry, Immunofluorescent Chemistry, Enzyme-linked immunosorbent Assays, Lowry assay, Gelatin Zymography
- Computer Skills: Microsoft Office 365, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Adobe Premiere Elements, Microsoft Outlook, MATLAB R2022b, LABVIEW, Autodesk, Solidworks, Makerbot, REDCap, GraphPad Prism, Biorender, WHOVA, zoom, Microsoft teams

Membership and Certification

Center for the Integration of Research, Teaching, and Learning Apr 2024

Associate Level Certification in STEM Teaching, University of Pittsburgh

International Society for Applied Cardiovascular Biology Jul 2022 – Present

Virtual Chair of Vascular Disease Session 14 at 18th ISACB Biennial Meeting in Memphis, TN, October, 2022

Moderator of Young Investigator's Symposium Round 3 at 19th ISACB Biennial Meeting in Vienna, Austria, October 2024

American Society for Matrix Biology	Sept 2021 – Present
American Heart Association	Sept 2020 – Present
Alpha Phi Omega National Service Fraternity	July 2017 – Present
Alpha Chi National Honor Society	Oct 2015 – Present
Beta Beta Beta Biology Honor Society	Mar 2015 – Present
Alpha Lambda Delta National Honor Society	Jan 2015 – Present

Related Coursework

Undergraduate

Cell Biology and Lab, Biotechnology and Lab, Mammalian Physiology and Lab, Molecular Genetics and Lab, Biochemistry and Lab, Organic Chemistry I and II and Lab, Introduction to Engineering Computation, Materials Engineering, Engineering Thermodynamics, Statics, Introduction to Electrical Circuits and Lab, Soft Materials, Heat and Mass Transfer, Introduction to Engineering Design and Lab, Control Theory

Graduate

Mathematical Methods in Chemical Engineering, Extracellular Matrix in Tissue Biology and Bioengineering, Stem Cells, Cell Therapy, Introduction to Tissue Engineering, Applied Biostatistics, Cardio Organ Replacement, Societal, Political, and Ethical Issues in Biotechnology, Cardio System Dynamics and Modeling, Prep for the STEM Classroom, Biomedical Optical Microscopy, Prep for an Academic Career, Advancing Learning Through Evidence-Based STEM Teaching