

ELIZABETH A. HAJEK
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PROFESSIONAL PREPARATION AND EXPERIENCE

University of Wyoming, Laramie, WY	Geology	Ph.D.	2009
University of Wyoming, Laramie, WY	Geology	M.S.	2005
Macalester College, St. Paul, MN	Geology & Geography	B.A.	2002 <i>magna cum laude</i>

2018-present: Associate Professor of Geosciences, The Pennsylvania State University

2013-2016: Rudy Slingerland Early Career Assistant Professor in Geosciences

2010-2018: Assistant Professor of Geosciences, The Pennsylvania State University

2009-2010: Post-doctoral Research Associate, University of Minnesota St. Anthony Falls Laboratory and Department of Geology and Geophysics

2009: Professional Intern, ExxonMobil Upstream Research Company, Houston, TX

2006: Professional Intern, Chevron Energy Technology Company, Houston, TX

2005: Professional Intern, ExxonMobil Upstream Research Company, Houston, TX

EVIDENCE OF RESEARCH PRODUCTIVITY

Articles published in refereed journals * indicates Hajek advisee

- K. Straub, R. Duller, B. Foreman, and **E. Hajek**, Buffered, incomplete, and shredded: The challenges of reading an imperfect stratigraphic record, in press, *Journal of Geophysical Research, Earth Surface*
- E. Chamberlin*, and **E. Hajek**, Using bar preservation to constrain reworking in channel-dominated fluvial stratigraphy, 2019, *Geology*, v. 47, p. 531–534
- S. Lyons, A. Baczynski, T. Babila, T. Bralower, **E. Hajek**, L. Kump, E. Polites, J. Self-Trail, S. Trampush*, J. Vornlocher, J. Zachos., K. Freeman, 2019, Paleocene-Eocene Thermal Maximum prolonged by fossil carbon oxidation, *Nature Geoscience*, v. 12, p. 54-60.
- T. Bralower, L. Kump, J. Self-Trail, M. Robinson, S. Lyons, T. Babila, E. Ballaron, K. Freeman, **E. Hajek**, W. Rush, J. Zachos, 2017, Evidence for shelf acidification during the onset of the Paleocene-Eocene Thermal Maximum, *Paleoenography and Paleoclimatology*.
- S. Trampush* and **E. Hajek**, 2017, Preserving proxy records in dynamic landscapes: Modeling and examples from the Paleocene Eocene Thermal Maximum, *Geology*, v. 45, p. 967-970.
- J.M. Self-Trail, M.M. Robinson, T.J. Bralower, J.A. Sessa, **E. Hajek**, L.R. Kump, S.M. Trampush*, D.A. Willard, L.E. Edwards, D.S. Powars, and G.A. Wandless, 2017, Shallow marine response to global climate change during the Paleocene-Eocene Thermal Maximum, Salisbury Embayment, USA, *Paleoceanography*, DOI: 10.1002/2017PA003096.
- E. Hajek** and K. Straub, 2017, Autogenic sedimentation in clastic stratigraphy, *Annual Review of Earth and Planetary Sciences*, v. 45, p. 681-709.
- S. Trampush*, **E. Hajek**, K. Straub, and E. Chamberlin*, 2017, Identifying autogenic sedimentation in fluvial-deltaic stratigraphy: Evaluating the effect of outcrop-quality data on the compensation statistic, *Journal of Geophysical Research – Earth Surface*, DOI: 10.1002/2016JF004067.
- C. Millard*, **E. Hajek**, and D. Edmonds, 2017, Controls on crevasse-splay abundance, size, and shape: implications for floodplain basin filling, *Journal of Sedimentary Research*, v. 87, p. 722-739.

- D. Edmonds, **E. Hajek**, N. Downton, and A. Bryk, 2016, Avulsion flow-path selection on rivers in foreland basins, *Geology*, v. 44, p. 695-698.
- E. Chamberlin*, **E. Hajek**, and S. Trampush*, 2016, Measuring scales of autogenic organization in fluvial stratigraphy: an example from the Cretaceous lower Williams Fork Formation, Colorado, USA, in *Autogenic Dynamics and Self Organization in Sedimentary Systems*, Special Publication 106: SEPM (Society for Sedimentary Geology), Tulsa, Oklahoma, p. 132-144.
- E. Chamberlin* and **E. Hajek**, 2015, Interpreting paleo-avulsion dynamics from multi-story sand bodies, *Journal of Sedimentary Research*, v. 85, p. 82-94.
- E. Hajek** and D. Edmonds, 2014 Is river avulsion controlled by floodplain morphodynamics?, 2014, *Geology*, v. 42, p. 199-202.
- E. Hajek**, C. Paola, A. Petter, A. AlAbbad*, W. Kim, 2014, Amplification of shoreline response to base-level change by back-tilted subsidence, *Journal of Sedimentary Research*, v. 84, p. 470-474.
- R. Lynds, D. Mohrig, **E. Hajek**, and P. Heller, 2014, Paleoslope reconstruction in sandy suspended-load-dominant rivers, *Journal of Sedimentary Research*, v. 84, p. 816-824.
- E. Hajek** and M. Wolinsky, 2012, Simplified process modeling of river avulsion and alluvial architecture: connecting models and field data, *Sedimentary Geology*, v. 257-260, p. 1-30.
- E. Hajek** and P. Heller; 2012, Flow-depth scaling in alluvial architecture and nonmarine sequence stratigraphy: an example from the Castlegate Sandstone, *Journal of Sedimentary Research*, v. 82, n. 2, p. 121-130.
- E. Hajek**, P. Heller, and E. Schur*; 2012, Field test of autogenic control on alluvial stratigraphy (Ferris Formation, Maastrichtian/Paleogene, Wyoming), *Geological Society of America Bulletin*, v. 124, n. 11-12, p. 1898-1912.
- Y. Wang, K. Straub, and **E. Hajek**, Scale dependent compensational stacking: an estimate of autogenic timescales in sedimentary basins, 2011, *Geology*, v. 39, p. 811-814.
- E. Hajek**, B. Sheets, and P. Heller; Significance of channel-belt clustering in alluvial basins, 2010, *Geology*, v. 38, p. 535-538.
- E. Hajek**, S. Huzurbazar, D. Mohrig, R. Lynds, and P. Heller, 2010, Statistical comparison of grain-size distributions in modern and ancient sandy fluvial systems, *Journal of Sedimentary Research*, v. 80, p. 184-192.
- H. Jones and **E. Hajek**, 2007, Characterizing avulsion stratigraphy in ancient alluvial deposits, *Sedimentary Geology*, v. 202, p. 124-137.
- R. Lynds and **E. Hajek**, 2006, Conceptual model for predicting mudstone distribution in sandy braided river reservoirs, *AAPG Bulletin*, v. 90, n. 8, p. 1273-1288.

Other publications:

- B. Foreman, **E. Hajek**, R. Lynds, M. McMillan, C. Paola, 2016, Memorial for Paul L. Heller (September 16, 1952-July 6, 2016), *Rocky Mountain Geology*.
- D. Budd, **E. Hajek**, and S. Purkis, Introduction to Autogenic Dynamics and Self-Organization in Sedimentary Systems, 2017, in *Autogenic Dynamics and Self-Organization in Sedimentary Systems*, D. Budd, **E. Hajek**, and S. Purkis eds., SEPM Special Publication No. 106.
- L. Larsen, **E. Hajek**, et al., 2015, Taking the pulse of the Earth's surface systems, *Eos*, 96, doi:10.1029/2015EO040525. Published on 2 December 2015.

Funded projects and grants:

Proposed:

Investigators	Role	Title	Source	Amount Requested
Hajek, Ewing, Hammond	PI	Collaborative Research: Community tools for automated paleoenvironmental interpretation from sedimentary field data	NSF – Geoinformatics	\$308,259
Hajek, DiBiase, Furlong, Ivory, Nyblade, Smye,	PI	Constraining thresholds for feedbacks between surface- and deep-Earth processes during rift evolution; You do not have access to modify this field. Constraining thresholds for feedbacks between surface- and deep-Earth processes during rift evolution	NSF – GeoPRISMS	\$639,129
Hajek and Ganti	PI	Collaborative Research: Reconstructing paleo-sediment supply from river deposits: toward quantifying sediment discharge from bedform to basin scale	NSF – Sedimentary Geology and Paleobiology	\$330,684

Funded/In Progress:

Investigators	Role	Dates	Title	Source	Amount
Hajek, Freeman co-PI	PI	9/1/2019-9/1/2021	Evaluating the role of sediment-transport dynamics in organic carbon burial and preservation	ACS PRF	\$110,000
Hajek and Karpyn	PI		Integrated geoscience and engineering approach to predicting scale breaks in sedimentary deposits: connecting depositional processes to physical rock properties	Dean's Fund for Postdoc-Facilitated Innovation through Collaboration	\$105,000
Hajek	PI	7/1/2015-6/30/2020	CAREER: Ancient river and floodplain dynamics: a research and education plan for improving paleoenvironmental reconstructions and stratigraphic prediction	NSF Earth Sciences – Sedimentary Geology and Paleobiology	\$474,344
Wilf, Gandolfo, Hajek	Co-PI	3/1/2016-2/29/2021	Collaborative Research: Patagonian fossil floras, the keys to origins, biogeography, biodiversity, and survival of the Gondwanan rainforest biome	NSF – Division of Environmental Biology	\$992,847
Hajek <i>(Sub-award of project with Walker (Kansas), Tikoff (Wisconsin), Chan (Utah))</i>	PI	9/1/2016-8/31/2020	EarthCube Data Infrastructure: Collaborative Proposal: Development of an Integrated Data System for the Geological Field Sciences	NSF – Earth Cube	\$44,839

Complete:

Bralower, Kump, Freeman, Hajek, Zachos	Co-PI	7/1/2014-6/30/2017	Ocean Acidification: Collaborative Research: The response of calcareous nannoplankton to ocean acidification during the Paleocene-Eocene thermal maximum	NSF Ocean Sciences – Ocean Acidification	\$747,063
Hajek, Patzkowsky	Co-PI	9/15/2015 - 8/31/2018	Fossil occurrences, associations, and taphonomy in a sequence-stratigraphic framework: testing predictions in the San Andres Formation (Middle Permian, New Mexico)	ACS-PRF	\$110,000
Hajek and Edmonds	PI	10/1/2011-9/30/2016	Collaborative Research: Defining controls on incisional avulsions in alluvial basins	NSF Earth Sciences – Geomorphology and Landuse Dynamics	\$171,083
Hajek and Straub	PI	3/1/2011-2/29/2015	Collaborative Research: Statistical methods for quantifying autogenic stratigraphy in alluvial basins	NSF EAR -Sedimentary Geology and Paleontology	\$161,106
Hajek	PI	4/1/2012-9/30/2013	Workshop: MYRES V – The Sedimentary Record of Landscape Dynamics	NSF EAR – Sedimentary Geology & Paleobiology, Geomorphology & Landuse Dynamics, EarthCube	\$70,000
Hajek	PI	1/1/2012-8/31/2014	Fine sediment storage and bypass in sandy fluvial systems	ACS PRF Doctoral New Investigator	\$100,000

Research Presentations

More than 25 invited talks at universities and conferences.

More than 80 abstracts for presentations at professional meetings (including student presentations).

EVIDENCE OF ADVISING AND TEACHING EFFECTIVENESS

Courses Taught:

RESIDENT COURSES				AVERAGE RATING (7 MAX)		
Semester	Course	No. Enrolled	Co-Instructors	Course Quality	Instructor Quality	Instructor Attributes
SP 2012, 2014, 2016, 2018	GEO SC 579: Field Stratigraphy	11-16	Patzkowsky	6.6	6.7	6.6
SP 2012, 2013, 2015, 2016, 2018	GEO SC 597B: AAPG Imperial Barrel Award	5	---	6.6	6.6	6.6
FA 2011, 2012, 2013, 2015, 2016, 2017, 2018	GEO SC 040: The Sea Around Us	~300	---	5.6	6.1	6.1
FA 2012, 2013, 2014, 2015, 2016	GEO SC 597C: Petroleum Geosystems	8-15	Arthur, Engelder, Freeman, Furlong, Slingerland	5.7	6.7	6.6
SP 2011	GEO SC 497B: Contemporary Topics in Petroleum Geology	10	---	6.4	6.7	6.4
SP 2011, SP 2019	GEO SC 479: Advanced Stratigraphy	16	---	6.1	6.3	6.2
SP 2016, 2017, 2018	GEO SC 310: Earth History	54-58	Fisher	4.9	6.0	---

*3.0 and 4.0 credit classes only; seminars not listed

Recipient of College of Earth and Mineral Sciences Wilson Award for Excellence in Teaching (2016)

Supervision of Graduate and Undergraduate dissertations, theses or projects:

Name	Dissertation or Thesis Title	Completion Year
<i>PhD</i>		
Ellen Chamberlin	Statistical organization of channel movement during basin filling	2016 (<i>instructor at Bucknell University</i>)
Sheila Trampush	How landscape dynamics can alter the preservation and interpretation of paleoenvironmental signals in fluviodeltaic environments	2017 (<i>post-doctoral research position at UC Berkeley</i>)
Xiaoni Hu	Comparing rates of landscape and tectonic processes in depositional settings	Expected 2022

MS

Safiya Alpheus	Reconstructing river bar morphodynamics from fluvial stratigraphy	Expected 2021
Jasmine Walker	Evaluating paleo-channel dynamics using 3D seismic data: Mungaroo Fm., Australia	Expected 2020
Evan Greenberg	Recognizing climate-driven landscape dynamics in fluvial stratigraphy: evaluating river response to the PETM in the Bighorn Basin, Wyoming	2017
Nana Xu	Sequence-stratigraphic analysis of a forearc basin succession from 3D seismic data: Nankai Margin, offshore Japan	2017
Martin Jimenez	Controls on sand-body distributions and connectivity in the shallow-marine Fox Hills Sandstone and lower Lance Formation (Upper Cretaceous, Great Divide and Washakie basins, Wyoming)	2017
Tramond Baisden	River controls on fluvial reservoir architecture and connectivity	2015
Nate Wysocki	Fine-sediment storage and bypass in sandy fluvial systems	2015
Craig Millard	Evaluating controls on crevasse-splay growth in modern and ancient systems	2013

Undergraduate Theses

Safiya Alpheus	Reconstructing basin-scale avulsion dynamics in the Willwood Formation	2018
Adreina Anuar	Subsurface distribution of the Paleocene-Eocene Marlboro Clay (Atlantic margin)	2018
Arnold Eatmon	Petrophysical expression of deepwater facies in the Kumano forearc basin	2018
Tori Garman	Sedimentary processes on the Paleocene-Eocene mid-Atlantic shelf	2017
John Hribik	Depositional environment of the Coburn Formation (Ordovician) near State College, PA	2015
Ryan Creitz	Estimating a paleo-sediment budget for the Paleocene/Eocene Wasatch Formation (Piceance Basin, CO)	2014
Caitlin Fogaren	Comparing particle-size distributions in sandy fluvial deposits	2013
Derrell Mathis	Sediment mass balance in the forearc Kumano Basin, Japan	2013
Tramond Baisden	Channel-depth variations in a back-tilted subsiding-basin experiment	2013
Leah Toms	Controls on avulsion style through the Paleocene-Eocene Thermal Maximum	2012
Nazmi Azudin	Sequence stratigraphic analysis of a fore-tilted reduced-scale experiment	2012
Abrar AlAbbad	Shoreline response to base-level change in an experimental delta	2011
Emilie Schur (Macalester College)	Sandstone and gravel provenance in the Ferris Formation (Upper Cretaceous/Paleogene, Hanna Basin, Wyoming)	2010

RECORD OF SERVICE AND SYNERGISTIC ACTIVITIES

Service to the discipline and to the profession

- SEPM Code of Conduct Committee Member (2019-present)
- Gulf Coast Neotectonics Panel Water Research Institute and Louisiana CPRA (2019-present)
- Technical program chair – 11th International Conference on Fluvial Sedimentology (Calgary, AB, July 2017)
- Organizing committee – GeoPRISMS Rift Initiation and Evolution Theoretical and Experimental Institute (Albuquerque, NM, February 2017)
- Editorial board of *GEOLOGY* (2016-2018)
- Society for Sedimentary Geology (SEPM) Research Councilor (2016-2018)
- NSF GeoPRISMS Steering and Oversight Committee member (2013-2016)
- Co-convenor of interdisciplinary SEPM Research Conference: Autogenic Dynamics of Sedimentary Systems (Grand Junction, CO, August 2014).
- Contributor to ongoing discussions about infrastructure investment in an Earth Surface Observatory, (invited participant: Research Infrastructure in Support of NSF Surface Earth Processes Grand Challenges workshop, 2014, and conversations with NSF program directors and the CZO leaders).
- Principle Organizer of MYRES V: The Sedimentary Record of Landscape Dynamics, interdisciplinary conference for early-career geomorphologists, stratigraphers, sedimentologists, and geodynamicists (Salt Lake City, UT, August 2012).
- Organized >10 sessions at national meetings (AGU Fall Meeting, GSA Annual Meeting, and AAPG Annual Convention) since 2011.
- Reviewer for refereed journals: *AAPG Bulletin*, *Basin Research*, *Depositional Record*, *Earth Surface Processes and Landforms*, *G-Cubed*, *Geology*, *Geological Society of America Bulletin*, *Geophysical Research Letters*, *Journal of the Geol. Society of London*, *Journal of Geophysical Research – Earth Surface*, *Journal of Sedimentary Research*, *Lithosphere*, *Nature Geoscience*, *Palaios*, *Sedimentology*
- Proposal reviewer: NSF Programs: Geomorphology and Landuse Dynamics, Sedimentary Geology and Paleobiology, Integrated Earth Systems, Tectonics, Earth Sciences Instruments and Facilities; American Chemical Society Petroleum Research Fund; International agencies: Swiss National Science Foundation, Israel Science Foundation, KU Leuven

Committee and service work at Penn State

Geosciences Department

- Search Committee Chair – Two Faculty Positions in Earth History (2019)
- Rover for PhD Candidacy Exams (2017-present)
- Sedimentary Geology Faculty Search Committees (2016/17 & 2017/18)
- Graduate Program Committee (2016-2018)
- Geosciences Representative to EMS Diversity Committee (2014-present)
- Energy (Petroleum) Geosystems Steering Committee (2011-present)
- Faculty adviser to Geosciences and AAPG student organizations (2011-2019)
- Geosciences industry recruiting information session faculty organizer (2010-2018)
- Initiated monthly networking and mentoring lunches for Assistant and Associate rank tenured and tenure-track Geosciences faculty

Organized women Geoscience faculty networking breakfasts
Mentor for Dr. Tess Russo (2015-2017) and Dr. Sarah Ivory (2018-present)
Petroleum Geosciences INGaR Faculty Search Committee (2014-2015)
Geosciences Teaching Assistant Workload Taskforce (2017)
Geosciences Ad Hoc Pulse-of-the-Earth Committee (2014-2015)
Geosciences Ad Hoc Sexual Harassment Training Planning Group (2014-2015)
Geomorphology and Land Use Dynamics Faculty Search Committee (2013-2014)
Geosciences Undergraduate Program Committee (2011-2014)
Geosciences Executive Committee (2011-2012, 2013-2014, 2018-present)
Geosciences Graduate Admissions Committee (2010/2011)

College of Earth and Mineral Sciences

EMS Sustainability Committee (2019-present)
Mining Engineering Chair Faculty Search Committee – Energy Mining and Engineering (2019)
EMS Assessment of Living, Learning, and Working Environment Survey Committee (2018-2019)
Discussion facilitator for “Conversations on Inclusivity with the Dean” pizza lunch (2017)
EMS Associate Dean for Undergraduate Education Search Committee (2015)
EMS Junior Faculty Ad Hoc Strategic Planning Advisory Committee to the Dean (2013)
EMS Spreading the Word about EMS (SWAE) Committee (2012)
Started EMS women’s writing group with Dr. Zuleima Karpyn and Dr. Tess Russo to promote networking, mentoring, and prioritize writing among female faculty

Synergistic activities and activities supporting inclusiveness in geosciences

TEDxPSU talk selected for distribution on TED.COM: [What rivers can tell us about the earth’s history](#) (July 2017)
Appeared on NOVA documentary [Treasures of the Earth: Power](#) (November 2016)
Faculty mentor of Penn State’s American Association of Petroleum Geologists (AAPG) Imperial Barrel Award Petroleum Exploration Team. We have won the Eastern Section contest every time we’ve participated and earned the Selly Cup (2nd Place) in the international finals in 2015 and 2016 and the Stoneley Medal (3rd place) in 2018.
Upward bound Summer Experience in Earth and Mineral Sciences research project mentor (2016)
Adapted a general education introductory oceanography course at Penn State to follow NOAA’s ocean literacy guidelines; ongoing development of this course includes expanded hands-on learning activities with interactive “lab” exercises being incorporated into large-lecture classes.
Faculty oversight committee of Energy (Petroleum) Geosystems Program aimed at providing Penn State MS students with supplementary training and experience necessary to become leaders in industry.
Faculty adviser to the Association for Women Geoscientists student organization – 2016 Outstanding Chapter award winner.
Faculty mentor for We Are For Science group: University-wide coalition of students working to engage in science policy, expand support for science among the public, and broaden inclusiveness in science.
Member of Penn State LGBTQ Safer People Safer Places Support Network (completed SafeZone 101 and SafeZone: Transgender Identities training courses).