CURRICULUM VITAE

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EDUCATION:

2023	Introduction to Python Programming course, UC Santa Barbara Extension School
2019	B.S. Chemistry, Minor in Environmental Studies, Denison University, GPA: 3.80, *magna cum laude*
2015	Dublin Jerome High School; Dublin, OH

PROFESSIONAL EXPERIENCE:

May 2023-present	Research Associate I, Woods Hole Oceanographic Institution, AOPE Dept.
March 2022-May 2023	Research Assistant II, Woods Hole Oceanographic Institution, AOPE Dept.
Sept. 2020-March 2022	Research Assistant I, Woods Hole Oceanographic Institution, AOPE Dept.
Jan. 2020- May 2020	AmeriCorps STEM Field Educator, Teton Science Schools
June 2019-Dec. 2019	Marketing & Communications Assistant, Latrobe-Chestnut Hill Realty and Associates
June 2019-Dec. 2019	Substitute Teacher & Kindergarten Teachers Aide, Mary Evans Child Development Center
Jan. 2017-May 2019	Undergraduate Research Assistant, Denison University, Chemistry & Biochemistry Dept.
Sept. 2016-May 2019	Head Tutor – Chemistry and Biology, Denison University, Academic Programs Dept.

RESEARCH INTERESTS:

My overall research interest is to better understand how human activity is impacting ocean chemistry. Specifically, I operate and experiment with novel sensors to detect and quantify oceanic microplastics and dissolved gasses to discover their impacts on both human health and our oceans. I adapt small ROVs and surface vehicles to use as platforms to test our sensors. I also broadly study plastic debris in the form of both micro and macroplastics, seeking to evaluate plastic type, weathering, breakdown, and metal accumulation in various locations around the world.

CRUISE & FIELD WORK PARTICIPATION:

August, Sept. 2024	Measurement of dissolved gases to understand how physical and biogeochemical processes interact to control atmospheric gas exchange in the Hudson River estuary; Hudson River, Peekskill, NY
July 2024	Deployment of a submersible methane sensor, SAGE, on ASV PAMELi; La Rochelle University, La Rochelle, France
June 2024	Assembly and preparation for field deployment of sargassum drifters to track sargassum movement, oxygen and carbon dioxide; Pointe-à-Pitre, Guadaloupe
February 2024	Field testing of characterization of a flow- through microplastic sensor in freshwater systems; Johns Pond, Mashpee, MA; Coonamessett River, East Falmouth, MA; Ashumet Pond, East Falmouth, MA
July 2023	Testing and deployment of a novel flow-through microplastic sensor in freshwater ponds; Quahog Bay Conservancy, Harpswell, ME
June, July 2023	Studying the methane release in a warming Arctic using a small ROV under ice (Blue ROV) and an autonomous surface vehicle equipped with a suite of chemical sensors; Canadian High Arctic Research Station, Cambridge Bay, Nunavut, Canada
May 2023	Testing a new sensor suite payload to study ocean chemistry and dissolved gasses on the JetYak (autonomous surface vehicle); Woods Hole, MA

June 2022	Measuring sea-air emissions of greenhouse gasses in a costal Arctic system using a JetYak ROV and a Blue ROV; Canadian High Arctic Research Station, Cambridge Bay, Nunavut, Canada
May 2022	Deployment of an autonomous surface vehicle (JetYak) to test a new winch and CTD system; Great Harbor, Woods Hole, MA
March 2022	Under-ice methane and carbon dioxide measurements using gas extractors and analyzers coupled to a small ROV; Whitehall Lake, Hopkinton, MA
November 2021	R/V Roger Revelle with AUV Sentry and ROV Jason; Guaymas Basin, Gulf of California, Deployment of an in-situ methane sensor and an in situ dissolved inorganic carbon (DIC) sensor for the chemical analysis of hydrothermal vent fluids, (San Diego, CA to San Diego, CA)
October 2021	Shore side testing of a newly developed microplastic sensor; Grews Pond, Falmouth, MA
May 2021	Deployment of an in-situ CO_2 sensor; Little Sippewissett Marsh, Falmouth, MA

PRODUCTS:

2025	Panieri, G., Argentino, C., Savini, A., Ferré, B., Hemmateenejad, F., Eilertsen, M. H., Mattingsdal, R., Ramalho, S. P., Eidvin, T., **Youngs, S**., Colson, B. C., Michel, A. P., Kapit, J. A., Swanborn, D., Rogers, A. D., Angeles, I. B., Polteau, S., Kalenitchenko, D., Buenz, S., Mazzini, A. Sanctuary for Vulnerable Arctic Species at the Borealis Mud Volcano. *Nature Communications*.
2024	Kapit, J. A., **Youngs, S**., Pardis, W. A., Padilla, A. M., Michel, A. P. An Underwater Methane Sensor Based on Laser Spectroscopy in a Hollow Core Optical Fiber. *ACS Sensors*.
2024	Pitt, J. A., Gallager, S. M., **Youngs, S**., Michel, A. P., Hahn, M. E., Aluru, N. The Abundance and Localization of Environmental Microplastics in Gastrointestinal Tract and Muscle of Atlantic Killifish (Fundulus Heteroclitus): A Pilot Study. *Microplastics and Nanoplastics*.
2022	Preston, V., Flaspohler, G., Kapit, J., Pardis, W., **Youngs, S**., Martocello, D.E., Roy, N., Girguis, P.R., Wankel, S.D., Michel, A.P. Discovering Hydrothermalism from Afar: In Situ Methane Instrumentation and Change-Point Detection for Decision-Making. *Frontiers in Earth Science.*
2022	James, B. D., de Vos, A., Aluwihare, L., **Youngs, S**., Ward, C. P., Nelson, R. K., Michel, A. P., Hahn, M., Reddy, C. M. Divergent Forms of Pyroplastic: Lessons Learned from the M/V X-Press Pearl Ship Fire. *ACS Environmental Au*.
2022	**Youngs, S**., Michel, A., de Vos, A., James, B., Dibenedetto, M., Reddy, C., Chemical Analysis of Nurdles from the M/V X-Press Pearl Fire: A Study of Rapid Degradation, Weathering, and Metal Accumulation, Ocean Sciences Meeting, Honolulu, HI. (Abstract).
2022	Uyeda, K., **Youngs, S**., Anderson, C., Grzenda, D., Morrison, A., White, H., Michel, A., Examining the Relationship Between Weathering and the Accumulation of Metals on Macroplastic Debris Collected From Costal Environments, Ocean Sciences Meeting, Honolulu, HI. (Abstract).
2021	de Vos, A.; Aluwihare, L.; **Youngs, S**.; DiBenedetto, M. H.; Ward, C. P.; Michel, A. P.; 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*.
2019	Maldonado, S., Reczek, J., **Youngs, S**., Macinnes, M., Sinniah, K., Cousineau, B. Discovery of Unusually Stable Reduced Viologen via Synergistic Folding and Encapsulation. *J. Electrochem. Soc*, 166(15).

PRESENTED TALKS:

2024	**Youngs, S.,** Michel, A. P., Nicholson, D., Burkitt-Gray, M., Manganini, K., Giaya, D., Traylor, S., Pardis, W., Investigating Greenhouse Gas Dynamics in an Arctic Coastal Estuary During the Spring Thaw Using In Situ Sensors and Platforms, 2024 Ocean Sciences Meeting (talk).
2024	**Youngs, S**., Colson, B., Marquardt, S., Remar, J., Manganini, K., Burkitt-Gray, M., Giaya, D., Nicholson, D., Kapit, J., Michel, A.P., Advancing Chemical Sensing at Autonomous Sensors and Vehicle Technologies (AVAST) center, AVAST Open House (talk).
2022	**Youngs, S**., Chemical Analysis of Nurdles from the M/V X-Press Pearl Fire: A Study of Rapid Degradation, Weathering, and Metal Accumulation, 2022 Ocean Sciences Meeting, Honolulu, HI (poster presentation).
2019	**Youngs, S**. and Reczek, J., Synthesis of Organic Aromatic Dimers for Supramolecular Radical Chemistry. 2019. American Chemical Society 2019 National Meeting. Orlando, Florida (poster presentation)

EDUCATIONAL OUTREACH:

2020-present	MassSTEM Hub Volunteer mentor
2020-present	FabFems Volunteer mentor; career exploration support
2022, 2023, 2024	Penikese Island School, Gosnold, MA; Girls in Science Camp, Classroom Teaching
2022, 2023, 2024	Falmouth Public Schools, Falmouth, MA; Woods Hole Sea Grant, Classroom Teaching
2022, 2023, 2024	Munger Mountain Elementary School (Virtual), Jackson, WY; Meet a Scientist
2023	Chaminade High School; School visit to WHOI; Career talk and ROV demonstration
2023	Sea Education Association (SEA), Pre-College: Ocean Sciences in Woods Hole program; Talk on being a female in engineering
2023	Children's School of Science, Chemical Oceanography Class, Woods Hole, MA; Talk and tour on ocean engineering and robotics at WHOI
2023	Black Girls Dive Foundation, Woods Hole, MA; Career talk and ROV demonstration
2022	Cambridge Bay, Nunavut, Canada, Classroom Teaching to 2nd, 3rd and 7th grade classes
2022	Kid Wind Program Volunteer, Woods Hole, MA; Career talk and ROV demonstration
2022	New Heights Charter School, Brockton, MA; WHOI Broader Impacts Group, Classroom Teaching
2021	Falmouth Academy, Science Fair Judge, Falmouth, MA

PROFESSIONAL ACTIVITIES:

WHOI:

2022-present	WHOI Tech GeMs Committee, volunteer
2020-present	WHOI Sustainability Task Force Committee

Outside WHOI:

2017-2019	Committee on Intercollegiate Athletics, Vice President

TRAINING, CERTIFICATIONS, LICENSES:

2020	Wilderness First Responder Training and Certificate

COMMUNITY SERVICE

2020	Meals on Wheels; Columbus, OH
2019-2020	Habitat for Humanity; Columbus, OH & Jackson, WY
2019	Star House; Columbus, OH
2018-2019	A Call to College; Newark, OH
2016-2018	Big Brothers Big Sisters; Newark, OH