CURRICULUM VITAE

Bryan D. James, Ph.D. (he/him)
Postdoctoral Investigator/Scholar
Marine Chemistry & Geochemistry/Biology
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

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EDUCATION

Ph.D. **University of Florida** Aug. 2017 - May 2021
Department of Materials Science and Engineering
Advisor: Prof. Josephine B. Allen
Dissertation: *Engineering Complex Microenvironments & Their Applications to Sex- Specific Mechanobiology and Biomaterial Development*

B.A.Sc. **University of Toronto** Sept. 2012 - May 2017
Department of Materials Science and Engineering
Advisor: Prof. Eli D. Sone
Thesis: *Design and testing of anti-fouling SLIPS surfaces for prevention of zebra mussel adhesion*

Appointments

Assistant Professor (incoming) **Northeastern University** Jan. 2025
Department of Chemical Engineering

EARLY CAREER AWARDS AND DISTINCTIONS

Sustainable Futures Initiative Early Career Postdoctoral-Faculty Bridge Grant – American Chemical Society	2024
Rising Stars in Engineering in Health – Cornell Uni., Columbia Uni., Johns Hopkins Uni.	2023
CAS Future Leader – American Chemical Society	2023
Distinguished Young Scholars Seminar (DYSS) – Uni. of Washington	2022
ACS PMSE Future Faculty Scholar – American Chemical Society	2022
Early Career Editorial Advisory Board – *ACS Biomaterials Science & Engineering*	2022-2025
NextProf Nexus Workshop Alumni – Uni. of Michigan, Georgia Tech., UC Berkeley	2020
New England Future Faculty Workshop Alumni – Northeastern Uni., Harvard Medical School	2020

RESEARCH EXPERIENCE

Woods Hole Oceanographic Institution Aug. 2021 – Present
Postdoctoral Investigator/Weston Howland Jr. Postdoctoral Scholar
Co-advisor: Senior Scientist Christopher M. Reddy
Co-advisor: Senior Scientist Mark E. Hahn
Co-advisor: Associate Scientist Collin P. Ward

University of Florida Aug. 2017 – May 2021
National Institutes of Health National Research Service Award (F31) Fellow
Advisor: Prof. Josephine B. Allen

University of Toronto Sept. 2016 – July. 2017
Post-graduate Research Assistant, Undergraduate Research Assistant
Advisor: Prof. Eli D. Sone

Air Liquide Laboratories, Research & Development, Tsukuba, Japan June 2015 – May 2016
Process Engineer

Advisor: Scientific Director Christian Dussarrat, Ph.D.

Woods Hole Oceanographic Institution Summers 2011-2014

Undergraduate Lab Manager, Guest Student, Volunteer

Advisor: Senior Scientist Christopher M. Reddy

REFEREED PUBLICATIONS (* equal contribution) (α mentee) (Google Scholar)

Published

1. **James, B. D.**, Medvedev, A. V., Makarov, S. S., Nelson, R. K., Reddy, C. M., Hahn, M. E. Moldable plastics (polycaprolactones) can be acutely toxic to developing zebrafish and activate nuclear receptors in mammalian cells. *ChemRxiv.* (2024).
2. **James, B. D.**, Sun, Y., Izallalen, M., Mazumder, S., Perri, S. T., Edwards, B., de Wit, J., Reddy, C. M., Ward, C. P. Strategies to reduce the environmental lifetimes of drinking straws in the coastal ocean. *ACS Sustainable Chemistry & Engineering*. **12**, 6, 2404-24011 (2024).
   - **ACS press release**
   - **WHOI press release**
   - **Coverage by WCAI, WBUR, WCVB, WFXT**
3. **James, B. D.**, Ward, C. P., Hahn, M. E., Thorpe, S. J., Reddy, C. M. Minimizing the environmental impacts of plastic pollution through ecodesign of products with low environmental persistence. *ACS Sustainable Chemistry & Engineering* **12**, 3, 1185-1194 (2024).
   - **WHOI press release**
4. **James, B. D.**, Reddy, C. M., Hahn, M. E., Nelson, R. K., de Vos, A., Aluwihare, L. I., Wade, T. L., Knap, A. H., Bera, G. Fire and oil led to complex mixtures of PAHs on burnt and unburnt plastic during the M/V *X-Press Pearl* disaster. *ACS Environmental Au*. **3**, 5, 319-335 (2023).
5. **James, B. D.,** Karchner, S. I., Walsh, A. N., Aluru, N., Franks, D. G., Sullivan, K. R., Reddy, C. M., Ward, C. P., Hahn, M. E. Formulation controls the potential neuromuscular toxicity of polyethylene photoproducts in developing zebrafish. *Environmental Science & Technology*. **57**, 21, 7966–7977 (2023).
6. Allen, J. B.*, Ludtka, C.*, **James, B. D.*** Sex as a Biological Variable in Tissue Engineering and Regenerative Medicine. *Annual Review in Biomedical Engineering.* **25**, 1 (2023).
7. Landrigan, P. J., Raps, H., Cropper, M., Brunner, M., Canonizado, E. M., Charles, D., Chiles, T., Donohue, M. J., Enck, J., Fenichel, P., Fleming, L. E., Ferrier-Pages, C., Fordham, R., Gozt, A., Griffin, C., Hahn, M. E., Haryanto, Budi, Hixson, R., Ianelli, H., **James, B. D.**, Kumar, P., Laborde, A., Lavender-Law, K., Martin, K., Mu, J., Mulders, Y., Mustapha, A., Niu, J., Pahl, S., Park, Y., Pitt, J. A., Ruchirawat, M., Seewoo, B. J., Spring, M., Stegeman, J. J., Suk, W., Symeonides, C., Takada, H., Thompson, R., Vicini, A., Wang, Z., Whitman, E., Wirth, D., Wolff, M., Yousuf, A., Dunlop, S. The Minderoo Monaco Commission on Plastics and Human Health. *Annals of Global Health*. 1-214 (2023).
   - **WHOI press release**
   - **Coverage by NIEHS, WBUR**
8. **James, B. D.**, de Vos, A., Aluwihare, L. I., Youngs, S., Ward, C. P., Nelson, R. K., Michel, A. P. M., Hahn, M. E., Reddy, C. M. Divergent Forms of Pyroplastic: Lessons Learned from the M/V *X-Press Pearl* Ship Fire. *ACS Environmental Au.* **2**, 5, 467-479 (2022).
9. de Vos, A., Aluwihare, L. I., DiBenedetto, M. H., Ward, C. P., Youngs, S., Michel, A. P. M., Colson, B. C., Mazzotta, M. G., Walsh, A. N., Nelson, R. K., Reddy, C. M., **James, B. D.** The *M/V X-Press Pearl* nurdle spill: Contamination of burnt plastic and unburnt nurdles along Sri Lanka's beaches. *ACS Environmental Au.* **2**, 2, 128-135 (2022).
   - **Cover story of C&EN January 23, 2023**
   - **ACS Environmental Au Best Paper Award, 2021-2022**
   - **WHOI press release**
10. **James, B. D.***, Kimmins, K. M.*, Nguyen, M.α, Lausch, A. J., Sone, E. D. Attachment of zebra and quagga mussel adhesive plaques to diverse substrates. *Scientific Reports.* **11**, 23998 (2021).
11. **James, B. D.**, Allen, J. B. Sex-specific response to combinations of shear stress and substrate stiffness by endothelial cells *in vitro*. *Advanced Healthcare Materials.* **10**, 18, 2100735 (2021).

- **Featured on cover of journal**

12. Roy, T., **James, B. D.**, Allen, J. B. Anti-VEGF-R2 Aptamer and RGD Peptide Synergize in a Bifunctional Hydrogel for Enhanced Angiogenic Potential. *Macromolecular Bioscience.* **21**, 2, 2000337 (2021).
13. **James, B. D.**, Allen, J. B. Self-assembled VEGF-R2 targeting DNA aptamer-collagen fibers stimulate an angiogenic-like endothelial cell phenotype. *Materials Science & Engineering: C.* **120,** 111683 (2021).
14. **James, B. D.**, Guerin, P.[α], Allen, J. B. Let's Talk About Sex– Biological Sex Is Underreported in Biomaterial Studies. *Advanced Healthcare Materials*. **10**, 1, 2001034 (2021).
    - **Featured by Advanced Science News**
15. **James, B. D.**, Guerin, P.[α], Iverson, Z.[α], Allen, J. B. Mineralized DNA-collagen complex-based biomaterials for bone tissue engineering. *International Journal of Biological Macromolecules.* **161**, 1127-1139 (2020).
16. **James, B. D.,** Montoya, N.[α], Allen, J. B. MechanoBioTester: A Decoupled Multi-Stimulus Cell Culture Device for Studying Complex Microenvironments In-Vitro. *ACS Biomaterials Science & Engineering.* **6**, 6, 3673-3689 (2020).
17. **James, B. D.**, Saenz, S.[α], van Gent, A.[α], J. B. Allen. Oligomer Length Defines the Self-Assembly of Single-Stranded DNA–Collagen Complex Fibers. *ACS Biomaterials Science & Engineering*. **6**, 1, 213-218 (2020).
18. **James, B. D.**, Ruddick, W. N., Vasisth, S. E., Dulany, K., Sulekar, S., Porras, A., Marañon, A., Nino, J. C., Allen, J. B. Palm Readings: *Manicaria saccifera* palm fibers are bioactive textiles with low immunogenicity. *Materials Science & Engineering: C*. **108**, 110484 (2019).
19. Kimmins, K., **James, B. D.**, Nguyen, M.[α], Hatton, B. D., Sone, E. D. Oil-infused polydimethylsiloxane prevents zebra mussel attachment. *ACS Applied Bio Materials*. **2**, 12, 5841-5847 (2019).
20. Chen, M.*, Savguira, Y.*, MacInnis, J.*, **James, B. D.***, Thorpe, S. J. Power-to-Gas Design Project: Amphibious Yacht and Fueling Station. *International Journal of Hydrogen Energy*. **44**, 59, 31646-31669 (2019).
21. **James, B. D.**, Allen, J. B. Vascular Endothelial Cell Behavior in Complex Mechanical Microenvironments. *ACS Biomaterial Science & Engineering*. **4**, 11, 3818–3842 (2018).

In Preparation

1. Zhang, B., Lichlyter, D., **James, B. D.**, Poon, J., Major, S., Allen, J. B., Webb, A. Development of Carbon Monoxide Releasing Poly(diol-citrate) Biomaterials.

BOOK CHAPTERS

1. **James, B. D.**, Reddy, C. M. Container Overboard in the Port of New Orleans, LA, USA: The Response and Cleanup of the 2020 Bianca Pellet Spill. *Coastal & Marine Pollution: Source to Sink, Mitigation & Management.* Edited by M. Vithanage, S. M. Samarasekara, **B. D. James**, C. M. Reddy. Wiley. (In Review).
2. Sewwandi, M., Perera, K. I., Reddy, C. M., **James, B. D.**, Amarathunga, A. A. D., Wijerathna, I. H. K., Vithanage, M. Plastics, Nurdles, and Pyrogenic Microplastics in the Coastal Marine Environment. *Maritime Accidents and Environmental Pollution - The X-Press Pearl Disaster Causes, Consequences, and Lessons Learned*. Edited by M. Vithanage, A. P. de Alwis, D. Botheju. Taylor & Francis. (2023). ISBN 9781003314301.
3. Ursino, H.*, **James, B. D.*****, Ludtka, C.*, Allen, J. B. Bone Tissue Engineering. *Tissue Engineering Using Ceramics and Polymers, 3rd Edition*. Edited by A. Boccaccini, P.X. Ma, L. Liverani. Woodhead Publishing. (2021). ISBN 9780128205082.
4. **James, B. D.**, Allen, J. B. Engineering Vascular Grafts with Multiphase Structures. *Vascular Tissue Engineering*. Methods in Molecular Biology. Edited by F. Zhao, K. W. Leong. Springer Nature. (2021). ISBN 978-1-0716-1707-6.

NON-REFEREED PUBLICATIONS

1. **James, B. D.**, Hahn, M. E., Reddy, C. M. (2022) Biomaterials Science Can Offer a Valuable Second Opinion on Nature's Plastic Malady. *Environmental Science & Technology*. **56**, 3, 1475-1477.
2. **James, B.D.** (2021). Choosing the right straw: when you get to think like a materials engineer. *Gainesville Sun,* posted on July 8.

PATENTS

1. United States Patent application 17/423,303. Allen, J. B. and **James, B. D.** Bioreactor chamber and systems thereof. (Published July 28, 2022).
2. United States Patent application 17/36,715. Allen, J. B. and **James, B. D.** Aptamer assemblies for protein crosslinking. (Published October 20, 2022).
3. Patent pending. PCT/US2021/049833. Allen, J. B., **James, B. D.**, Andrew, J. S., Ferson, N. D. DNA-Collagen Complexes and Magnetoelectric Janus Materials for Biomedical Applications. (Filed September 10, 2021).

AWARDS AND HONORS

Academic

Best Paper Award, 2021-2022 – *ACS Environmental Au*	2023
Attributes of a Gator Engineer – Leadership – Uni. of Florida	2021
Weston Howland Jr. Postdoctoral Scholar – WHOI	2020
Gridley McKim-Smith Women's Health Fellowship Award – Foundation for Women's Wellness	2020
Ruth L. Kirschstein Predoctoral Individual NRSA – NIH NHLBI	2019
Iva and Norman Tuckett Institute for Computational Engineering Fellowship – Uni. of Florida	2017
Dow Chemical Graduate Fellowship – Uni. of Florida	2017
Graduate School Preeminence Award – Uni. of Florida	2017
U.S. Steel Canada Undergraduate Scholarship – Uni. of Toronto	2013-2015
Dean's List – Uni. of Toronto	2012-2017

Competition

1st Place, Biomaterials Education Challenge – Society For Biomaterials (SFB)	2019
1st Place, Hydrogen Student Design Contest – Hydrogen Education Foundation	2018

Organization

Biomaterials Day Grant – SFB	2020
Local Section Science Café Mini-Grant – ACS Florida Chapter	2018

Conference

Student Abstract Award – SFB Tissue Engineering SIG	2020
SFB Chapter Travel Award – Uni. of Florida SFB Student Chapter	2018, 2019

GRANTS

ACS-GCI Sustainable Futures Initiative Early Career Postdoctoral-Faculty Bridge Grant (awarded, $125,000)	2024
NIH NHLBI F31 Predoctoral Fellowship: 1 F31 HL147445-01 Vascular cell sexual dimorphism in complex mechanical microenvironments (awarded, $117,615)	2019-2021

LEADERSHIP, OUTREACH, AND TEACHING ACTIVITIES

Leadership

Secretary/Treasurer, SFB National Student Chapter	May 2021 – May 2022
Secretary/Treasurer - Elect, SFB National Student Chapter	Oct. 2020 – May 2021
President, Uni. of Florida SFB Student Chapter	Apr. 2019 – May 2021
Outreach Director, Uni. of Florida SFB Student Chapter	Apr. 2018 – Apr. 2019

4th Year Class Representative, Uni. of Toronto Engineering Society	Sept. 2016 – Apr. 2017
Chair, MSE Discipline Club	Sept. 2016 – Apr. 2017
Vice-chair, MSE Discipline Club	Sept. 2014 – Apr. 2015
Communications Director, MSE Discipline Club	Sept. 2013 – Apr. 2014

Outreach

Speaker, Humanists and Freethinkers of Fairfield County, CT (Virtual)	April 2024
Speaker, Visiting UMass Dartmouth NSF-REU community college students, WHOI	June 2023
Speaker, WEBiO, Uni. of Florida	Oct. 2022
Speaker, on Marine Plastic Pollution, Town of Hingham, MA	Oct. 2022
Speaker, Microplastics Survey, Ocean Science Journalism Fellowship, WHOI	May 2022
Speaker, Theater and Microplastics with the Boston Conservatory and WHOI	March 2022
Middle School Science Advisor, Ms. Dawna Garvin's Class, Pleasanton, TX	Mar. 2022 – Mar. 2024
Speaker, Science Untapped, MIT Office of Graduate Education	Oct. 2021
Co-Organizer, Career Opportunities in Biomaterials for HBCU Students, SFB	Oct. 2021
Co-Organizer/Speaker, Biomaterials Day Virtual Workshop, SFB	Sept. 2021
Co-Organizer, “Hearing from Engineers – UF SFB Speaks with Industry” Webinar Series	July 2020 – Aug. 2020
Co-Organizer, Uni. of Florida 10th Annual Biomaterials Day Symposium	Mar. 2021
Co-Organizer, Uni. of Florida 8th Annual Biomaterials Day Symposium	Mar. 2019
Guest Instructor, Biomaterials Lesson, PK Yonge Developmental Research School	Mar. 2019
Co-Organizer, ACS Science Café	July 2018 – Nov. 2018

Teaching

Invited Speaker, EMA 3000L, Sophomore Materials Lab, Uni. of Florida (Virtual). Winter 2022

- Instructed on plastics and design for environment

Invited Speaker, IDH3931, FUNdamentals of Research Integrity, Uni. of Florida Fall 2020

- Spoke to students on Mentor/Mentee dynamics

Guest Instructor, EMA4061: Biomaterials: Structure and Properties, Uni. of Florida Fall 2019

- Senior level undergraduate course
- Covered topics related to blood-material and host-material interactions

Guest Instructor, EMA3010: Intro to MSE, Uni. of Florida Summer 2019

- Introductory undergraduate course
- Covered topics related to mechanical properties and phase transformations

Co-Instructor and Course Co-Creator, IDH2931: Honors Seminar, Uni. of Florida Summer 2019

- Designed an 8-week seminar on biomaterials for the UF Summer Science Training Program
- Instructed to a class of high school students

Teaching Assistant, EMA3011: Fundamental Principals of Materials, Uni. of Florida Winter 2019

- Sophomore level undergraduate course
- Covered topics related to quantum phenomena and organic chemistry

Teaching Assistant, EMA4061L: Biomaterials Laboratory, Uni. of Florida Fall 2018

- Senior level undergraduate laboratory course
- Guided students in biomaterials synthesis and characterization
- Taught mammalian cell culture, aseptic technique, and immunofluorescence microscopy

MENTORING

Graduate Students

1. **Heather Ursino**, University of Florida, MSE — Aug. 2019 – May 2021

Undergraduate Students

1. **Brenden Irving**, WHOI, CC-CREW Program — June 2023 – Aug. 2023
2. **Gantt Meredith**, University of Florida, BME — Oct. 2019 – May 2020
3. **Zion Iverson**, University of Florida, Biology — Sept. 2019 – Dec. 2019
4. **Sophia Saenz**, University of Florida, BME — Jan. 2019 – May 2021
5. **Paxton Guerin**, University of Florida, BME — Jan. 2019 – May 2021
6. **Nicolas Montoya**, University of Florida, ECE — Sept. 2018 – May 2020
7. **Kadeem Samuel**, University of Florida, ECE — Sept. 2018 – Nov. 2018
8. **Gabriela Alvarez**, University of California, Riverside, REU student — June 2018 – Aug. 2018
9. **Jeffrey Butler**, Morehouse College, REU student — June 2018 – Aug. 2018
10. **Chris Cotter**, University of Florida, MSE — Sept. 2017 – Apr. 2018
11. **Scott Parker**, University of Florida, MSE — Sept. 2017 – Apr. 2018
12. **Minh-Tam Nguyen**, University of Toronto, MSE — Apr. 2017 – July 2017
13. **Thomas Rugh**, California State Polytechnic University-Pamona, MechE — May 2014 – Sept. 2014
14. **Brian Forst**, Harvard University, Government — May 2013 – Aug. 2013
15. **Mike McNulty**, Boston College, Chemistry — May 2013 – Aug. 2013
16. **Ben Freiberg**, Skidmore College, Environmental Science — May 2013 – Aug. 2013

High School Students

1. **Anastacia van Gent**, University of Florida Student Science Training Program — June 2019 – July 2019

IN THE NEWS

1. "WHOI researchers develop eco-friendly plastic straw alternative", *Boston 25 WFXT*. 04/17/2024.
2. "Why you can't wear yoga clothes in an MRI: The fibers may burn your skin", *Washington Post*. 07/26/2023.
3. "Grappling with the biggest marine plastic spill in history", *Chemical & Engineering News.* 01/22/2023.

PROFESSIONAL RESPONSIBILITIES & SERVICE

Early Career Editorial Advisory Board
ACS Biomaterials Science & Engineering — 2022-2025

Committees
WHOI Committee for Diversity, Equity, and Inclusion — 2021-2023

Reviewed for Funding Agencies (# of grants)
Connecticut Sea Grant (1)
New York Sea Grant (1)

Reviewed for Journals (# of articles)
ACS Biomaterials Science & Engineering (1)
Journal of Cleaner Production (1)
Journal of Nanobiotechnology (2)
Bioengineering & Translational Medicine (3)
Science of the Total Environment (1)
Talanta (1)
Frontiers in Marine Science – Marine Pollution (1)
Journal of Tissue Engineering and Regenerative Medicine (1)

Volunteering
TERMIS-AM Annual Conference & Exhibition, Orlando, FL — Dec. 2019
Biomedical Engineering Society Annual Meeting, Philadelphia, PA — Oct. 2019
Biomedical Engineering Society Annual Meeting, Atlanta, GA — Oct. 2018
Society For Biomaterials Annual Meeting & Exhibition, Atlanta GA — Apr. 2018

ORAL PRESENTATIONS (presenter underlined) (α mentee)

1. **James, B. D.**, Sun, Y., Izallalen, M., Mazumder, S., Perri, S. T., Edwards, B., de Wit, J., Reddy, C. M., Ward, C. P. *Biodegradation of bioplastic drinking straws in the coastal ocean*. American Chemical Society Spring Meeting. New Orleans, LA. March. 17-21, 2024.
2. **James, B. D.** *Design strategies to minimize the environmental impacts of plastic.* Northeastern University Department of Chemical Engineering Seminar. Boston, MA. Jan. 30, 2024. (**Invited**).
3. Ward, C. P., Sun, Y., **James, B. D.**, Reddy, C. M. *Translating fundamental knowledge about the degradation of cellulose diacetate in the environment into high-utility, low-persistence consumer products*. Eastman Chemical Company. Kingsport, TN. November, 7, 2023. (**Invited**).
4. **James, B. D.** *Materials Engineering and Eco-Design*. Rhode Island School of Design (RISD) Nature Lab. Providence, RI. September 25, 2023. (**Invited**).
5. **James, B. D.**, Ward, C. P., Hahn, H. E., Thorpe, S. J., Reddy, C. M. *Addressing plastic environmental impact through eco-design.* American Chemical Society Fall Meeting. San Francisco, CA. Aug. 13-17, 2023.
6. **James, B. D.** *Responding to the X-Press Pearl Nurdle Spill*. WHOI Summer Lecture Series. Woods Hole, MA. June 28, 2023. (**Invited**).
7. **James, B. D.** *Linking Formulation to the Fate and Impacts of Plastics in Sunlit Surface Waters*. International Council of Chemical Associations (ICCA) Microplastics Advanced Research and Innovation Initiative (MARII) Workshop. Seattle, WA. June 12-14, 2023. (**Invited**).
8. **James, B. D.** *The Many Forms of Plastic Pollution: Lessons Learned from X-Press Pearl Nurdle Spill.* American Chemical Society Fall Meeting. Chicago, IL. Aug. 21-25, 2022. (**Invited**).
9. **James, B. D.** *Burnt Plastic is a Complex Contaminant: Lessons Learned from X-Press Pearl Ship Fire.* UMass Dartmouth. Dartmouth, MA. Aug. 12, 2022. (**Invited**).
10. **James, B. D.** *Engineering Complex Microenvironments and Their Applications to Sex-Specific Mechanobiology*. 9th World Congress of Biomechanics, Hybrid. Taipei, Taiwan. July 10-14, 2022 (**Invited**).
11. **James, B. D.** *Plastic Pollution and Its Many Forms: Lessons Learned from the M/V X-Press Pearl Ship Fire.* UW Distinguished Young Scholars Seminar. Seattle, WA. June 29, 2022. (**Invited**).
12. **James, B. D.** *The M/V X-Press Pearl nurdle spill: Characterizing burnt and unburnt nurdles collected along Sri Lanka's beaches.* UConn Marine Sciences Seminar, Hybrid. Groton, CT. Apr. 8, 2022. (**Invited**).
13. **James, B. D.** *Engineering Complex Microenvironments and Their Applications to Sex-Specific Mechanobiology and Biomaterial Development*. WHOI, Biology Seminar, Virtual, Jan. 13, 2022.
14. **James, B. D.** *The M/V X-Press Pearl nurdle spill: Characterizing burnt and unburnt nurdles collected along Sri Lanka's beaches.* WHOI, Marine Chemistry & Geochemistry Seminar, Hybrid. Woods Hole, MA. Oct. 19, 2021.
15. **James, B. D.**, Saenz, S.α, Guerin, P.α, Allen, J. B. *Nucleic Acid-Collagen Complexes (NACC): Engineering Tunable Hard and Soft ECM Mimics.* Society For Biomaterials Annual Meeting and Exposition, Virtual. Apr. 20-23, 2021.
16. Saenz, S.α, **James, B. D.**, Allen, J. B. *Nucleic Acid Elastin Collagen Complex (NAECC) Fibers and Gels Working Towards an ECM Mimic.* Society For Biomaterials Annual Meeting and Exposition, Virtual. Apr. 20-23, 2021.
17. Guerin, P.α, **James, B. D.**, Allen, J. B. *Nucleic Acid-Collagen Complexes (NACCs) Stabilization via Physiological Ions*. Society For Biomaterials Annual Meeting and Exposition, Virtual. Apr. 20-23, 2021.
18. **James, B. D.**, Allen, J. B. *DNA aptamer-collagen complex-based biomaterials*. 11th World Biomaterials Congress, Virtual. Dec. 11-16, 2020.
19. **James, B. D.**, Montoya, N.α, Allen, J. B. *The MechanoBioTester: A Decoupled Multi-Stimulus Device for Studying Complex Microenvironments In-Vitro*. 11th World Biomaterials Congress, Virtual. Dec. 11-16, 2020.

20. **James, B. D.**, Montoya, N.[α], Allen, J. B. *A Multi-Stimulus Culture Model for Studying Complex Chemo-Mechanical Microenvironments In Vitro*. Biomedical Engineering Society Annual Meeting, Virtual. Oct. 14-17, 2020.
21. Lichlyter, D., **James, B. D.**, Webb, A. *Cellular Effects of Carbon Monoxide Releasing Poly(diol-citrate) Polymers*. Society For Biomaterials Annual Meeting and Exposition, Seattle, WA. April 3-6, 2019.
22. **James, B. D.**, Zupanska, A., Allen, J. B. *Microgravity Effects on the Function of Vascular Endothelial Cells*. American Society for Gravitational and Space Research Meeting, Bethesda, MD. October 31 – Nov 3, 2018.
23. **James, B. D.**, Chen, M., Savguira, Y., MacInnis, J., Thorpe, S. J. *Amphibious Yacht and Fueling Station.* U.S. Department of Energy Hydrogen and Fuel Cells Program 2018 Annual Merit Review and Peer Evaluation Meeting, Washington, D.C. June 13-15, 2018. (**Invited**).

POSTER PRESENTATIONS

1. Dowd, S., Stevens, D., Dorman, F., Reddy, C. M., **James, B. D.**, Nelson, R. K. *High Molecular Weight PAHs (300 – 700 Da) in Diesel Particulate and Coal Tar using Atmospheric Pressure Charge Exchange Ionization*. American Society for Mass Spectrometry 34th Sanibel Conference on Mass Spectrometry. St. Petersburg, FL. January 21-24, 2024.
2. **James, B. D.**, Karchner, S. I., Walsh, A. N., Aluru, N., Franks, D. G., Sullivan, K. R., Reddy, C. M., Ward, C. P., Hahn, M. E. *Determining the toxicity of polyethylene photoproduct complex mixtures in developing zebrafish.* American Chemical Society Fall Meeting. San Francisco, CA. Aug. 13-17, 2023.
3. **James, B. D.,** Karchner, S. I., Walsh, A. N., Aluru, N., Franks, D. G., Sullivan, K. R., Reddy, C. M., Ward, C. P., Hahn, M. E. *Determining the toxicity of polyethylene photoproduct complex mixtures in developing zebrafish.* University of Rhode Island Global Plastics Forum, Kingston, RI. May 15-16, 2023.
4. Young, S., Michel, A. P. M., de Vos, A., DiBenedetto, M. H., **James, B. D.**, Reddy, C. M. *Chemical Analysis of Nurdles form the M/V X-Press Pearl Fire: A Study of Rapid Degradation, Weathering, and Metal Accumulation.* Ocean Sciences Meeting, Virtual, February 24 - March 4, 2022.
5. **James, B. D.**, Allen, J. B. *VEGF-R2 Targeting DNA Aptamer-Collagen Fibers Stimulate an Angiogenic-Like Endothelial Cell Phenotype.* Biomedical Engineering Society Annual Meeting, Virtual. October 14-17, 2020.
6. **James, B. D.**, Wiggins, S. *Development of a High School-Level Introduction to Biomaterials Science and Engineering Course.* Biomedical Engineering Society Annual Meeting, Virtual. October 14-17, 2020.
7. **James, B. D.**, Guerin, P.[α], Iverson, Z.[α], Allen, J. B. *Mineralized DNA-Collagen Complex-Based Biomaterials for Bone Tissue Engineering.* Biomedical Engineering Society Annual Meeting, Virtual. October 14-17, 2020.
8. **James, B. D.**, Montoya, N.[α], Ruddick, W., Allen, J. B. *A Decoupled Multi-Stimulus Bioreactor for Studying Complex Chemo-Mechanical Microenvironments In Vitro*. TERMIS-AM Annual Conference & Exhibition, Orlando, FL. December 2-5, 2019.
9. **James, B. D.**, Montoya, N.[α], Ruddick, W., Allen, J. B. *A Decoupled Multi-Stimulus Bioreactor for Studying Complex Chemo-Mechanical Microenvironments In Vitro*. Biomedical Engineering Society Annual Meeting, Philadelphia, PA. October 16-19, 2019.
10. **James, B.D.**, Murbach, J. Freeman, S. T. *Osseous biomaterials: When your bone needs help healing.* Society For Biomaterials Annual Meeting and Exposition, Seattle, WA. Apr. 3-6, 2019.
11. **James, B. D.**, Montoya, N.[α], Ruddick, W., Allen, J. B. *A Decoupled Multi-Stimulus Bioreactor for Studying Complex Chemo-Mechanical Microenvironments In Vitro*. Society For Biomaterials Annual Meeting and Exposition, Seattle, WA. Apr. 3-6, 2019.
12. **James, B. D.**, Allen, J. B. *Spatial command of PDMS optical and mechanical properties by controlled diffusion-reaction processes*. Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 17-20, 2018.

13. Lichlyter, D., **James, B. D.**, Webb, A. *Carbon monoxide releasing Poly(diol-nicotinamide-citrate) polymer to reduce oxidative stress.* Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 17-20, 2018.

14. **James, B. D.**, Chen, M., Savguira, Y., MacInnis, J., Thorpe, S. J. *Power-to-Gas Design Project: Amphibious Yacht and Fueling Station.* U.S. Department of Energy Hydrogen and Fuel Cells Program 2018 Annual Merit Review and Peer Evaluation Meeting, Washington, D.C., June 13-15, 2018.

15. **James, B.D.**, Reddy, C.M., Aeppli, C., Carmichael, C.A., Nelson, R.K. *Variability in the hydrocarbon composition of oil films on rocks along the Gulf coast post the Deepwater Horizon disaster.* Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, January 27, 2014.

16. **James, B.D.**, Reddy, C.M., Aeppli, C., Carmichael, C.A., Nelson, R.K. *Variability in the hydrocarbon composition of oil films on rocks along the Gulf coast post the Deepwater Horizon disaster.* Deep-C Consortium "All-Hands" Meeting, Tallahassee, FL, September 10, 2013.

17. **James, B.D.**, Carmichael, C. A., Aeppli, C., Nelson, R.K., Murphy, E., Radovic, J., Reddy, C.M. *Variability in oiled sand-patties collected: How different are samples collected within meters on a beach?* Gulf of Mexico Oil Spill & Ecosystem Science Conference, New Orleans, LA, January 22, 2013.

18. **James, B.D.**, Carmichael, C. A., Aeppli, C., Nelson, R.K., Murphy, E., Radovic, J., Reddy, C.M. *Variability in oiled sand-patties collected: How different are samples collected within meters on a beach?* Deep-C Consortium "All-Hands" Meeting, Tallahassee, FL, August 22, 2012.