

## CHRISTOPHER J. HEIN

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Wakefield Associate Professor of Marine Science  
Virginia Institute of Marine Science • William & Mary

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### EDUCATION

January 2012            Ph.D., Department of Earth Sciences, Boston University (BU)  
                                 Title: *Styles of coastal evolution in response to changes in sea level and sediment supply*

June 2003              B.S., Department of Earth and Atmospheric Sciences, Cornell University (CU)  
                                 Major: *Science of Earth Systems*; Concentration: *Geological Sciences*

### PROFESSIONAL APPOINTMENTS (post-bachelors)

2019 - present        Associate Professor, Virginia Institute of Marine Science, William & Mary

2013 - 2019          Assistant Professor, VIMS, W&M

2012 - 2013          Coastal Ocean Institute Postdoctoral Scholar, Department of Marine Chemistry and  
                                 Geochemistry, Woods Hole Oceanographic Institution (WHOI)

Fall 2011              Instructor, Department of Earth Sciences, BU

2005                   Program Assistant, Earth and Environmental Field Studies Program in Hawai'i, CU

2003 - 2004          Research Assistant, Konza Prairie Long Term Ecological Research Station, Division of  
                                 Biology, Kansas State University

### INSTITUTION & ACADEMIC LEADERSHIP

2022 - present        Director of Undergraduate Programs, VIMS

2021 - present        Co-Director, VIMS/W&M Undergraduate Program in Marine Science

2021 - present        Co-Leader, U.N. International Geoscience Programme (IGCP) Project 725: *From Cores  
to Code: Data-model integration to improve reconstructions & forecasts of coastal change*

### HONORS AND AWARDS

2022 - 2025          Term Professorship: David D. & Carolyn B. Wakefield Associate Professor of Marine  
                                 Science, W&M

2022                   Thomas Jefferson Teaching Award, W&M

2018                   Plumeri Faculty Award, W&M

2018                   W&M Nominee, SCHEV Outstanding Faculty Award (Rising Star category)

2017                   Alumni Fellowship Award, W&M

2017                   Outstanding Faculty Teaching Award, VIMS

2015 - 2016          Reves Center Faculty Fellow, W&M

2011 - 2013          Coastal Ocean Institute Postdoctoral Scholar Fellowship, WHOI

2007 - 2011          National Science Foundation (NSF) Graduate Research Fellowship

2011                   Best Student Paper Award, Coastal Sediments 2011 conference

2010                   Society for Sedimentary Geology (SEPM) Outstanding Graduate Paper Award

2010                   Graduate Student Presentation Award, Department of Earth Sciences, BU

2007                   Assoc. of Environmental and Engineering Geologists Tilford Field Studies Scholarship

2006 - 2007          Dean's Teaching Fellow Award, BU

2003                   Distinguished Citizen Award: Ithaca, NY

1999 - 2003          Cornell Presidential Research Scholar

1999                   Eagle Scout, Boy Scouts of America

**RESEARCH FUNDING (GRANTS & CONTRACTS)**

**Current Research Funding** (VIMS Total: \$1,909,796; Subawards: \$499,519)

Source	Project Title	Project PIs	Award Amount	Dates Active
NOAA Ecological Effects of Sea Level Rise Program	<i>Is an old dune a more resilient dune? Assessing the importance of ecological history in coastal protection from storms and sea level rise</i>	<b>C. Hein (Lead PI)</b> N. Cohn (US Army Engineer Research & Development Ctr) J. Zinnert (Virginia Commonwealth U.)	<b>Total Budget:</b> \$689,087 <b>VIMS Budget:</b> \$376,239 <b>Subawards:</b> \$56,106	09/2019 – 08/2024
NOAA Effects of Sea Level Rise Program (via CSS)	<i>Beach nourishment effects on sediment transport and vegetation interactions</i>	<b>C. Hein (Co-Lead PI)</b> J. Zinnert (Virginia Commonwealth U.; Co-Lead PI)	<b>Total Budget:</b> \$25,213 <b>VIMS Budget:</b> \$14,213 <b>Subawards:</b> \$0	07/2022 – 09/2024
National Fish and Wildlife Foundation National Coastal Resilience Fund	<i>Stabilizing barrier islands and enhancing resilience of Virginia's Eastern Shore through marsh construction: Phase III – Final Design &amp; Engineering</i>	<b>C. Hein (Lead PI)</b> K. Gedan (George Wash. U.) M. Fenster (Randolph-Macon) Stantec Inc.	<b>Total Budget:</b> \$310,306 <b>VIMS Budget:</b> \$310,306 <b>Subawards:</b> \$242,425	01/2023 – 06/2024
National Science Foundation Marine Geology & Geophysics	<i>Collaborative Research: Unraveling North American Ice-Sheet Dynamics and Regional Sea-Level Change along the U.S. Mid-Atlantic over the Last Glacial Cycle</i>	<b>C. Hein (Lead PI)</b> T. Pico (University of California Santa Cruz)	<b>Total Budget:</b> \$565,490 <b>VIMS Budget:</b> \$299,495 <b>Subawards:</b> \$20,000	09/2023 – 08/2026
National Science Foundation Geomorphology and Land-Use Dynamics	<i>Collaborative Research: Storm surge deposition on salt marshes: Extent, provenance, &amp; processes</i>	D. FitzGerald (Lead PI, BU) <b>C. Hein (PI)</b> C. Pondell (VIMS) Z. Hughes (BU) I. Georgiou (Water Institute of the Gulf)	<b>Total Budget:</b> \$507,718 <b>VIMS Budget:</b> \$210,743 <b>Subawards:</b> \$0	08/2020 – 07/2024
US Geological Survey Cooperative Agreement	<i>Integrated Geomorphic Assessment of Virginia Eastern Shore Barrier Islands</i>	<b>C. Hein (Sole PI)</b>	<b>Total Budget:</b> \$325,000 <b>VIMS Budget:</b> \$325,000 <b>Subawards:</b> \$0	10/2023 – 09/2028
US Fish & Wildlife Service Competitive State Wildlife Grants	<i>Testing high marsh restoration techniques to benefit salt marsh birds</i>	<b>C. Hein (Lead PI)</b> K. Gedan (George Wash. U.) M. Fenster (Randolph-Macon) Stantec Inc. <i>(VIMS component is subaward from \$1M multi-state project)</i>	<b>Total Budget:</b> \$1,000,000 <b>VIMS Budget:</b> \$250,000 <b>Subawards:</b> \$180,988	03/2021 – 03/2024
Buzzards Bay Coalition	<i>Lower Buzzards Bay Sedimentation &amp; Gooseberry Causeway Impact Study</i>	D. FitzGerald (Lead PI, BU) Z. Hughes (BU) S. Fagherazzi (BU) <b>C. Hein (PI)</b> M. Shultz (Woods Hole Grp.)	<b>Total Budget:</b> \$1,325,000 <b>VIMS Budget:</b> \$120,500 <b>Subawards:</b> \$0	06/2022 – 01/2024

**Completed Research Funding** (VIMS Total: \$2,324,970; Subawards: \$933,671)

Source	Project Title	Project PIs	Award Amount	Dates Active
Commonwealth of Virginia	<i>Chincoteague Inlet Modeling Study Phase II&amp;III</i>	<b>C. Hein (Lead PI)</b> I. Georgiou (Water Institute of the Gulf) A. Trembanis (U. Delaware) M. Fenster (Randolph-Macon)	<b>Total Budget:</b> \$600,000 <b>VIMS Budget:</b> \$600,000 <b>Subawards:</b> \$372,500	07/2020– 06/2022
US Geological Survey EDMAP Program	<i>Quaternary sea-level change and the surficial geology of southern Accomack County, Eastern Shore of Virginia</i>	<b>C. Hein (Sole PI)</b>	<b>Total Budget:</b> \$27,237 <b>VIMS Budget:</b> \$27,237 <b>Subawards:</b> \$0	06/2020– 12/2021
Virginia Port Authority / Middle Peninsula Planning District Commission	<i>Shallow Water Dredging Study</i>	D. Milligan (Lead PI, VIMS) S. Hardaway (VIMS) <b>C. Hein (subawardee)</b>	<b>Total Budget:</b> unknown <b>Hein Budget:</b> \$61,073 <b>Subawards:</b> \$0	08/2020– 09/2021
National Fish and Wildlife Foundation <i>National Coastal Resilience Fund</i>	<i>Stabilizing barrier islands and enhancing resilience of Virginia's Eastern Shore through marsh construction</i>	<b>C. Hein (Lead PI)</b> K. Gedan (George Wash. U.) M. Fenster (Randolph-Macon) Stantec Inc.	<b>Total Budget:</b> \$249,707 <b>VIMS Budget:</b> \$249,707 <b>Subawards:</b> \$128,199	05/2019– 10/2020
Commonwealth of Virginia	<i>Chincoteague Inlet Modeling Study Phase I</i>	<b>C. Hein (Lead PI)</b> I. Georgiou (Water Institute of the Gulf) A. Trembanis (U. Delaware) M. Fenster (Randolph-Macon)	<b>Total Budget:</b> \$300,000 <b>VIMS Budget:</b> \$300,000 <b>Subawards:</b> \$240,000	07/2019– 06/2020
NSF <i>Geomorphology and Land-Use Dynamics RAPID</i>	<i>Marsh Sedimentation due to Hurricanes Florence and Michael Flooding Event in SC (EAR-1904496)</i>	D. FitzGerald (Lead PI, BU) <b>C. Hein (PI)</b> Z. Hughes (BU) C. Pondell (VIMS)	<b>Total Budget:</b> \$22,276 <b>VIMS Budget:</b> \$12,176 <b>Subawards:</b> \$0	12/2018– 11/2019
Commonwealth of Virginia Center for Innovative Technology	<i>Integrated Barrier Island Systems (IBIS) Management Project Phase I: Sediment Fluxes and Trapping Dynamics around Fishing Point, Southern Assateague Island, VA</i>	<b>C. Hein (Lead PI)</b> A. Trembanis (U. Delaware) M. Fenster (Randolph-Macon College)	<b>Total Budget:</b> \$300,000 <b>VIMS Budget:</b> \$300,000 <b>Subawards:</b> \$156,972	04/2018– 12/2019
NOAA Mid-Atlantic Regional Sea Grant	<i>Managing for biodiversity and blue carbon in the face of sea-level rise and barrier-island migration</i>	<b>C. Hein (Lead PI)</b> S. Gedan (U. Maryland) S. Jardine, G. Parsons (U. Delaware) J. Lorenzo Trueba (Montclair State U.)	<b>Total Budget:</b> \$527,888 <b>VIMS Budget:</b> \$139,669 <b>Subawards:</b> \$0	02/2016– 01/2019

NSF <i>Geomorphology and Land-Use Dynamics RAPID</i>	<i>Storm surge deposition on Salt Marshes: Impacts of Hurricane Irma from Florida to South Carolina (EAR-1556554)</i>	D. FitzGerald (Lead PI, BU) <b>C. Hein (PI)</b> Z. Hughes (BU) I. Georgiou (U. New Orleans) M. Kulp (U. New Orleans)	<b>Total Budget:</b> \$25,412 <b>VIMS Budget:</b> \$4502 <b>Subawards:</b> \$0	05/2019– 10/2020
Commonwealth of Virginia Center for Innovative Technology	<i>Coastal resiliency mapping techniques: Addressing key scientific questions through coordinated robotic geophysical surveys</i>	<b>C. Hein (Lead PI)</b> A. Trembanis (U. Delaware) M. Fenster (Randolph-Macon College)	<b>Total Budget:</b> \$50,000 <b>VIMS Budget:</b> \$50,000 <b>Subawards:</b> \$36,000	06/2017– 10/2017
DOI / National Fish and Wildlife Foundation <i>Hurricane Sandy Resiliency Fund</i>	<i>Hydrodynamic and sediment transport modeling leading to restoration, better management and improved sustainability of Great Marsh</i>	D. FitzGerald (Lead PI, BU) <b>C. Hein (PI)</b> Z. Hughes (BU) I. Georgiou (U. New Orleans)	<b>Total Budget:</b> ca. \$300,000 <b>VIMS Budget:</b> \$44,628 <b>Subawards:</b> \$0	01/2015– 12/2017
NSF Coastal SEES	<i>Sediment supply in a regime of accelerated coastal erosion (SedS-RACE): Paleoperspectives, anthropogenic influences and future challenges (OCE-1325430)</i>	<b>C. Hein (Lead PI)</b> E. Canuel (VIMS) J.-C. Huang (U. New Hampshire) P. Rosen (Northeastern U.)	<b>Total Budget:</b> \$533,461 <b>VIMS Budget:</b> \$428,941 <b>Subawards:</b> \$0	09/2013– 08/2016
NSF Marine Geology and Geophysics	<i>The response of the terrestrial carbon cycle to climate change since LGM as recorded in Bengal Fan sediments (OCE-1333826)</i>	V. Galy (Lead PI, WHOI) <b>C. Hein (PI)</b> B. Peucker-Ehrenbrink (WHOI)	<b>Total Budget:</b> \$391,954 <b>VIMS Budget:</b> \$98,037 <b>Subawards:</b> \$0	08/2013– 07/2016
W&M Reves Center Faculty Fellows Program	<i>Brazilian beach ridges as recorders of coastal response to Holocene climate change</i>	<b>C. Hein (sole PI)</b>	<b>Total Budget:</b> \$9000 (sole PI) <b>Subawards:</b> \$0	05/2015– 03/2017

**External Graduate Student Research Funding** (Total: \$6500; does not include fellowships)

Source	Project Title	Project PIs	Award Amount	Year Awarded
GSA Farouk El-Baz Student Desert Research Grant	<i>Sea-level changes and the regressive wadi infilling of a Pharaonic harbor</i>	<b>C. Hein (Sole PI)</b>	<b>Total Budget:</b> \$2500	2009
American Association of Petroleum Geologists Grants-in-Aid Eastern Section Named Grant	<i>High-resolution study of a complex mixed-energy barrier lithosome</i>	<b>C. Hein (Sole PI)</b>	<b>Total Budget:</b> \$2500	2009
Geological Society of America Graduate Student Research Grant	<i>Reworking of inner continental shelf sediments: implications for coastal change in a regime of accelerated sea level rise</i>	<b>C. Hein (Sole PI)</b>	<b>Total Budget:</b> \$1500	2007

**STUDENT MENTORING**

**Graduate Students: Major Advisor**

Mary Bryan Barksdale (PhD, 2026 [anticipated], VIMS; co-advised with M. Kirwan): *thesis title TBD*  
 Kayla Cahoon (PhD, 2025 [anticipated], VIMS): *Reconstructing Pleistocene geologic and sea-level history along Virginia's Eastern Shore*

Elizabeth Davis (PhD, 2024 [anticipated], VIMS): *The role of internal architecture in foredune resilience to coastal hazards*

Justin Shawler (PhD, 2022, VIMS): *Barrier-island dynamics: Retreat, progradation, and state changes*

Evan Flynn (MSc, 2021, VIMS; co-advised with S. Kuehl): *Contrasting roles of seabed reworking and accumulation on terrestrial organic carbon sequestration: the Ayeyarwady example*

Julie Krask (MSc, 2018, VIMS): *Connecting climate to coastal evolution: Impact of sub-millennial- scale precipitation variability on fluvial sediment discharge*

Andrew Fallon (MSc, 2016, VIMS): *Human-induced cyclical erosion due to altered sediment bypassing mechanisms along a barrier island and the resultant impact on the housing market.*

Claudia Shuman (PhD student, 2014-2015, VIMS) (medical withdrawal from VIMS graduate program)

#### **Graduate Students: Committee Member**

Tyler Messerschmidt (PhD, 2028 [anticipated], VIMS): *thesis title TBD*

Brenna Boehman (PhD, 2023 [anticipated], WHOI): *Mechanisms of terrestrial organic carbon export and burial*

Md Mohiuddin Sakib (PhD, 2025 [anticipated], University of New Orleans): *Mechanisms of sediment bypassing along inlet interrupted coasts*

Miguel Montalvo (PhD, 2026 [anticipated], VIMS): *Billfishes and fishes with a bill: where, when, and how*

Alice Staro (PhD, 2024 [anticipated], BU): *Climate change and sea level rise effects on sedimentation patterns along salt marshes and chenier plains*

Emma Dodsworth (MSc, 2024 [anticipated], VIMS): *Development of a living shoreline model to compute ecosystem restoration benefits*

Kaitlyn McPherron (PhD, 2023, University of Delaware): *Geomorphology and hydrodynamics of the Chincoteague-Assateague-Wallops (CAW) barrier system*

Alex Smith (PhD, 2023, VIMS): *Ecosystem transitions and state changes rapidly alter the coastal carbon landscape: evidence from the Chesapeake Bay region*

Wilson Fabiano Leite Galvão (MSc, 2022, Federal University of Santa Catarina [UFSC], Brazil): *Evolução geológica da Baía da Babitonga, Santa Catarina, durante o Pleistoceno Superior e Holoceno*

Andrew White (MSc, 2022, Virginia Commonwealth University): *Biotic characteristics of managed and unmanaged coastal dunes in the Outer Banks, North Carolina*

Daniel Coleman (PhD, 2020, VIMS): *The role of suspended sediment in assessing coastal wetland vulnerability*

Ana Paula da Silva (MSc, 2018, UFSC): *Late Holocene wave direction footprint in the South Atlantic*

Douglas Jensen (MSc, 2018, VIMS): *Use of pop-up satellite archival tag technology to investigate the movements, habitat utilization, and post-release survival of Cobia (*Rachycentron canadum*) that summer in Virginia waters*

Nathalie Schieder (MSc, 2017, VIMS): *Accelerating rates of forest retreat and marsh migration*

Elisabeth Clyne (MSc, 2017, VIMS): *High-resolution Late Holocene sediment records in northern Prince William Sound, Alaska*

Alexander Renaud (MSc, 2016, VIMS): *Chesapeake coastal community flood vulnerability: Prediction and verification*

Kyrstin Fornace (PhD, 2016, WHOI): *Late Quaternary climate variability and terrestrial carbon cycling in tropical South America*

#### **Undergraduate Students: Honors Research Advisor**

Selwyn Heminway (BS, 2023, W&M; High Honors): *Modeled Changes in Foredune Morphology Influenced by Storm Intensity, Sea-level Rise, and Mitigation Strategies*

Sarah Grace Lott (BS, 2021, W&M; High Honors): *Internal geometry of a headland bypassing system: São Francisco do Sul Island, Brazil*

Jessica Raff (BS, 2017, W&M; High Honors): *Thresholds of barrier-island change: A case study of Parramore Island, Virginia Eastern Shore*

Justin Shawler (BS, 2016, W&M; Honors): *Multi-proxy records of anthropogenic impacts on fluvial sediment discharge at Joppa Flats, MA.*

#### **Undergraduate Students: Senior Research Advisor**

Meghan Kirk (BS, 2024 [anticipated], W&M): *title TBD*

Cameron Clarke (BS, 2022, W&M): *Unraveling the history of Pleistocene sea-level change in Virginia: Insights from the Wachapreague Formation, Virginia Eastern Shore*

Melanie Strik (BS, 2021, W&M): *The role of coastal dune sedimentology in coastal protection from sea-level rise*

Mahinaokalani Robbins (BS, 2021, W&M): *Controls on multi-decadal volume and shoreline changes of the Virginia Barrier Islands*

Chloe Obara (BS, 2020, W&M): *Sediment fluxes at Assateague Island, Virginia: The role of spit growth on the stability of downdrift barrier islands*

Colleen Scott (BS, 2020, W&M): *The provenance of hurricane-induced marsh sedimentation on the southeast coast, USA*

Bianca Boggs (BS, 2019, W&M): *Contributions of antecedent topography to long-term barrier-island dynamics: Examples from the New Jersey and Maryland coasts*

Kendall King (BS, 2019, W&M): *Saltmarsh event sedimentation: A comparative study of Hurricane Irma deposits across the Southeast U.S.A.*

Kate DeMarco (BS, 2018, W&M): *Beach and foredune ridges as recorders of coastal shoreline evolution: Insights from Chincoteague-Assateague-Wallops islands, northern Virginia*

Lauren Herbine (BS, 2018, W&M): *Implications of Long-term Resilience of Delmarva Peninsula Marshes for Barrier-Island Stability*

Sarah Baker (BS, 2017, W&M): *Historical erosion and accretion patterns along Plum Island Point and Salisbury Beach, Massachusetts*

Jennifer Connell (BS, 2017, W&M): *Investigating salt marsh response to natural and anthropogenic changes in the Great Marsh, Plum Island, Massachusetts*

Brody Marino (BS, 2016, W&M): *Seasonal and spatial variability in the sedimentology of the Merrimack Embayment*

Charlie Deaton (BS, 2015, W&M) (co-advised with M. Kirwan, VIMS): *Barrier island migration, changes in tidal prism, and marsh loss on Virginia's Eastern Shore*

Haley Gannon (BS, 2015, W&M): *An analysis of cyclical erosion and a migrating erosional hotspot on Plum Island*

#### **Undergraduate Students: Research Experience for Undergraduates**

Sarah Grace Lott (W&M), Summer 2020: *Internal geometry of a headland bypassing system: São Francisco Island, Brazil*

Soely Luyando-Flusa (Universidad Turabo), Summer 2018: *Changing Depositional Environments of the Upper Chesapeake Bay in Response to European Colonization and Implications for Oyster Populations*

Rebecca Whitney (Elmira College), Summer 2016 (co-mentored with E. Canuel): *Organic carbon content of Holocene sediment deposited at Plum Island, MA*

Justin Shawler (W&M), Summer 2015: *Multi-proxy records of anthropogenic changes in fluvial sediment supply from Joppa Flats tidal flat, northern MA, USA* (nominated and accepted for competitive Council on Undergraduate Research Symposium, Oct 2015)

#### **Undergraduate & High School Students: Other Mentoring**

*Lab Interns (for credit or salary):* Nathaniel Ingle (W&M Marine Science, 2022 - present); Ian Cook (W&M Marine Science, 2022 - present); Anna Van Dongen (W&M Marine Science, 2022 - present); Grace Weeks (W&M Marine Science, 2021 - present); Ally Gravgaard (W&M Marine Science, 2021 - 2022); Ethan Stewart (W&M Marine Science, Summer 2022); Catherine Hughes (Randolph-Macon College, 2021)

*Honors Thesis Committees:* Emily Mushlitz (W&M Geology, 2019); Eve Pugsley (W&M Geology, 2018)

*International J1 Student Interns (Exchange students from Universidade do Vale do Itajaí, Brazil):* Luis Henrique Polido de Souza (May–Oct 2014); Marcio Albernaz (Feb–Sept 2010); Thelma Scolaro (Feb–July 2009)

*Undergraduate Volunteer Students:* Katherine Peck (W&M Anthropology Dept; Spring 2015); Luiza Barbosa Caminada (Brazilian exchange student; 2015); Joshua Darnell (Virginia Commonwealth U.; Fall 2015)

*Woods Hole Partnership Education Program (PEP) Students:* Samir Karim (2013); Sequoia Riley (2012)

*BU Undergraduate Students (2006–2011):* Mary Ellison; Emily Carruthers (current: Assistant Director Advisory Service, VIMS), Meaghan Gorman, Nicholas Cohn (current: US Army Corps of Engineers)

*American Chemical Society Project SEED Summer Fellows: Akina Chuigyn (2010); Kim Lien Le (2009)*

## **TEACHING**

### **Primary Instructor**

Fall 2023	Instructor, W&M, Marine Science Mash-Up (MSCI 391); enroll: 85
Spring 2023	Co-Instructor (lead), VIMS, Rivers: Processes & Problems (MSCI 550); enroll: 8
Fall 2022	Instructor, VIMS/W&M, Marine Geology: Environments, Processes, & Records (GEOL 421 / MSCI 421 / MSCI 521); enroll: 36
Fall 2022	Instructor, W&M, Marine Science Mash-Up (MSCI 391); enroll: 123
Fall 2021	Instructor, VIMS, Fundamentals of Marine Geology (MSCI 401C/501C); enroll: 23
Spring 2021	Instructor, VIMS, Holocene Coastal Geomorphology & Evolution (MSCI 622); enroll: 6
Fall 2020	Instructor, VIMS/W&M, Marine Geology: Environments, Processes, & Records (GEOL 421 / MSCI 421 / MSCI 521); enroll: 26
Spring 2020	Co-Instructor (lead), VIMS, Rivers: Processes & Problems (MSCI 550); enroll: 8
Fall 2019	Instructor, VIMS, Fundamentals of Marine Geology (MSCI 401C/501C); enroll: 16
Fall 2018	Instructor, VIMS/W&M, Marine Geology: Environments, Processes, & Records (GEOL 421 / MSCI 421 / MSCI 521); enroll: 22
Fall 2017	Instructor, VIMS, Fundamentals of Marine Geology (MSCI 401C/501C); enroll: 15
Spring 2017	Instructor, VIMS, Holocene Coastal Geomorphology & Evolution (MSCI 622); enroll: 5 Co-Instructor, VIMS, Advanced Principles of Marine Geology (MSCI 522); enroll: 7
Fall 2016	Instructor, VIMS, Fundamentals of Marine Geology (MSCI 401C/501C); enroll: 21
Fall 2015	Instructor, VIMS, Fundamentals of Marine Geology (MSCI 401C/501C); enroll: 20
Spring 2015	Instructor, VIMS, Barrier System Dynamics (MSCI 698); enroll: 5
Fall 2014	Instructor, VIMS, Fundamentals of Marine Geology (MSCI 401C/501C); enroll: 11 Co-Instructor, VIMS, Coastal Geomorphology (MSCI 498); enroll: 4
Spring 2014	Co-Instructor, VIMS, Principles of Geological Oceanography (MSCI 522); enroll: 3 Co-Instructor, VIMS, Rivers: Processes and Problems (MSCI 550); enroll: 7
Fall 2011	Instructor, BU, Sedimentology (ES 331); enroll: 18
Fall 2006, 2009	Teaching Fellow, BU, Sedimentology (ES 331)
Spring 2006, 2007	Teaching Fellow, BU, Earth Surface Processes (ES 333)
Fall, Spring 2002–2003	Teaching Assistant, CU, Introduction to Geology (EAS 101)

### **Guest Lectures**

2014–2023 (annual)	VIMS, Field Studies in Coastal Marine Environments (MSCI 331)
2016–2022 (annual)	VIMS, Research Experience for Undergraduates Program
2014–2021 (annual)	W&M, The Sedimentary Record (GEOL 322)
2013–2021 (annual)	VIMS/W&M, Marine Science Mash-Up (MSCI 391)
Spring 2019, '21, '22	W&M, Earth, Science, and Society (GEOL 100)
Spring 2020	W&M, Global Climate Change (GEOL 312)
Fall 2019	Harvard Graduate School of Design Landscape Studio Course
Fall 2016–2018	W&M, Sustainability & the Chesapeake Bay (BUAD 492)
Spring 2016	VIMS, Marine Organic Geochemistry (MSCI 626)
Spring 2015	W&M, Science Communication (ENSP 249)
Fall 2013	VIMS, Fundamentals of Marine Geology (MSCI 501C)
Spring 2006–2011	BU, Beach & Shoreline Processes (ES 142); Marine Geology (ES 440)

## **ACADEMIC SERVICE/ ACTIVITIES**

### **External Conference & Workshop Leadership**

Co-Lead Organizer, IGCP 725 Meeting (Florianopolis, Brazil) (October 2023)

Lead Organizer, IGCP 725 International Workshop (virtual) (18-19 January 2023): *Beyond Radiocarbon: Dating the Coastal Geologic Record*

Co-Lead Organizer, IGCP 725 International Workshop (virtual) (18-19 January 2022): *Radiocarbon Dating: Applications, Approaches, & Pitfalls*

Technical Program Co-Chair, Geological Society of America Southeastern Section Meeting, Charleston, SC (28-29 March 2019) (co-chair: Erin Beutel)

### **Conference Session and Field Trip Organization**

Session Co-Chair, International Quaternary Association (INQUA), Rome, Italy (July 2023): *From Cores to Code: Data-Model Integration to Improve Reconstructions and Forecasts of Coastal Change* (co-chairs: Jessica Pilarczyk, Matthew Brain)

Session Chair, Coastal Sediments '23, New Orleans, LA (13 April 2023): *From Cores to Code: Data-Model Integration to Improve Reconstructions and Forecasts of Coastal Change* (co-chair: Jessica Pilarczyk)

Session Chair, American Geophysical Union Fall Meeting, New Orleans, LA (14 December 2021): *Session EP23B/E. From Cores to Code: Data-Model Integration to Improve Reconstructions and Forecasts of Coastal Change* (co-chairs: Jessica Pilarczyk, Matthew Brain)

Session Chair, Society for Sedimentary Geology (SEPM) International Sedimentary Geosciences Congress (ISGC 2020), Flagstaff, AZ (26-29 April 2020): *Sedimentary Archives of Quaternary Coastal Change* (co-chairs: Sebastian Lindhorst, Toru Tamura) (Conference postponed)

Session Chair, American Geophysical Union Fall Meeting, New Orleans, LA (12 December 2017): *EP004. Beach- and Fore-dune- Ridge Systems: Architecture, Formation Mechanisms, and Use as Sedimentary Archives* (co-chairs: Sebastian Lindhorst, Lars Nielsen)

Session Co-Chair, Geological Society of America Southeastern Section Meeting, Richmond, VA (1 April 2017): *T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate* (co-chair: Michael Fenster)

Session Chair, Geological Society of America Annual Meeting, Baltimore, MD (2 November 2015): *T128. Field and Modeling Approaches to Understanding the Response of Coupled Barrier-Backbarrier Systems to Coastal Change* (co-chair: Jorge Lorenzo-Trueba)

Field Trip Co-Leader, The 106<sup>th</sup> meeting of the New England Intercollegiate Geological Conference (NEIGC), Wellesley MA (10 October 2014): *Ice, water, and wind: A source-to-sink view of the glacial, paraglacial, and coastal sediments and processes that have shaped northeast Massachusetts* (co-leader: Byron Stone, USGS)

Session Co-Chair, Geological Society of America Annual Meeting, Denver, CO (2 November 2010): *T139. The Barrier Island System: Evolution in Response to Changing Sea Levels* (co-chair: Zoe Hughes)

Co-Organizer, Climate Seminar (2008-2010), Department of Earth Sciences, BU

Field Trip Leader, Massachusetts Institute of Technology Sedimentology Class (Dr. Paul Myrow, Professor) - 3 April, 2010: *Field Trip to Plum Island MA*

Field Trip Leader, University of Massachusetts, Amherst Sedimentology Class (Dr. Jon Woodruff, Professor) - 24 April 2010: *Field Trip to Plum Island MA*

### **Institutional Leadership & Major Service: VIMS / W&M**

Fellow, W&M Scholars Undergraduate Research Experience (WMSURE) Program: Jan 2022 – present

Member, VIMS Academic Program Strategic Planning Implementation Team: Sept 2022 – present

Member, VIMS Academic Program Strategic Planning Group: Jan 2022 – June 2022

Coordinator, VIMS/W&M Unlearning Racism in Geosciences (URGE): Spring 2021

### **Institution Committees and Other Service: VIMS / W&M**

VIMS Academic Council: Jan 2018 – present

VIMS Associate Dean of Academic Studies Search Committee: March 2023 – present

W&M Jefferson Awards Committee: Dec 2022

VIMS/W&M Marine Science Minor Advisory Committee: Apr 2019 – July 2021

W&M Studio for Teaching & Learning Innovation (STLI) *New Instructor Mentorship Program*: 2021–2022

VIMS Postdoc Committee: Sept 2015 – June 2021

VIMS Chesapeake Bay Hall Replacement Committee: Nov 2018 – June 2021

VIMS Parking Committee: Oct 2013 – June 2021



VIMS Chemistry Faculty Search Committee: Aug 2018 – Sept 2019

VIMS Faculty Council: Oct 2013 – May 2017

**Institution Sub-Committees, Working Groups, & Panels: VIMS/W&M**

Panelist, W&M Studio for Teaching & Learning Innovation Community Conversation: *Developing Deep Discussion*: Dec 2022

W&M Executive Order 77 Advisory Council: Aug 2021 – Dec 2022

VIMS Strategic Planning Committee - Education: Jan – Feb 2021

VIMS Strategic Planning Committee - Resilience, Conservation, & Restoration: Jan – Feb 2021

Task Force on Incorporating Principles of Diversity, Equity, & Inclusion into the School of Marine Science Curriculum (VIMS/SMS Office of Academic Studies): Nov – Dec 2020

Chair, VIMS Marine Science Major Development Task Force: Oct 2019 – Mar 2020

W&M Curriculum and Research Working Group, Climate Action and Sustainability Subcommittee, W&M Strategic Planning Committee: Sept 2019 – Mar 2020

W&M Education & Outreach Working Group, W&M Sustainability Plan: Jan 2018 – Dec 2019

**Symposia and Workshop Participation**

Recurrent Flooding Workshop: Identifying and Prioritizing Research Needs (funded by National Science Foundation *Coastlines and People (CoPe)* program): Norfolk, VA, 15-16 April 2021.

National Science Foundation *Coastlines and People (CoPe)* Scoping Session: Chicago, IL, 26-28 Sept 2018.

Mitigation and Adaptation Research in Virginia Workshop: Suffolk, VA, 11-13 August 2015.

National Science Foundation *Coastal SEES (Science, Engineering and Education for Sustainability)* PI Meeting: Arlington, VA, 29-30 January 2015.

DISCCRS (Dissertations Initiative for the Advancement of Climate Change Research) VIII Symposium: Colorado Spring, CO, 12-19 October 2013.

Joint Penrose-Chapman Conference 2013: *Coastal Processes and Environments Under Sea-Level Rise and Changing Climate: Science to Inform Management*: Galveston, TX, 14–19 April 2013.

Magellan+ Workshop, Bay of Bengal Drilling: *Records of Geohazards and Monsoonal Changes in the Northern Bay of Bengal - Preparation of an IODP Drilling Proposal*: Bremen, Germany, 8-10 October 2012.

**Reviewing (2013-2022)**

*Funding Panel Participation*: NSF Marine Geology and Geophysics Program (Spring 2021); NSF Geomorphology and Land-Use Dynamics Program (Fall 2019); NSF Marine Geology and Geophysics Program (Spring 2016); NSF Graduate Research Fellowship Program (2015)

*Funding Agencies*: NSF Geobiology & Low Temp Geochemistry (2019, 2020); NSF Geomorphology & Land Use Dynamics (2013, 2014, 2016, 2018, 2019, 2020, 2022); NSF Marine Geology & Geophysics (2017, 2018, 2019, 2020, 2022, 2023); NSF EAR Instrumentation (2018); NSF Postdoctoral Program (2016, 2021); NSF CAREER Program (Arctic Programs; 2017, 2018); Natural Sciences and Engineering Research Council of Canada (2023); Delaware Sea Grant (2019); PRESTIGE Postdoc Program (France, EU) (2016); RESTORE Act Center of Excellence for Louisiana (2017); American Chemical Society Petroleum Research Fund (2017); North Carolina Sea Grant (2021)

*Peer-Reviewed Journals*: Chemical Geology; Climates of the Past; Continental Shelf Research; Earth and Planetary Science Letters; Earth Surface Processes Letters; Ecology; Ecosystems; Estuaries and Coasts; E-Surf; Frontiers; G<sup>3</sup>; Geochimica et Cosmochimica Acta; Geology; Geo-Marine Letters; Geological Society of London; Geophysical Research Letters; Geomorphology; Geology; Journal of Coastal Research; Journal of Geophysical Research – Earth Surface; Journal of Geophysical Research – Oceans; ; Journal of South American Earth Sciences; Marine Geology; Natural Hazards; Quaternary Science Reviews; Scientific Reports; Sedimentology; Terra Nova; Thalassas; The Holocene; Wiley Inc. book

*Other*: National Parks Service report reviewer (2016), Promotion & Tenure (anon., 2020)

**Professional Affiliations (current)**

American Geophysical Union (AGU); Geological Society of America (GSA); International Union for Quaternary Research (INQUA); American Quaternary Association (AMQUA)

## **OUTREACH ACTIVITIES/SERVICE**

### **Public Advisory Board Membership**

Member: City of Norfolk Coastal Management & Review Board; Nov 2016 - present

Member: Science Advisory Board, *Storm Surge: Merrimack Valley Coastal Adaptation Workgroup*; 2020 - 2022

### **Outreach Workshop Coordination**

Lead Organizer, North Carolina Dune Management Workshop (virtual) (27 October 2021): *Cultivating a Better Understanding of Local Coastal Dune Dynamics & Management Needs*

Lead Organizer, Stakeholder Input Workshop, Wachapreague, VA (16 January 2020): *Cedar Island Marsh Restoration Project: Field Work, Data Analysis, Marsh Template Design: Public Presentation and Stakeholder Input*

Lead Organizer, Sea Grant Outreach Workshop, Wachapreague, VA (9 November 2018): *Investigating Connections between Barrier Islands & Marshes: Past, Present, and Future Coastal Change along the Seaside of Virginia's Eastern Shore*

Co-Organizer, Sea Grant Outreach Workshop, Tuckerton, NJ (12 October 2018): *Investigating Connections between Barrier Beaches and Mainland Marshes*

### **Panelist Participation**

Webinar Panelist: Lynnhaven River Now – *Dune Systems and Coastal Resiliency in Virginia Beach*; 17 Nov 2020

Panelist: EPA / Massachusetts Bays Program - *Climate Ready Estuaries Expert Elicitation Workshop: Salt Marsh Vulnerability Assessment* - Boston, MA; 27–28 April 2010

### **Public Outreach Talks**

25. Crown Colony Club of Williamsburg (Williamsburg, VA) (27 September 2023): *The Future of Virginia's Barrier Coast*

24. North Landing River & Albemarle Sound Estuarine Symposium Featured Speaker (Virginia Beach, VA) (31 March 2023): *Dunes: More than Just a Pile of Sand*

23. Museum of Chincoteague & Chincoteague Island Theater Featured Speaker (Chincoteague, VA) (29 October 2022): *Barrier Islands Past, Present, Future: Studying the History of Virginia's Barrier Islands to Better Predict the Fate of Chincoteague*

23. Alexandria Public Library Science Seminar Series (Alexandria, VA) (11 June 2022): *The Future of Virginia's Barrier Coast*

22. Chincoteague Town Council (Chincoteague, VA) (29 October 2021): *Modeling Chincoteague Inlet to Improve Management & Plan for the Future of Chincoteague* (presentation to US Representative Elaine Luria and staff)

21. NOAA Science Seminar Series (virtual) (28 September 2021): *Linked by sand: Leveraging natural synergies between saltmarshes and barrier islands to improve coastal resiliency*

20. Chincoteague Town Council (Chincoteague, VA) (16 September 2021): *Modeling Chincoteague Inlet to Improve Management & Plan for the Future of Chincoteague*

19. Museum of Chincoteague (Chincoteague, VA) (3 August 2021): *Unraveling the History of Chincoteague to Better Predict its Future*

18. Seaford Yacht Club Public Lecture Series (Yorktown, VA) (15 February 2020): *Virginia's Barrier Islands: Breakneck Change in a Rapidly Changing World*

17. Storm Surge: Lower Merrimack Valley Climate Adaptation Working Group (Newbury, MA) (27 December 2019): *The river, the sea, & the jetty: Plum Island's dynamic beaches*

16. Museum of Chincoteague (Chincoteague, VA) (9 July 2019): *Barrier Island Dynamics & Change along the Northern Virginia Eastern Shore*

15. Virginia Coast Avian Partnership (Cape Charles, VA) (22 March 2019): *The Changing Landscape of the Virginia Barrier Islands*

14. City of Chincoteague Town Council (Chincoteague, VA) (21 March 2019): *Barrier Island Dynamics & Change along the Northern Virginia Eastern Shore*

13. Historic Rivers Chapter of the Virginia Master Naturalists (Norge, VA) (14 February 2019): *Virginia's Barrier Islands: Breakneck Change in a Rapidly Changing World*

12. VIMS After Hours Public Lecture Series (Gloucester Point, VA) (31 January 2019): *Virginia's Barrier Islands: Breakneck Change in a Rapidly Changing World*
11. W&M Christopher Wren Society (Williamsburg, VA) (19 April 2018): *The Dynamics of Barrier Islands*
10. Eastern Shore Barrier Islands Center Coffee Hour Lecture Series (Machipongo, VA) (16 March 2018): *Virginia's Barrier Islands: Breakneck Change in a Rapidly Changing World*
9. VIMS Eastern Shore Lab Public Seminar (Wachapreague, VA) (8 November 2017): *Virginia's Barrier Islands: Breakneck Change in a Rapidly Changing World*
8. Science Museum of Virginia: Climate Connections Lecture Series (Richmond, VA) (15 March 2017): *Geologic Studies of Barrier Islands: Helping Society Better Understand and Respond to Changes Affecting the Outer Banks and Virginia's Eastern Shore*
7. Virginia Coast Avian Partnership (Melfa, VA) (8 March 2017): *Mapping Geologic & Geomorphic Change along Virginia's Barrier Island Systems*
6. Rappahannock Community College: Rappahannock Institute for Lifelong Learning (Gloucester Point, VA) (12 March 2015): *Sea-Level Rise in Virginia: Part I - Long-Term Changes, Causes, & Coastal System Responses*
5. VIMS After Hours Public Lecture Series (Gloucester Point, VA) (31 July 2014): *Barrier islands past, present and future*
4. UNC Coastal Studies Institute Science on the Sound Public Lecture Series (Wanchese, NC) (26 March 2014): *Soundfronts, Shorelines, and Sediments: How Does Upstream Management Affect Coasts?*
3. VIMS Eastern Shore Lab Public Seminar (Wachapreague, VA) (6 November 2013): *Sea Level: The Once and Future King (of coastal change)*
2. Eight Towns and the Bay Speaker Series (Newbury, MA) (16 March 2009): *Formation and Evolution of the Plum Island Barrier System*
1. The Great Marsh Symposium, Parker River National Wildlife Refuge (Newburyport, MA) (11 April 2009): *Sheltering the Great Marsh: Formation and Evolution of the Plum Island Barrier System*

#### SCHOLARLY PUBLICATIONS AND PRESENTATIONS

\*VIMS graduate student author      †W&M/BU undergraduate student author      ‡collaborating student author

#### Publications in Progress

**Hein, C.J.**, Connell, J.E., FitzGerald, D.M., Hughes, Z., Georgiou, I.Y., King, K., *in revision*. Vertical accretion in high-exposure saltmarshes outpaces sea-level rise in the southeast USA, *Communications: Earth & Environment*.

\*Barksdale, M.B., **Hein, C.J.**, Kirwan, M.L., *in press*. Shoreface erosion counters blue carbon accumulation in transgressive barrier-island systems, *Nature Communications*.

\*Davis, E.H., **Hein, C.J.**, Cohn, N., Zinnert, J., White, A., *in review*. Differences in internal sedimentologic and biotic structure between natural, managed, and constructed coastal foredunes, *Geomorphology*.

#### Peer-Reviewed Publications

44. **Hein, C.J.** and Kirwan, M.L., *in press*. Marine transgression in modern times, *Annual Reviews of Marine Science*. doi: 10.1146/annurev-marine-022123-103802.

43. †Wilson, F.L.G., Klein, A.H.F., Mahiques, M.M., **Hein, C.J.**, de Sousa, L.A.P., Cooper, J.A.G., Green, A., 2023. Holocene barrier overstepping, estuarine rollover and drainage merging in a sub-tropical bay, *Marine Geology*, v. 462, p. 107076. doi: 10.1016/j.margeo.2023.107076

42. Georgiou, I.Y., Messina, F., †Sakib, M.M., Zou, S., Foster-Martinez, M., Bregman, M., **Hein, C.J.**, Fenster, M.S., \*Shawler, J.L., †McPherran, K., Trembanis, A.C., 2023. Hydrodynamics and Sediment-Transport Pathways along a Mixed-Energy Spit-Inlet System: A Modeling Study at Chincoteague Inlet (Virginia, USA), *Journal of Marine Science and Engineering*, v. 11, p. 1075. <https://doi.org/10.3390/jmse11051075>.

41. Mariotti, G., **Hein, C.J.**, 2022. Lag in response of coastal barrier-island retreat to sea-level rise, *Nature Geoscience*, v. 15, p. 633–638. doi: 10.1038/s41561-022-00980-9

40. †Robbins, M.G., \*Shawler, J.L., **Hein, C.J.**, 2022. Contribution of longshore sand exchanges to mesoscale barrier-island behavior: Insights from the Virginia Barrier Islands, U.S. East Coast, *Geomorphology*, v. 403, p. 108163. doi: 10.1016/j.geomorph.2022.108163

39. Lees, D.C., **Hein, C.J.**, FitzGerald, D.M. 2022. Measuring organization of large surficial clasts in heterogeneous gravel beach sediments. *Journal of Marine Science and Engineering*, v. 10, p. 525. doi: 10.3390/jmse10040525.
38. FitzGerald, D.M., Hughes, Z.J., †Staro, A., **Hein, C.J.**, †Sakib, M.M., Georgiou, I.Y., Novak, A., 2022. Following the sand grains, *Journal of Marine Science and Engineering*, v. 10, p. 631. doi: 10.3390/jmse10050631.
37. **Hein, C.J.**, Fenster, M.S., Gedan, K.B., Tabar, J.R., Hein, E.A., DeMunda, T., 2021. Leveraging the interdependencies between barrier islands and backbarrier saltmarshes to enhance resilience to sea-level rise, *Frontiers of Marine Science*, v. 8, p. 721904. doi: 10.3389/fmars.2021.721904
36. †Shawler, J.L., **Hein, C.J.**, †Obara, C.A., †Robbins, M.G., Hout, S., Fenster, M.S., 2021. The effect of coastal landform development on decadal- to millennial-scale longshore sediment fluxes: Evidence from the Holocene evolution of the central mid-Atlantic coast, USA, *Quaternary Science Reviews*, v. 267, p. 107096, doi: 10.1016/j.quascirev.2021.107096.
35. †Shawler, J.L., †Ciarletta, D.J., Connell, J.E., †Boggs, B.Q., Lorenzo-Trueba, J., **Hein, C.J.**, 2021. Relative influence of antecedent topography and sea-level rise on barrier-island migration, *Sedimentology*, v. 68(2), p. 639-669, doi: 10.1111/sed.12798.
34. FitzGerald, D.M., **Hein, C.J.**, †Connell, J.E., Hughes, Z.J., Georgiou, I.Y., Novak, A., 2021. Largest marsh in New England near a precipice, *Geomorphology*, v. 379, p. 107625, doi: 10.1016/j.geomorph.2021.107625.
33. Ciarletta, D.J., Miselis, J.L., †Shawler, J.L., **Hein, C.J.**, 2021. Quantifying thresholds of barrier geomorphic change in a cross-shore sediment portioning model, *Earth Surface Dynamics*, v. 9, p. 183-203, doi: 10.5194/esurf-9-183-2021.
32. Wehmiller, J.F., Brothers, L.L., Ramsey, K.W., Foster, D.S., Mattheus, C.R., **Hein, C.J.**, †Shawler, J.L., 2021, Molluscan aminostratigraphy of the US Mid-Atlantic Quaternary coastal system: Implications for onshore-offshore correlation, paleochannel and barrier island evolution, and local late Quaternary sea-level history, *Quaternary Geochronology*, v. 66, p. 101177, doi: 10.1016/j.quageo.2021.101177
31. **Hein, C.J.**, Usman, M., Eglinton, T.I., Haghypour, N., Galy, V.V., 2020. Millennial-scale hydroclimate control of tropical soil carbon storage, *Nature*, v. 581, p. 63-66, doi: 10.1038/s41586-020-2233-9.
30. †Silva, A.P., Klein, A.H.F., Fetter Filho, A.F.H., **Hein, C.J.**, Mendez, F.J., Broggio, M.F., Dalinghaus, C., 2020. Climate-induced variability in South Atlantic wave direction over the past three millennia, *Scientific Reports*, v. 10, 18553, doi: 10.1038/s41598-020-75265-5.
29. FitzGerald, D.M., †Ryerson, O., Hughes, Z., †Black, S., Georgiou, I., **Hein, C.J.**, Novak, A., 2020. Long-term variability in inorganic sediment contributions to the Great Marsh, Massachusetts. *Journal of Coastal Research*, SI 95, p. 11-15.
28. **Hein, C.J.**, †Fallon, A.R., Rosen, P., Hoagland, P., Georgiou, I.P., FitzGerald, D.M., Morris, M., †Baker, S., †Marino, G.B., Fitzsimons, G., 2019. Shoreline dynamics along a developed river-mouth barrier island: Multi-decadal cycles of erosion and event-driven mitigation. *Frontiers in Earth Science*, v. 7, 103, doi: 10.3389/feart.2019.00103.
27. †Shawler, J.L., **Hein, C.J.**, Canuel, E.A., Kaste, J.M., Fitzsimons, G.G., Georgiou, I.Y., Willard, D.A., 2019. Tidal erosion and upstream sediment trapping modulate records of land-use change in a formerly glaciated New England estuary, *Anthropocene Coasts*, v. 2, p. 340-361, doi: 10.1139/anc-2018-0034.
26. †Ciarletta, D.J., †Shawler, J.L., †Tenebruso, C., **Hein, C.J.**, Lorenzo-Trueba, J., 2019. Reconstructing coastal sediment budgets from beach- and foredune- ridge morphology: A coupled field and modeling approach, *Journal of Geophysical Research Earth Surface*, v. 124, p. 1398-1416, doi: 10.1029/2018JF004908.
25. **Hein, C.J.**, Ten Hoeve, T.E., Gopalakrishnan, S., Livneh, B., Adams, H.D., Marino, E.K., Weiler, C.S., 2018. Overcoming early career barriers to interdisciplinary climate change research, *Wiley Interdisciplinary Reviews: Climate Change*, v. 9, e530. doi:10.1002/wcc.530.
24. †Raff, J.L., †Shawler, J.L., †Ciarletta, D.J., Hein, E.A., Lorenzo-Trueba, J., **Hein, C.J.**, 2018. Insights into barrier-island stability derived from transgressive/regressive state changes of Parramore Island, Virginia, *Marine Geology*, v. 403, p. 1-19, doi:10.1016/j.margeo.2018.04.007.

23. French, K.L., **Hein, C.J.**, Haghypour, N., Wacker, L., Kudrass, H., Eglinton, T.I., Galy, V.V., 2018. Millennial soil retention of terrestrial organic matter deposited in the Bengal Fan, *Scientific Reports*, v. 8, 11997, doi: 10.1038/s41598-018-30091-8.
22. †Billy, J., Robin, N., **Hein, C.J.**, FitzGerald, D.M., Certain, R., 2018. Impact of relative sea-level changes since the last deglaciation on the formation of a composite paraglacial barrier, *Marine Geology*, v. 400, p. 76-93, doi:10.1016/j.margeo.2018.03.009.
21. †Billy, J., Robin, N., **Hein, C.J.**, FitzGerald, D.M., Certain, R., 2018. Dominance of inherited geologic framework on the development of a coastal barrier system, *Journal of Coastal Research*, SI 85, p. 406-410, doi:10.2112/SI85-082.1.
20. **Hein, C.J.**, Galy, V.V., Galy, A., France-Lanord, C., Kudrass, H., 2017. Post-glacial climate forcing of surface processes in the Ganges-Brahmaputra River Basin and implications for the global carbon cycle, *Earth and Planetary Science Letters*, v. 478, p. 89-101, doi:10.1016/j.epsl.2017.08.013.
19. †Deaton, C.D., **Hein, C.J.**, Kirwan, M.L., 2017. Barrier-island migration dominates ecogeomorphic feedbacks and drives salt marsh loss along the Virginia Atlantic Coast, USA, *Geology*, v. 45, p. 123-126, doi:10.1130/G38459.1.
18. \*Fallon, A.R., Hoagland, P., Jin, D., †Phalen, B., Fitzsimons, G., **Hein, C.J.**, 2017. Adapting without retreating: Responses to shoreline change on an inlet-associated coastal beach, *Coastal Management*, v. 45, n. 5, p. 360-383, doi:10.1080/08920753.2017.1345607.
17. **Hein, C.J.**, FitzGerald, D.M., †de Souza, L.H.P., Georgiou, I.Y., Buynevich, I.V., Klein, A.H.F., de Menezes, J.T., Cleary, W.J., \*Scolaro, T., 2016. Complex coastal change in response to autogenic basin infilling: An example from a sub-tropical Holocene strandplain, *Sedimentology*, v. 63, no. 6, p. 1362-1395, doi: 10.1111/sed.12265.
16. **Hein, C.J.**, Fitzsimons, G.G., FitzGerald, D.M., \*Fallon, A.R., 2016. Records of migration and ebb-delta breaching at historic and ancient tidal inlets along a river-fed paraglacial barrier island, *Journal of Coastal Research*, SI 75, p. 228-232, doi: 10.2112/SI75-46.1.
15. †Rogers, L.J., Moore, L.J., Goldstein, E.B., **Hein, C.J.**, Lorenzo-Trueba, J., Ashton, A.D., 2015. Anthropogenic controls on overwash deposition: Evidence and consequences, *Journal of Geophysical Research - Earth Surface*, v. 120, p. 2609-2624, doi: 10.1002/2015JF003634.
14. †Billy, J., Robin, N., **Hein, C.J.**, Certain, R., FitzGerald, D.M., 2015. Insight into the Late Holocene sea-level changes in the NW Atlantic from a paraglacial beach-ridge plain south of Newfoundland, *Geomorphology*, v. 248, p. 134-146, doi:10.1016/j.geomorph.2015.07.033.
13. **Hein, C.J.**, FitzGerald, D.M., Buynevich, I.V., van Heteren, S., Kelley, J.T., 2014. Evolution of paraglacial coasts in response to changes in fluvial sediment supply, *Geological Society, London, Special Publication*, 388, p. 247-280, doi: 10.1144/SP388.15.
12. **Hein, C.J.**, FitzGerald, D.M., Cleary, W.J., Klein, A.H.F., de Menezes, J.T., Albernaz, M.B., 2014. Coastal response to late-stage transgression and sea-level highstand, *Geological Society of America Bulletin*, v. 126, no. 3/4, p. 459-480, doi: 10.1130/B30836.1.
11. **Hein, C.J.**, FitzGerald, D.M., Klein, A.H.F., †Albernaz, M.B., de Menezes, J.T., Cleary, W.J., 2014. Reply to the Discussion by Dillenburg et al. on "Evidence for a transgressive barrier within a regressive strandplain system: implications for complex response to environmental change" by Hein et al. (2013), *Sedimentology* 60, 469-502: A transgressive barrier at Pinheira, Southern Brazil around 3 ka?", *Sedimentology*, v. 61, no. 7, p. 2213-2217. doi: 10.1111/sed.12133.
10. †Billy, J., Robin, N., **Hein, C.J.**, Certain, R., FitzGerald, D.M., 2014. Internal architecture of mixed sand-and-pebble beach ridges: Miquelon-Langlade Barrier, NW Atlantic, *Marine Geology*, v. 357, p. 53-71, doi: 10.1016/j.margeo.2014.07.011.
9. **Hein, C.J.**, FitzGerald, D.M., Barnhardt, W.A., Stone, B.D., 2013. Onshore-offshore surficial geologic map of the Newburyport East and northern half of the Ipswich Quadrangles, Massachusetts, *Massachusetts Geological Survey*, Geologic Map GM 13-01, map scale 1:24,000, 3 sheets.
8. **Hein, C.J.**, FitzGerald, D.M., Cleary, W.J., †Albernaz, M.B., de Menezes, J.T., Klein, A.H.F., 2013. Evidence for a transgressive barrier within a regressive strandplain system: Implications for complex coastal response to environmental change, *Sedimentology*, v. 60, p. 469-502, doi: 10.1111/j.1365-3091.2012.01348.x.

7. †Billy, J., Robin, N., Certain, R., **Hein, C.J.**, Berné, S., 2013. Barrier shoreline evolution constrained by shoreface sediment reservoir and substrate control: The Miquelon-Langlade Barrier, NW Atlantic, *Journal of Coastal Research*, SI 65, p. 2089-2094.
6. **Hein, C.J.**, FitzGerald, D.M., †Carruthers, E.A., Stone, B.D., Barnhardt, W.A., Gontz, A.M., 2012. Refining the model of barrier island formation along a paraglacial coast in the Gulf of Maine, *Marine Geology*, v. 307-310, p. 40-57, doi: 10.1016/j.margeo.2012.03.001.
5. **Hein, C.J.**, FitzGerald, D.M., Milne, G.A., Bard, K.A., Fattovich, R., 2011. Evolution of a Pharaonic harbor on the Red Sea: Implications for coastal response to changes in sea level and climate, *Geology*, v. 39, no. 7, p. 687-690, doi: 10.1130/G31928.1.
4. Buynevich, I.V., Klein, A. H. F., FitzGerald, D.M., Cleary, W.J., **Hein, C.J.**, †Veiga, F.A., Angulo, R.J., Asp, N.E., †Petermann, R., 2011. Geological legacy of storm erosion along a high-energy indented coastline: northern Santa Catarina, Brazil, *Journal of Coastal Research*, SI 64, p. 1840-1844.
3. **Hein, C.J.**, FitzGerald, D., Barnhardt, W., 2007. Holocene reworking of a sand sheet in the Merrimack Embayment, Western Gulf of Maine, *Journal of Coastal Research*, SI 50, p. 863-867.
2. FitzGerald, D.M., Cleary, W.J., Buynevich, I.V., **Hein, C.J.**, Klein, A.H.F., Asp, N., Angulo, R., 2007. Strandplain evolution along the southern coast of Santa Catarina, Brazil, *Journal of Coastal Research*, SI 50, p. 152-156.
1. Taylor, G.T., **Hein, C.**, Iabichella, M., 2003. Temporal variations in viral distributions in the anoxic Cariaco Basin, *Aquatic Microbial Ecology*, 30, p. 103-116.

#### Reviewed Book Chapters and Open-File Reports

7. McBride, R.A. (co-authors in alphabetical order), Anderson, J.B., Buynevich, I.V., Byrnes, M.R., Cleary, W., Fenster, M.S., FitzGerald, D.M., Hapke, C.J., Harris, M.S., **Hein, C.J.**, Johnson, C.L., Klein, A.H.F., Liu, B., de Menezes, J.T., Mulhern, J.S., Oliver, T.S.N., Pejrup, M., Riggs, S.R., Roberts, H.H., Rodriguez, A.B., Seminack, C.T., Short, A.D., Stone, G.W., Tamura, T., Wallace, D.J., and Wang, P., 2022. Morphodynamics of Modern and Ancient Barrier Systems: An Updated and Expanded Synthesis. In: Shroder, J.J.F. (Editor in Chief), *Treatise on Geomorphology, Volume 8*. Elsevier, Academic Press, p. 289-417, doi: 10.1016/B978-0-12-818234-5.00153-X.
6. **Hein, C.J.**, Ashton, A.D. 2020. Long-term shoreline change: Processes & preservation of environmental signals, In: Short, A.D., Jackson, D. (eds), *Sandy Beach Morphodynamics*, Elsevier, p. 487-531, doi: 10.1016/B978-0-08-102927-5.00021-7.
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4. Galy, V., **Hein, C.J.**, France-Lanord, C., Eglinton, T., 2014. The evolution of carbon signatures carried by the Ganges-Brahmaputra River system: a source-to-sink perspective, In: Bianchi, T., Allison, M., and Cai, W.-J. (eds), *Biogeochemical Dynamics at Major River-Coastal Interfaces: Linkages with Global Change*, Cambridge, England: Cambridge University Press, p. 353-372.
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32. **Hein, C.J.**, Pilarczyk, J.E., Brain, M., Green, A.N., Lau, A.Y.A., Ramos, N., 2023. From cores to code: Enhancing data-model integration to improve forecasts of coastal change – An introduction to IGCP Project 725, In: *Coastal Sediments '23*, Proceedings of the 13<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, World Scientific Publishing Co., Singapore, p. 2340-2354, [https://doi.org/10.1142/9789811275135\\_0215](https://doi.org/10.1142/9789811275135_0215).
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28. †Galvão, W.F.L., Klein, A.H.d.F., de Mahiques, M.M., **Hein, C.J.**, de Sousa, L.A.P., Cooper, A., Green, A., 2023. Impact of Sub-tropical incised valley infill along the Upper Pleistocene and Holocene on the coastal evolution of Babitonga Bay, In: *Coastal Sediments '23*, Proceedings of the 13<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, World Scientific Publishing Co., Singapore, p. 2391-2397, [https://doi.org/10.1142/9789811275135\\_0219](https://doi.org/10.1142/9789811275135_0219)
27. †McPherran, K., Trembanis, A., **Hein, C.J.**, Georgiou, I.Y., 2023. Impact of wave climate on interannual to decadal trends in shoreline change at Fishing Point, Virginia, USA, In: *Coastal Sediments '23*, Proceedings of the 13<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, World Scientific Publishing Co., Singapore, p. 57-70, [https://doi.org/10.1142/9789811275135\\_0006](https://doi.org/10.1142/9789811275135_0006)
26. Buynevich, I.V., FitzGerald, D.M., Klein, A. H. F., **Hein, C.J.**, and Cleary, W.J., 2023. Cyclone-generated geoidicators along Camboriú headland beaches and Navegantes strandplain, Brazil, In: *Scientific Research in the Modern World, Proceedings of the 5th International Scientific and Practical Conference*. Perfect Publishing, Toronto, Canada, p. 162-167.
25. \*Cahoon, K., †Clarke, C.G., Fenster, M.S., †Vaughn, J.P., Hein, C.J., 2022. Onshore-Offshore Surficial geologic Map of the Wachapreague Quadrangle with Additional Surrounding Fractions of the Pungoteague, Accomack, Metompkin, Exmore, Wachapreague East, Nassawadox, and Quinby Quadrangles. unpublished EDMAP geologic map, 1:64,000.
24. †Leite Galvão, W.F., Klein, A.H.d.F., de Mahiques, M., **Hein, C.J.**, Prado, M.F.V., Pinto, M.W., Pandolpho, B.T., Dias, R.J.S., Connell, J., Tureck, C.R., L.L., 2022. Datasets: Holocene barrier overstepping, estuarine rollover and drainage merging in a sub-tropical bay, Mendeley Data, V1, <https://doi.org/10.17632/vw3c7t3gm3.1>
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20. **Hein, C.J.**, Usman, M., Eglinton, T., Haghipour, N., Galy, V., 2020. Bulk sediment organic radiocarbon analyses of sediment cores from the Bay of Bengal, *EarthChem Library (ECL)*, <https://doi.org/10.1594/IEDA/111487>.

19. **Hein, C.J.**, Eglinton, T., Haghypour, N., Galy, V., 2020. Radiocarbon ages of sediment core samples from the Bay of Bengal, *EarthChem Library (ECL)*, <https://doi.org/10.1594/IEDA/111486>.
18. **Hein, C.J.**, \*Shawler, J.L., De Camargo, J.M., Klein, A.H.F., †Tenebruso, C., Fenster, M.S., 2019. The role of coastal sediment sinks in modifying longshore sand fluxes: Examples from the coasts of southern Brazil and the Mid-Atlantic USA, In: *Coastal Sediments '19*, Proceedings of the 12<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, World Scientific Publishing Co., Singapore, p. 2330–2344.
17. \*Shawler, J.L., †Ciarletta, D.J., Lorenzo-Trueba, J., **Hein, C.J.**, 2019. Drowned foredune ridges as evidence of pre-historic barrier-island state changes, In: *Coastal Sediments '19*, Proceedings of the 12<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, World Scientific Publishing Co., Singapore, p. 158-171.
16. **Hein, C.J.**, Galy, V.V., Galy, A., France-Lanord, C., Kudrass, H., 2018. Radiocarbon ages of sediment core samples from the Bay of Bengal. *EarthChem Library (ECL)*, <http://dx.doi.org/10.1594/IEDA/111212>.
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13. **Hein, C.J.**, Georgiou, I.Y., FitzGerald, D.M., †de Souza, L.H.P., Klein, A.H.F., de Menezes, J.T., 2015. Wave energy, sediment supply, and sea-level fall: Late Holocene basin infilling in southern Brazil, In: *Coastal Sediments '15*, Proceedings of the 11<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes.
12. \*Fallon, A.R., **Hein, C.J.**, Rosen, P.S., †Gannon, H.L., 2015. Cyclical shoreline erosion: The impact of a jettied river mouth on the downdrift barrier island, In: *Coastal Sediments '15*, Proceedings of the 11<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes.
11. **Hein, C.J.**, Stone, B.D., 2014. Ice, water, and wind: A source-to-sink view of the glacial, paraglacial, and coastal sediments and processes that have shaped northeast Massachusetts, In: Thompson, M., *Field Trip Guide for the 106<sup>th</sup> Meeting of the New England Intercollegiate Geological Conference (NEIGC)*, Wellesley MA, 10 October 2014, Field Trip A5, 38 p.
10. Lees, D.C., **Hein, C.J.**, FitzGerald, D.M., Carruthers, E.A., 2013. *Re-assessment of Bivalve Recovery on Washed Heterogeneous Beaches in Prince William Sound*, EXXON VALDEZ Oil Spill Restoration Project Draft Final Report, Restoration Project 10100574, 165 p.
9. Rits, M., FitzGerald, D.M., **Hein, C.J.**, 2013. *A Multi-year Investigation of the Coastal Setting and Sediment-Transport Patterns at 137 Eel Point Road, Nantucket*, Assessment Report, 80 p.
8. Robin, N., Billy, J., Barthe, P., Barousseau, J.P., Carvalho, E., Certain, R., Chanoué, M., FitzGerald, S., **Hein, C.**, Michel, C., Millescamps, B., Raynal, O., Wilson, C., Wright, S., 2013. *Etude globale de l'isthme de Miquelon-Langlade*, Final Report, Université de Perpignan Via Domitia, 282 p.
7. **Hein, C.J.**, FitzGerald, D.M., Stone, B.D., †Carruthers, E.A., Gontz, A.M., 2011. The role of backbarrier infilling in the formation of barrier island systems, In: Kraus, N.C., and Rosati, J.D. (Eds), *Coastal Sediments '11*, Proceedings of the 8<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, p. 687–690.
6. **Hein, C.J.**, FitzGerald, D.M., Barnhardt, W.A., Stone, B.D., 2010. *Onshore-offshore surficial geologic map of the Newburyport East Quadrangle, Massachusetts*, StateMap Preliminary Map (non-reviewed), 1 sheet.
5. **Hein, C.J.**, 2010. *Barrier Island Formation, Evolution, Modern Processes, and Challenges: Plum Island MA*, Field Trip Guide, 30 p.
4. **Hein, C.J.**, FitzGerald, D.M., 2009. *The Search for a Middle Kingdom Harbor: Geological Investigations at Mersa/Wadi Gawasis, Egypt*, MUSEUM EXHIBIT, Museum of Egyptian Antiquities (Cairo, Egypt).
3. **Hein, C.J.**, FitzGerald, D.M., 2009. *Documenting sand and gravel resources on the inner continental shelf: Merrimack Embayment, New England*, report to the US Minerals Management Service, 83 p.



2. **Hein, C.J.**, FitzGerald, D., Barnhardt, W., 2007. Holocene evolution of the Merrimack Embayment, Northern Massachusetts, interpreted from shallow seismic stratigraphy, *In: Kraus, N.C., Rosati, J.D. (eds), Coastal Sediments '07, Proceedings of the 6<sup>th</sup> International Symposium on Coastal Engineering and Science of Coastal Sediment Processes: New Orleans, LA, 13-17 May, 2007, p. 856-866.*
1. Klein, A.H., FitzGerald, D.M., Cleary, W.J., Abreu, J.G.N, Menezes, J.T., Petermann, R., **Hein, C.J.**, Buynevich, I.V., 2006. *Field Trip Guidebook of Santa Catarina Coast, Brazil*, Third IGCP-495 Quaternary Land-Ocean Interactions: Natural and Human Forcings on Coastal Evolution. 33 p.

### Invited Research Talks

26. University of Florida Geosciences Department Seminar (1 December 2022): *Mesoscale barrier-system dynamics in response to sea-level rise: New insights from the Virginia Barrier Islands*
25. Old Dominion University Ocean & Earth Sciences (OES) Seminar (7 October 2021): *The mesoscale dynamics of barrier system response to sea-level rise*
24. University of Southern California Lithospheric Dynamics Seminar (virtual) (15 April 2020): *Beach-ridge systems as archives of Holocene coastal change*
23. Montclair State University PhD program in Environmental Science and Management Sustainability Seminar (virtual) (31 March 2020): *Island-marsh couplings and the sustainability of barrier-island systems in the face of accelerated sea-level rise*
22. University of Maryland Center for Environmental Science Horn Point Lab (Cambridge, MD) (28 November 2018): *Island-marsh couplings and the stability of barrier-island systems in the face of accelerated sea-level rise*
21. Lamont-Doherty Earth Observatory Division of Biology & Paleo Environment (Palisades, NY) (1 October 2018): *Reconstructing Holocene sea level, climate, and coastal processes from beach-ridge archives*
20. Coastal Carolina University, Department of Coastal & Marine Systems Science (Conway, SC) (29 March 2018): *Island-marsh couplings and the stability of barrier-island systems in the face of accelerated sea-level rise*
19. Webinar on Geological Research of the North Atlantic Ocean (presented online) (10 March 2017): *Coastal response to autogenic & climatic changes: An example from the Tijucas River / Strandplain, southern Brazil*
18. Montclair State University, Department of Earth and Environmental Studies (Montclair, NJ) (21 February 2017): *Beach-ridge systems as archives of Holocene coastal change*
17. Universidade Federal de Santa Catarina, Department of Chemistry (Florianópolis, SC, Brazil) (21 April 2016): *Regressive beach- and dune- ridge systems as archives of Holocene coastal change*
16. Sustainable Adaptive Gradients in the Coastal Environment (SAGE) Research Network: Local Solutions: Eastern Regional Climate Preparedness Conference: Workshop on Coastal Adaptation Planning, Implementation and Policy (Baltimore, MD) (4 April 2016): *Coastal geomorphology and its impact on susceptibility of coastal zones to slow and fast onset events*
15. University of North Carolina at Chapel Hill, Department of Geological Sciences (Chapel Hill, NC) (19 November 2015): *Beach-ridge systems as archives of Holocene coastal change*
14. Sustainable Adaptive Gradients in the Coastal Environment (SAGE) Research Network: The Fundamentals of Coastal Adaptation Workshop (Boston, MA) (8 September 2015): *The role of geomorphology on the susceptibility of the coastal zone to climate change*
13. Virginia Polytechnic Institute and State University, Department of Geosciences (Blacksburg, VA) (24 April 2015): *Strandplain sedimentary sequences as recorders of coastal response to Holocene change*
12. Universidade Federal de Santa Catarina, Laboratory of Coastal Oceanography (Florianópolis, SC, Brazil) (17 April 2015): *Coupled Barrier-Backbarrier Dynamics and the Evolution of Barrier-Island Systems*
11. Universidade do Vale do Itajaí, Laboratory of Geological Oceanography, Laboratory of Biodiversity Informatics and Geomatics (Itajaí, SC, Brazil) (16 April 2015): *The role of tidal inlets in barrier island formation and stability Part I: Barrier-inlet processes and the formation of Plum Island barrier island, Massachusetts, USA*
10. Old Dominion University, Center for Coastal Physical Oceanography, Mitigation & Adaptation Research Institute (Norfolk, VA) (29 September 2014): *Beyond sea-level rise: Coastal response to climate-driven changes in fluvial sediment supply*
9. W&M Department of Anthropology (Williamsburg, VA) (24 September 2014): *Sea-level and climate change along the African Red Sea coast: Impacts on ancient Egyptian civilization & implications for the future of our coasts*

8. University of North Carolina Coastal Studies Institute (Wanchese, NC) (26 March 2014): *The role of backbarrier sedimentation on the formation of barrier island systems*
7. University of Massachusetts, Amherst, Department of Geosciences (Amherst, MA) (29 March 2013): *Beyond sea-level rise: Complex coastal response to Holocene climate change*
6. Universidade do Vale do Itajaí, Lab. of Geoprocessing and Remote Sensing (Itajaí, SC, Brazil) (17 April 2012): *River-associated coastlines as recorders of Holocene environmental change*
5. Universidade Federal de Santa Catarina, Laboratory of Coastal Oceanography (Florianópolis, SC, Brazil) (16 April 2012): *River-associated coastlines as recorders of Holocene environmental change*
4. Plum Island Ecosystem LTER All Scientists Meeting (Woods Hole, MA) (29 March 2012): *The big (geologic) picture: Formation of the Plum Island barrier system*
3. University of Alabama, Department of Geological Sciences (Tuscaloosa, AL) (27 March 2011): *Coastal strandplains as recorders of Holocene environmental change*
2. University of Rhode Island, Department of Geosciences (Kingston, RI) (9 March 2011): *Coastal strandplains as recorders of Holocene environmental change*
1. WHOI, Marine Chemistry and Geochemistry Department (Woods Hole, MA) (18 January 2011): *Geophysical examination of coastal barrier Systems in Southern Brazil: Implications for Holocene sea-level change in the Southern Hemisphere*

### Conference Abstracts

(note: abstracts only listed if presented by Hein or by direct/closely mentored students)

100. †Boehman, B., **Hein, C.J.**, French, K., Galy, V., 2023. GDGT age distributions from the Ganges-Brahmaputra-Meghna River Basin: Implications for paleoenvironmental reconstructions and soil carbon stabilization, *GDGT Workshop 2023*, Zurich, Switzerland, September 2023.
99. **Hein, C.J.**, Pilarczyk, J.E., Brain, M., Green, A.N., Lau, A.Y.A., Ramos, N., 2023. From cores to code: Enhancing data-model integration to improve forecasts of coastal change – An introduction to IGCP Project 725, *Coastal Sediments '23*, New Orleans, LA, April 2023.
98. \*Davis, E.H., Cohn, N., †Heminway, S., Skaden, J., **Hein, C.J.**, 2023. Linking internal coastal foredune moisture dynamics to erosion vulnerability, *Coastal Sediments '23*, New Orleans, LA, April 2023.
97. †Heminway, S., \*Davis, E.H., Cohn, N., Skaden, J., Anderson, D., **Hein, C.J.**, 2023. Modeled changes in foredune morphology influenced by variable storm intensity and sea-level rise, *Coastal Sediments '23*, New Orleans, LA, April 2023.
96. †Sakib, Md. M., Messina, F., Zou, S., Bregman, M., Georgiou, I.Y., **Hein, C.J.**, Fenster, M.S., 2023. Spit elongation and re-orientation controls downdrift sediment flues and inlet morphology: Chincoteague Inlet, VA, USA, *Coastal Sediments '23*, New Orleans, LA, April 2023.
95. †Galvão, W.F.L., Klein, A.H.d.F., de Mahiques, M.M., **Hein, C.J.**, de Sousa, L.A.P., Cooper, A., Green, A., 2023. Impact of Sub-tropical incised valley infill along the Upper Pleistocene and Holocene on the coastal evolution of Babitonga Bay, *Coastal Sediments '23*, New Orleans, LA, April 2023.
94. †McPherran, K., Trembanis, A., **Hein, C.J.**, 2023. Impact of wave climate on interannual to decadal trends in shoreline change at Fishing Point, Virginia, USA, *Coastal Sediments '23*, New Orleans, LA, April 2023.
93. †Heminway, S., \*Davis, E.H., Cohn, N., **Hein, C.J.**, 2023. Modeled influence of variable storm intensity and sea-level rise on barrier-island foredune stability, *Northeast-Southeast Regional Geological Society of America Meeting*, Reston, VA, March 2023.
92. \*Cahoon, K., **Hein, C.J.**, Fenster, M.S., †Clarke, C.G., †Vaughn, J.P., Huot, S., Wehmiller, J., Ramsey, R.W., 2023. Refined chronostratigraphic mapping provides new insights into the Late Pleistocene relative sea-level history of the Delmarva Peninsula, *Northeast-Southeast Regional Geological Society of America Meeting*, Reston, VA, March 2023.
91. \*Barksdale, M.B. **Hein, C.J.**, Kirwan, M.L., 2022. Carbon fluxes from a rapidly transgressing barrier island chain, *AGU Fall Meeting*, Chicago, IL, December 2022.
90. †Boehman, B. **Hein, C.J.**, French, K., Phelps, S., Pearson, A., Galy, V.V., 2022. GDGT stable carbon isotope ratios reveal changes in organic carbon cycling in the Ganges-Brahmaputra-Meghana River basin due to modern land use practices, *Goldschmidt*, Honolulu, HI, June 2022.

89. †Lott, S.G., **Hein, C.J.**, Klein, A.H.d.F., Connell, J.E., de Oliveira, M.A.T., †Pinto, M., †Galvao, W., 2021. Centennial-scale coastal landform development associated with longshore transport and headland bypassing: São Francisco do Sul Island, Brazil, *AGU Fall Meeting*, New Orleans, LA, December 2021.
88. \*Cahoon, K., †Clarke, C.G., Fenster, M.S., †Vaughn, J.P., **Hein, C.J.**, 2021. Coastal highstand deposits archive Late-Pleistocene regional sea-level variability along the US Mid-Atlantic coast, *AGU Fall Meeting*, New Orleans, LA, December 2021.
87. \*Davis, E.H., **Hein, C.J.**, Cohn, N.C., †White, A., Zinnert, J., Hein, E.A., 2021. Morphostratigraphic differences between natural, managed, and constructed coastal foredunes, *AGU Fall Meeting*, New Orleans, LA, December 2021.
86. \*Shawler, J.L., †Sakib, M.M., Georgiou, I.Y., **Hein, C.J.**, 2021. Influence of hydrodynamic and sediment transport processes on beach-ridge morphology and internal architecture along the Virginia (USA) coast, *AGU Fall Meeting*, New Orleans, LA, December 2021.
85. Connell, J.E., **Hein, C.J.**, FitzGerald, D.M., Hughes, Z.J., Georgiou, I.Y., †King, K., 2021. The contribution of inorganic sediment inputs to multi-decadal accretion of backbarrier saltmarshes in the Southeast USA, *AGU Fall Meeting*, New Orleans, LA, December 2021.
84. †Sakib, M.M., Georgiou, I.Y., **Hein, C.J.**, Fenster, M.S., Zou, S., Esposito, C.R., Foster-Martinez, M., Messina, F., Trembanis, A.C., 2021. Mechanisms and rates of sand bypassing along a rapidly evolving inlet-spit system, *AGU Fall Meeting*, New Orleans, LA, December 2021.
83. †Staro, A., FitzGerald, D.M., Hughes, Z.J., **Hein, C.J.**, Pondell, C.R., †Guthrie, R., Connell, J.E., 2021. Hurricane deposition can enhance salt marsh resiliency to sea-level rise, *AGU Fall Meeting*, New Orleans, LA, December 2021.
82. \*Davis, E.H., **Hein, C.J.**, Cohn, N.C., †White, A., Zinnert, J., Hein, E.A., 2021. Coupled ecologic and sedimentologic controls on coastal foredune resilience to storm impacts, *Coastal & Estuarine Research Federation Biennial Conference (virtual)*, November 2021.
81. †White, D.E., †Ramos, K.V., Cohn, N., \*Davis, E.H., †Goeke, M.E., **Hein, C.J.**, Zinnert, J.C., 2021. Patterns and characteristics of belowground biomass distribution across natural and managed coastal foredunes, *Coastal & Estuarine Research Federation Biennial Conference (virtual)*, November 2021.
80. \*Cahoon, K., †Clarke, C.G., Fenster, M.S., †Vaughn, J.P., **Hein, C.J.**, 2021. Coastal highstand deposits archive Late-Pleistocene regional sea-level variability along the US Mid-Atlantic coast, *Paleo Constraints on Sea-Level Rise/Solid Earth Response and Influence on Cryospheric Evolution conference (virtual)*, September 2021.
79. †Lott, S.G., **Hein, C.J.**, Klein, A.H.d.F., Connell, J.E., 2021. Internal geometry of a headland bypassing system, *Society for Sedimentary Geology International Sedimentary Geosciences Congress*, Flagstaff, AZ, April 2020 (abstract accepted, conference cancelled).
78. **Hein, C.J.**, Galy, V.V., Eglinton, T.I., Usman, M., Haghypour, N., 2020. Post-glacial hydroclimate forcing of tropical soil-carbon storage, *Goldschmidt2020 (virtual)*, June 2020.
77. †Da Silva, A.P., Klein, A.H.d.F., Fetter, A.F.H., **Hein, C.J.**, Mendez, F., Broggio, M., Dalinghaus, C., 2020. Beach-foredune ridges as proxies for climate-induced wave direction change in South Atlantic during Late Holocene, *EGU General Assembly 2020*, virtual.
76. **Hein, C.J.**, \*Krisk, J.L., Galy, V.V., FitzGerald, D.M., Klein, A.H.d.F., 2020. Records of terrestrial climate change preserved within a sub-tropical coastal strandplain, *Society for Sedimentary Geology International Sedimentary Geosciences Congress*, Flagstaff, AZ, April 2020. (Conference canceled)
75. \*Shawler, J.L., **Hein, C.J.**, Connell, J.E., †Obara, C., 2020. Beach-ridge morphology and internal architecture influenced by wave regime and spit-building processes along the Virginia (USA) coast, *Society for Sedimentary Geology International Sedimentary Geosciences Congress*, Flagstaff, AZ, April 2020. (Conference canceled)
74. \*McPherran, K., Trembanis, A., Hein, C.J., 2020, The disjointed double channel of Chincoteague Inlet and implications for sediment transport, *AGU Fall Meeting*, virtual, December 2020.
73. †McPherran, K., Trembanis, A., **Hein, C.J.**, 2020. Hydrodynamic effects of Hurricane Dorian at a rapidly prograding barrier island spit and inlet system, *AGU Ocean Sciences*, San Diego, CA, February 2020.

72. †Obara, C.A., \*Shawler, J.L., Connell, J.E., **Hein, C.J.**, 2020. Spit elongation as a control on downdrift barrier-island stability: Insights from Assateague Island, VA, *Geological Society of America Northeast-Southeast Section Meeting*, Reston, VA, March 2020. (Conference canceled, presented virtually)
71. \*Shawler, J.L., **Hein, C.J.**, Canuel, E.A., Kaste, J., Fitzsimons, G.G., Georgiou, I.Y., Willard, D.A., 2020. Anthropogenic impacts to sedimentation in the Merrimack River Estuary: Insights from field, historical, and modeling approaches, *Geological Society of America Northeast-Southeast Section Meeting*, Reston, VA, March 2020. (Conference canceled, presented virtually)
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