

# ELIZABETH H. DAVIS

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VIMS, William & Mary  
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## EDUCATION

- 2024 (expected) **Ph.D. in Marine Sciences**, *Virginia Institute of Marine Science, William & Mary*  
Marine Policy Sub-Concentration  
Thesis: *TBD*  
Advisor: Dr. Christopher Hein
- 2020 **M.S. in Geological Sciences**, *University of Delaware*  
Thesis: *A Reassessment of the Late Quaternary Surficial Geology of the Lower Delmarva Peninsula, VA*  
Advisor: Dr. Michael O'Neal
- 2016 **B.A. in Environmental Geoscience**, *West Virginia University*  
Graduated *Summa Cum Laude*  
Minored in Geology and Geography

## PROFESSIONAL EXPERIENCE

- 2021 **Intern**, *US Army Corps of Engineers, ERDC – Field Research Facility, Duck, NC*  
Collect, process, and analyze various field data to investigate the coupled role of ecology & sedimentology on coastal dune dynamics and morphology.
- 2017-2019 **Staff Geoscientist**, *AECOM – Conshohocken, PA*  
Utilize PA & NJ DEP Technical Guidance documents to ensure efficient remediation site closure. Compose technical regulatory reports.
- 2016-2017 **Environmental Geoscientist**, *Kleinfelder, Inc. – Hamilton, NJ*  
Case Manager of former ExxonMobil petroleum retail sites. Compose technical regulatory reports. Plan remedial actions of various contaminated media.
- 2016 **Intern**, *Friends of Decker's Creek – Morgantown, WV*  
Facilitate community outreach & education regarding environmental degradation of local watershed on behalf of 501(c)(3) nonprofit organization. Coordinate volunteer groups for maintenance & restoration.

## RESEARCH EXPERIENCE

- 2020-pres. **Graduate Research Assistant**, *VIMS, William & Mary – Gloucester Point, VA*  
Investigate the trade-offs between constructed & natural dunes in terms of beachfront stability. Funded by the NOAA Effects of Sea Level Rise Program.
- 2018-2020 **Graduate Research Assistant**, *University of Delaware – Newark, DE*  
Collected & integrated geospatial, geophysical, geochronological, sedimentologic data to explore dune features on the Delmarva Peninsula, VA.

## ELIZABETH H. DAVIS

2015-2016 **Undergrad. Research Assistant, West Virginia University — Morgantown, WV**  
Sampled & classified previously unstudied histosols and peatlands in Canaan Valley National Wildlife Preserve, West Virginia.

### FELLOWSHIPS & SCHOLARSHIPS

2021-2022 **Zeigler Fellowship** (\$3,000), VIMS, William & Mary  
2020-2021 **R. Gordon & Catherine B. Smith Fellowship**, (\$3,000), VIMS, William & Mary  
2020-2022 **Provost Distinguished Graduate Fellowship**, (tuition waiver, \$36,000), VIMS, William & Mary  
2012-2016 **Academic Excellence II Scholarship** (\$24,000), West Virginia University  
2012-2016 **Greater Tuckahoe Area Merchant's Association Scholarship** (\$3,000)  
2015-2016 **Philip & Michal Flach Scholarship** (\$2,000), West Virginia University  
2014-2015 **David Charnews Scholarship** (\$3,000), West Virginia University  
2013-2014 **Eberly College of Arts & Sciences Scholarship** (\$1,500) West Virginia University

### GRANTS, HONORS, & AWARDS

2021 **Equipment Trust Fund Grant** (\$2,000), VIMS, William & Mary  
2021 **Lou Burnett Award** (\$300), Southern Association of Marine Laboratories  
2020 **Graduate Student Government Outstanding Senator**, University of Delaware  
2020 **Kenneth Weaver Student Travel Grant** (\$120), Geological Society of America  
2020 **Graduate Student Travel Grant** (\$600), University of Delaware  
2019 **Graduate Student Research Grant** (\$1,875), Geological Society of America  
2016 **Undergraduate Enrichment Award** (\$250), Eberly College of Arts & Sciences, West Virginia University  
2016 **Environmental Geoscience Outstanding Senior**, West Virginia University  
2016 **Phi Beta Kappa**, Alpha Chapter of West Virginia University

### PUBLICATIONS in PROGRESS

in prep **Davis, E.H.**, Hein, C.J., Cohn, N., White, A.E., Zinnert, J.C., "Differences in internal structure between natural, managed, & constructed coastal dunes" *to be submitted to Geomorphology* by summer 2022.

### NON-PEER REVIEWED PUBLICATIONS

2022 **Davis, E.H.**, Haddad, J., "Defining & Striving for Resilience in Virginia's Transportation Sector", White Paper. Virginia Coastal Policy Center, Virginia.  
2022 **Davis, E.H.**, Shifting Sands: Coastal Dunes in Motion. VA SEA 2022 Lesson Plans. Virginia Institute of Marine Science, William & Mary. <https://doi.org/10.25773/1w8b-jy21>  
2020 **Davis, E.H.**, "A Reassessment of the Late Quaternary Surficial Geology of the Lower Delmarva Peninsula, VA", Masters Thesis. University of Delaware, Delaware. <https://udspace.udel.edu/handle/19716/27964>

## ELIZABETH H. DAVIS

2017 **Davis, E.H.**, Garrison, S., "Remedial Investigation Report/Remedial Action Report for Exxon Mobil Service Station #32229". Regulatory Compliance Report submitted to the NJ DEP, New Jersey.

### CONFERENCE PRESENTATIONS

2022 **Davis, E.H.**, Cortes, I., Sanks, K., Van Blunk, A., & Bastianon, E. "Exploring the interaction of salt marsh and mangrove vegetation on river delta evolution" *CSDMS Annual Meeting*, Boulder, CO, USA.

2021 **Davis, E.H.**, Hein, C.J., Cohn, N., White, D., Zinnert, J.C., Hein, E.A. "Morphostratigraphic Differences Between Natural, Managed, and Constructed Coastal Foredunes" *Abstract ID #891481, American Geophysical Union Fall Meeting*, New Orleans, LA, USA

2021 **Davis, E.H.**, Hein, C.J., Cohn, N., White, D., Zinnert, J.C., Hein, E.A. "Coupled ecologic and sedimentologic controls on coastal foredune resilience to storm impacts" *Abstract ID #9482, Coastal and Estuarine Research Federation (CERF)*, Virtual Format

2021 Cohn, N., White, D., **Davis, E.H.**, Goldstein, E., Zinnert, J.C., Hein, C.J. "Alongshore variable coastal foredune responses: de-coupling morphologic, ecological, and anthropogenic controls" *Abstract ID #, CERF*, Virtual Format

2021 White, D., Ramos, K., Cohn, N., **Davis, E.H.**, Goeke, M.E., Hein, C.J., Zinnert, J.C. "Patterns and characteristics of belowground biomass distribution across natural and managed coastal foredunes" *Abstract ID #9387, CERF*, Virtual Format

2021 White, D., Ramos, K., Cohn, N., **Davis, E.H.**, Goeke, M.E., Hein, C.J., Zinnert, J.C. "Belowground differences in the biotic structure of natural and unmanaged coastal foredunes" *Abstract ID #93950, Ecological Society of America*, Virtual Format

2020 **Davis, E.H.**, O'Neal, M.A., Lowery, D.L. "A new stratigraphic interpretation of the Delmarva Surface Sands, Virginia USA" *Abstract ID#, GSA NE-SE Joint Section Meeting*, Reston, VA

2020 **Davis, E.H.**, O'Neal, M.A. "Reassessing the depositional history of the lower Delmarva Peninsula, VA using cultural artifacts" *University of Delaware Graduate Student Forum for Research and Creative Work*, Newark, DE

### FIELD EXPERIENCE

2022-pres. **Sedimentologic & geospatial data collection** (15 transects to be sampled ~18 times over a 1-year period) using a sediment grab sampler and real-time kinematics- (RTK) GPS in the Outer Banks, North Carolina.

2020 **Sedimentologic, stratigraphic, geophysical, & geospatial data collection** (8 transects) using a vibracoring system, MALA ground-penetrating radar, and RTK-GPS in the Outer Banks, North Carolina.

2020 **Vibracore collection aboard the R/V Peregrination** as part of the Virginia Port Authority Shallow Water Dredging Project, VIMS Shoreline Studies Program

2019 **Geology of the Southwest Field Course**, Texas & New Mexico, USA

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- 2016-2019 **Groundwater sampling** (low-flow & standard purge) via Monsoon, “whale”, Grunfos, & bladder pumps in accordance with NJDEP Field Sampling Procedures and PA & NY technical guidelines
- 2016-2019 **Drilling health & safety and technical compliance oversight** of subcontractors via direct push, dual tube, hollow stem auger, and air & mud rotary drilling methods
- 2016-2018 **Excavation & underground storage tank removal** health & safety and technical compliance oversight of contractors
- 2016-2018 **In-situ remediation technical compliance oversight** via injection wells & direct push borings
- 2016-2019 **Soil sampling** from borings and sediment piles in accordance with NJDEP Field Sampling Procedures
- 2015-2019 **Soil classification** of soil borings in accordance with USDA, Unified Soil Classification System, & Modified Burmister classification systems
- 2015-2018 **Stream & surface water sampling** using Hach Stream Survey Test kits in accordance with NJDEP Field Sampling Procedures

### TECHNICAL SKILLS

*Programming Languages:* R, MATLAB, Python

*Operating Systems:* Linux, Windows, & Apple

*Numerical Models:* XBeach, PyDeltaRCM

*Version Control:* GitHub

*Software Packages:* GIS (ESRI ArcGIS Desktop Certified), Spyder, PyCharm, Adobe Illustrator, JMP, RadExplorer, LaTeX, CloudCompare, MS Office

*Field & Lab Methods:* CAMSIZER X2, GSSI & MALA ground-penetrating radar (GPR), Trimble Geo 7X handheld GNSS System, Total Station Survey, terrestrial LiDAR laser scanner, wetland delineation (via 987 USACE Wetlands Delineation Manual & Regional Supplements), watershed assessment (US EPA Procedure # 841-B-99-002), environmental impact assessment

### WORKSHOPS & TRAINING

#### TECHNICAL

- 2022 **Community Surface Dynamics Modeling System (CSDMS) Spring School** (Selected Participant), CSDMS, University of Colorado Boulder
- 2021 **XBeach Course – Morphodynamic Modelling During Storm Conditions**, Deltares Academy

#### SCIENCE POLICY & COMMUNICATION

- 2022 **Geoscience Congressional Visits Day** (Selected Participant), AGU, Washington D.C.
- 2022 **Story Collider**, hosted by VA Sea Grant, VIMS, & Chesapeake Bay National Estuarine Research Reserve
- 2022 **Science Communication to Get Policymakers’ Attention**, Research-to-Policy Collaboration, AAAS Annual Meeting

## ELIZABETH H. DAVIS

- 2022 **Road to Richmond**, Office of Government Relations, William & Mary
- 2021 **Skills for Science: Science Storytelling**, AGU Fall Meeting, New Orleans
- 2021 **Catalyzing Advocacy in Science & Engineering (CASE) Workshop**, American Association for the Advancement of Science (AAAS)
- 2021 **Coastlines and People Workshop** (Recurrent Flooding & Research Priorities), National Science Foundation (NSF), Old Dominion University
- 2021 **Science Policy Bootcamp**, University of Virginia

### DIVERSITY, EQUITY, & INCLUSION (DEI)

- 2022 **Inclusive Leadership Workshop**, PwC, William & Mary
- 2020 **Bystander Intervention Workshop**, AdvanceGEO Partnership, University of Delaware

### **PUBLIC OUTREACH & STAKEHOLDER ENGAGEMENT**

- 2022 **Discovery Lab Volunteer**, Science Museum of Virginia
- 2022 **Virginia Scientist & Educators Alliance Lesson Plan Expo**, present original K-12 classroom-tested lesson plan based on dissertation research, VIMS, VA
- 2021 **Stakeholder Workshop Co-Facilitator**, “Cultivating a Better Understanding of Local Coastal Dune Dynamics & Management Needs”, US ACE Field Research Facility, Outer Banks, NC
- 2021 **Invited Speaker**, “Increasing coastal resiliency with dunes” talk given to undergraduate course Quaternary Climate Change, Weber University, UT
- 2021 **Scientist Volunteer**, non-profit *Virginia Scientist-Community Interface* group that aligns a coalition of scientists with non-profits to affect policy
- 2020-pres. **Visiting Scientist**, non-profit *Skype a Scientist* program that connects scientists to K-12 classrooms across the United States (8 sessions)
- 2018, 2019 **Volunteer**, Coast Day, University of Delaware, Lewes, DE

### **TEACHING EXPERIENCE**

- 2018-2020 **Graduate Teaching Assistant**, University of Delaware  
GEOL304: *Sedimentology and Stratigraphy*; enroll: 19  
GEOL115: *Geologic Hazards*; enroll: 25  
GEOL110: *Earth's Evolving Systems*; enroll: 75
- 2013-2016 **Academic Tutor**, West Virginia University Athletic Department  
Tutor English, Geography, Geology, GIS Technology, & Spanish. Aid in time management and organizational skills.

### **STUDENT ADVISING & MENTORING**

- 2022-pres. **Ethan Stewart**, *Scholars Undergraduate Research Experience, William & Mary*. Collect and analyze baseline data to quantify spatial & temporal variability of beach/dune grain size & morphology prior to beach nourishment.
- 2021-pres. **Selwyn Heminway**, *Undergraduate Senior Thesis, William & Mary*.

## ELIZABETH H. DAVIS

Modeling effects of variable storm intensity and rates of sea-level rise on dune morphology in Outer Banks, North Carolina, USA.

- 2020-2021 **Melanie Strik**, *Undergraduate Senior Thesis, William & Mary.*  
Investigating sedimentologic differences between natural dunes and constructed dunes utilizing GPR and vibracore data, Outer Banks, North Carolina.

### PROFESSIONAL SERVICE

- 2022-pres. **Course Development Working Group**, “Responses to Climate Change: A Comparison of Opportunities for Potential Solutions in the Netherlands and the Coastal United States”, William & Mary
- 2021-pres. **Founding Co-Director**, Science Policy Initiative at VIMS/W&M
- 2021-pres. **Committee Member**, Professional Development Committee, VIMS
- 2021 **PostDoc Search Committee**, Coastal Geology Lab, VIMS
- 2020-pres. **VIMS Graduate Student Representative**, William & Mary Student Conduct Council
- 2019-2020 **Graduate Student Government Senator**, UD Department of Geological Sciences
- 2019 **Assistant Coordinator**, UD GEO Job Fair
- 2018-2020 **Co-Chair**, Sustainability Committee, UD Graduate Student Government
- 2015-2016 **President**, WVU Gamma Theta Upsilon Chapter

### PROFESSIONAL ASSOCIATIONS & MEMBERSHIPS

- 2022-pres. Community Surface Dynamics Modelling System (CSDMS)
- 2021-pres. National Science Policy Network (NSPN)
- 2019-pres. Society for Women in Marine Science (SWMS)
- 2019-pres. American Geophysical Union (AGU)
- 2018-pres. Geological Society of America (GSA)
- 2016-pres. Phi Beta Kappa, Alpha Chapter of West Virginia
- 2013-2016 Gamma Theta Upsilon (National Honorary Geography Society)