

Brendan R. Bream, Ph.D.
Geoscientist – Kansas Geological Survey

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CAREER PROFILE

Geoscientist, researcher, and educator with over 15 years working as a professional geoscientist for the world's largest publicly traded international oil and gas company and 5 years teaching experience at a top-ranked US university. Oil and gas subsurface technical lead for complex large-scale developments (\$15B+), extensive experience with seismic interpretation, complex fault frameworks, reservoir modeling, subsurface data integration, static resource definition, equity redetermination, and dynamic reservoir simulation. Broad seismic interpretation experience with onshore and offshore 2D and 3D datasets at both basin- and prospect-scale, integration of seismic inversion products. Proven track-record of innovative solutions, collaborative research, mentoring, project planning, and publication. Deployed twice to Australian affiliate as a technical expert for a liquefied natural gas (LNG) project equity redetermination. Currently leading a small energy team with a broad portfolio of CCS, geothermal, critical mineral, and subsurface mapping projects all involving geologic modeling and simulation.

PROFESSIONAL EXPERIENCE

Kansas Geological Survey (08/23-present) Associate Director of Energy & Stratigraphy and Senior Scientist.

- Leadership – 15 direct reports within KGS; energy, stratigraphy, mapping, and cartographic disciplines.
- Mentoring – Responsible for mentoring staff, researchers, project managers, and research engineers.
- Research – Oversight for group's research initiatives in energy, materials, subsurface characterization, and mapping. External funding for Division currently exceeds \$5M.
- External Relationships – Federal, State, and industry stakeholders.

ExxonMobil (01/03-09/04; 07/09-07/23; 17 years total) Geoscientist.

Guyana Upstream Oil and Gas (10/21-08/23) Responsible for geologic modeling, seismic interpretation and integration of seismic inversion products, discovery subsurface team (Cataback, Lau Lau, Lukanani), transfer and appraisal of numerous discoveries from exploration to development, appraisal well planning (including drill stem test simulation with Intersect), and prospect/play probabilistic assessment. Created first of its kind regional resource density evaluation methodology for Guyana which became the basis for offshore LNG development concepts. Early Career Mentor.

Papua New Guinea LNG – Esso Australia Pty Ltd, Melbourne (07/18-10/21) Equity Redetermination Lead for \$19B project. Responsible for 3 key project areas (of 9) and subsurface technical consistency across all deliverables. 2D seismic and well log interpretation (>200 wells), geologic models, interpretation and integration of production data, and simulation (Eclipse; including compositional fluid model). Evaluated near field and infill opportunities. Technical Lead and Early Career Mentor.

Americas – Gulf of Mexico Regional Integration Team (05/17-07/18) Exploration geoscientist.

Opportunity generation (WGoM acreage capture Sales 248 and 249); 3D WAZ interpreter for sub-salt seismic reprocessing; salt architecture; probabilistic resource assessment (GeoX); integrated trap analysis; fault framework and juxtaposition; property modeling and volumetrics. Intern Mentor.

Papua New Guinea LNG – Esso Australia Pty Ltd, Melbourne (08/16-05/17) Exploration geoscientist.

Muruk gas discovery team (multiple TCF EUR). Identification, assessment, and drilling operations for PNG foldbelt opportunities. Interpretation of 2D seismic and gravity/magnetic data to build integrated structural framework and property models of Western Foldbelt prospects (Petrel).

Papua New Guinea LNG – Esso Australia Pty Ltd, Melbourne (03/13-08/16) Equity Redetermination.

Structural framework and property modeling (Petrel), 2D seismic interpretation, well ties, balanced fold-thrust cross sections, EOD/lithofacies description, reservoir connectivity analysis, well log correlation, field simulation and history matching.

Americas-Gulf of Mexico Regional Exploration Team (06/11-03/13) Structural style mapping for U.S. and Mexico, structural cross section restoration, field size distribution, and trap density mapping in support of basin-wide play assessment; Early Career Mentor.

New Opportunity Prioritization-Regional Studies Team (10/10-06/11) Mediterranean Sea regional scoping project. Tectonic framework, structural evolution, source rock distribution; biogenic gas evaluation.

Production Geoscience Special Studies (08/09-10/10) Cold Lake – Alberta, Canada 3D seismic interpretation and well ties for lease-wide stratigraphic framework and geocellular modeling.

Formation Evaluation Group (06/04-09/04) Petrophysical interpretation (West Africa and Canada).

Angola-Congo Regional Exploration Group (09/03-05/04) 2D/3D seismic interpretation, hydrocarbon system assessment, and regional cross section construction.

Zafiro Field Production, Equatorial Guinea (01/03-09/03) 3D seismic interpretation and assessment of deep-water siliciclastic channels and syn-depositional faults.

Education and Community

- **Vanderbilt University** (09/04-07/09; 5 years total) Senior Lecturer.
 - Instructor. Introductory geology course (100+ students), upper level undergraduate and graduate courses (Structural Geology, Appalachian Geology). Introductory labs and field trip development.
 - Research. Undergraduate Research Advisor and Graduate Reader/Collaborator.
 - Tennessee Geoconclave. (2005-2008) Camping, geoscience competition, and field trip for geology students at Tennessee universities; responsible for Vanderbilt's regular attendance since 2005.
 - Earth, Environment, and Outdoor Enthusiast Club Advisor. Faculty advisor for undergrad club.
 - First-year undergraduate experience. Undergraduate advisor; VUceptor; community volunteer leader.
- **University of Tennessee–Knoxville** (8/96-12/02) Graduate Research and Teaching Assistant.
- **Visalia Unified School District, CA** (11/95-6/96) K-12 Substitute and girls' basketball coach.

Environmental and Consulting

- **North Carolina Geological Survey** (6/06) Consultant. Heavy mineral separation, zircon imaging, and zircon geochronology for eastern Blue Ridge samples.
- **Shaw Environmental & Infrastructure** (member of the *Shaw Group*), TN (5/01-12/01) Assistant Engineer/Scientist. Duties included interpretation of groundwater sample data using GIS.
- **GCO Minerals** (subsidiary of *International Paper Co.*), TX (4/00) Consultant. Duties included sampling and assessing potential economic deposits on forest tracts in western North Carolina.

EDUCATION

- Ph.D.** Geology (Tectonics & Geochemistry), University of Tennessee, May 2003. Tectonic Implications of Para- and Orthogneiss Geochronology and Geochemistry from the Southern Appalachian Crystalline Core. *Advisors*: Robert D. Hatcher, Jr. (University of Tennessee) and Calvin F. Miller (Vanderbilt University).
- M.S.** Geology (Structural Geology & Tectonics), University of Tennessee, December 1999. Structural and Stratigraphic Relationships of Ortho- and Paragneisses Southwest of Marion, North Carolina. *Advisor*: Robert D. Hatcher, Jr.
- B.S.** Geology (Engineering and Hydrogeology emphasis), University of California–Santa Barbara, August 1995.
- B.A.** Environmental Studies (Natural Sciences emphasis), University of California–Santa Barbara, August 1995.

GRANTS (as Principal Investigator/Recipient; includes subawards)

- *In Preparation* Private Energy Producer “Evaluation of geologic CO₂ Sequestration potential in NE Kansas”. (~\$2M). Collaborators: OnePointFive, Enchant Energy, KU, KGS (2025-2027).
- *In Review* Department of Energy “Great Plains and Interior Highlands CORE-CM: Developing a Nexus of Carbon Ore & Critical Mineral Resources, Technology Innovation, and Communities of the Future” (DE-FOA-0003077; \$605K sub-award). Collaborators: U of Wyo, BEG, UPenn, Battelle, CO Mines, U of ND (2025-2028)
- *In Progress* Department of Energy “Carbon Utilization and Storage Partnership for the US West (CUSP)” (DE-FE0031837; \$1.3M). Subsurface evaluation for CO₂ injection at sites in OK and KS; static definition and dynamic simulation. Collaborators: NETL, LANL, PNNL, SNL, Carbon Solutions LLC, GeoIntegra. (ends Sep-2025).
- **2005** Vanderbilt University Venture Grant Fund for creativity in curricular & pedagogical approaches (\$3K).
- **2001** GSA Structure & Tectonics division grant for fieldtrip expenses.
- **2000, 2001, 2002** Southeast GSA Travel Award for GSA Meetings.

GRANTS (as co-PI / Collaborator)

- *In Review* Department of Energy “Characterizing Rocks of the Kansas Midcontinent Rift” (\$1.0M). Integration of geochemical data and wireline logs to define the subsurface characteristics of the MCR; static and dynamic modeling. Principal Investigator: B. Goldstein (KU); Bream (co-PI). Collaborators: KU, KGS, PNNL.
- *In Progress* Department of Energy “Critical Minerals in Coaly Strata of the Cherokee-Forest City Basin” (DE-FE0032056; \$1.6M). Critical Mineral evaluation in KS-OK-NE-MO-IA; geocellular property model of critical mineral distribution in Lower Pennsylvanian strata (Bream). Principal Investigator: S. Oborny (ends Sep-2024).
- **1999-2002** NSF Grant Research Assistant. "Evolution of the Southern Appalachians: Contributions from Ion Microprobe Dating of Zircon, Blue Ridge and Inner Piedmont, TN-NC-SC-GA" (EAR-9814800; \$101K). Principal Investigators: R.D. Hatcher, Jr. (UT) and C.F. Miller (Vanderbilt University).
- **1998 & 1997** Field work grant, from the EDMAP component of the USGS National Cooperative Mapping Program (Principal Investigator: R.D. Hatcher, Jr.).

COURSES TAUGHT & COORDINATED

- **University of Kansas** – SLB Petrel for Geoscience Workshops (April-May 2024).
- **ExxonMobil**
 - **Lectures** for Integrated Reservoir Characterization and Management (2022-Structure overview); Geophysical Subsurface Characterization (2022-Guyana Initial Resource Base Assessments); and Interpretation Geophysics School (2018-GoM structural and stratigraphic framework introduction).
 - **Gulf of Mexico Depth Structure Maps** (2018). Developed and co-instructed short-course for Regional and New Opportunity team interpreters to improve the quality of prospect mapping and assessment inputs with a focus on sub-salt 3-way salt dependent traps.
 - **Gulf of Mexico Play Workshop Lead** (2017). Co-organized a multi-day play workshop to gather and evaluate feedback from over 50 participants; resulted in updated play ranking and prospecting.
 - **Flagship II** – Fundamentals of Stratigraphic and Structural Concepts (~20 delegates; responsible for instruction of extensional and compressional structural modules; seismic interpretation; and HC system analysis) - Full Instructor (Fall 2010, Spring 2011, Spring 2012); Apprentice Instructor (Spring 2010).
- **Vanderbilt University**, Department of Earth & Environmental Sciences (EES)
 - *EES 101 "The Dynamic Earth: Introduction to Geological Sciences"* (3 credit hours, ~125 students)
 - *EES 111 and EES 113* Intro lab coordinator (~10 sections/semester, ~200 students)
 - *EES 110 "Geology of National Parks"* (3 credits, 20 student max enrollment)
 - *EES 240 "Structural Geology and Rock Mechanics"* (4 credit hours, 5-10 students)
 - *EES 289 "Directed Study: Zircon Separation and Geochronology "* Fall 06 (1 credit hour, 2 students)
 - *EES 291 "Independent Study: Southern Appalachian Tectonics and Geochemistry"* Spring 05 (1 credit hour, 1 graduate student), Fall 05 (1 credit hour, 1 graduate student)
 - *Vanderbilt Visions* “Freshman Orientation & Acclimation” Instructor/VUceptor (18 students) 06, 07, 08
- **University of Tennessee**, Department of Earth & Planetary Sciences
 - *Geol 102 Lab "Earth, Life, & Time"* (~20 students/lab; 2 labs total) Fall 1999
 - *Geol 103 Lab "The Earth's Environment"* (~20 students; 7 labs total) Fall 1996, Spring 1997, Fall 1997
 - *Geol 455 Co-Instructor & Teaching Assistant "Basic Environmental Geology"* (18 students) Spring 1999

MENTORING, DIRECTED RESEARCH, & COLLABORATION (*selected*)

- **2024 Post-Doctoral Researcher** – Souvik Bhattacharjee joined the Kansas Geological Survey as a Bream post-doc effective 8-Jan-2024.
- **2023 Directed Research/Mentor** – “SE Stabroek probabilistic assessment and resource definition using Petrel, IPM, GeoX, and Tableau” Tony Moraes, EM New Hire.
- **2022 Directed Research/Mentor** – “High gas-oil ratio resource density in SE Stabroek block, Guyana” Emily Wood and Sam Becker, EM New Hires.
- **2020 Mentor** – “Gobe Footwall near-field wildcat well for PNG-LNG” Simone de Morton, EM New Hire.
- **2018 Directed Research/Mentor** – “Reservoir compartmentalization at Appomattox field, Eastern Gulf of Mexico” Stephen Ball (currently Structural Geologist at ExxonMobil), EM Intern.
- **2012 Directed Research/Mentor** – “Gulf of Mexico hydrocarbon column height study” Cody MacDonald (currently AI Customer Engineer at SambaNova Systems), EM New Hire.
- **2010 Directed Research** – “Zircon LA-ICP-MS geochronologic and geochemical survey of the Serra da Graciosa province, Brazil; Meta-sed zircon geochronology of the Leknes Group (Lofoten, Norway) and correlation to the Seve Nappe; Characterization of in-house geochronologic and geochemical Zirconia standard” Steven Braun (currently Performance Systems Manager at Chevron Corporation), Vanderbilt Senior Thesis.
- **2010 Collaborator** – “The evolution of aquifers and arsenic in Asia: A study of the fluvio-deltaic processes leading to aquifer formation and arsenic cycling and heterogeneity in Bangladesh, Vietnam, and Nepal” Beth Weinman (currently Associate Professor at Fresno State University), Vanderbilt Ph.D.

- **2008 Directed Research** – “Zircon separation and U-Pb geochronology of Bangladesh aquifers” Poojitha Matta (currently Senior Clinical Research Associate at Covance), Vanderbilt Center for Science Outreach Summer Research Internship Program (rising HS Senior).
- **2006 Thesis Reader and Collaborator** – “An exotic southern and central Appalachian basement: Pb and Nd isotopic evidence” Chris Fisher (currently Research Fellow at The University of Western Australia), Vanderbilt M.S.

INVITED PRESENTATIONS

- East Carolina University
- Indiana University Purdue University-Fort Wayne
- Kansas State University
- Middle Tennessee State University
- Oklahoma State University
- University of Akron
- University of Arkansas
- Vanderbilt University
- Chevron Corporation (Bakersfield, CA)
- ExxonMobil Exploration Company (Houston, TX)
- North Carolina Geological Survey (Asheville, NC)
- Oil Search Limited (now Santos; Sydney, Australia)
- Shell Oil Company Research Technology (Houston, TX)

PUBLICATIONS (refereed)

-2017-

- [1] Merschat, A.J., **Bream**, B.R., Hatcher, R.D., Jr., and Miller, C.F., Temporal and spatial distribution of Paleozoic metamorphism in the southern Appalachian Blue Ridge and Inner Piedmont delimited by ion microprobe U-Pb ages of metamorphic zircon, *in* Law, R.D., Thigpen, J.R., Merschat, A.J., and Stowell, H.H., eds., Linkages and Feedbacks in Orogenic Systems: Geological Society of America Memoir 213, p. 199-254.

-2010-

- [2] Merschat, A.J., Hatcher, R.D., Jr., **Bream**, B.R., Miller, C.F., Byars, H.E., Gatewood, M.P., and Wooden, J.L., Detrital zircon geochronology and provenance of southern Appalachian Blue Ridge and Inner Piedmont crystalline terranes, *in* Tollo, R.P., Bartholomew, M.J., Hibbard, J.P., and Karabinos, P.M., eds., From Rodinia to Pangea: The lithotectonic record of the Appalachian region: Geological Society of America Memoir 206, p. 661-700.

-2007-

- [3] Callahan, J.E., **Bream**, B.R., Johnson, N.E., and Stepp, J.D., Geochemistry of megacrystic zircons with distinctive fluorescent zircon populations from the Freeman Mine, North Carolina, *Southeastern Geology*, v. 45, p. 1-13.
- [4] Hatcher, R.D., Jr., **Bream**, B.R., and Merschat, A.J., Tectonic map of the southern and central Appalachians: A tale of three orogens and a complete Wilson cycle, *in* Hatcher, R.D., Jr., Carlson, M.P., McBride, J.H., and Martínez Catalán, J.R., eds., 4-D Framework of Continental Crust: Geological Society of America Memoir 200, p. 595-632.

-2005-

- [5] Panigrahi, M.K., **Bream**, B.R., Misra, K.C., and Naik, R.K., Reply to discussion on “Age of granitic activity associated with copper–molybdenum mineralization at Malanjhand, central India” by Holly Stein, Judith Hannah, Aaron Zimmerman, and Richard Markey: *Mineralium Deposita*, v. 40, no. 6-7, p. 766-768.

-2004-

- [6] **Bream**, B.R., Hatcher, R.D., Jr., Miller, C.F., and Fullagar, P.D., Detrital zircon ages from the crystalline core of the southern Appalachians, NC-SC-GA-TN: New constraints on the rifting of Rodinia, *in* Tollo, R.P., Corriveau, L., McLelland, J., and Bartholomew, M.J., eds., Proterozoic tectonic evolution of the Grenville orogen in North America: Boulder, Colorado, Geological Society of America Memoir no. 197, p. 459-475.
- [7] Hatcher, R.D., Jr., **Bream**, B.R., Miller, C.F., Eckert, J.O., Carrigan, C.W., and Fullagar, P.D., Paleozoic structure of southern Appalachian Blue Ridge Grenvillian internal basement massifs, *in* Tollo, R.P., Corriveau, L., McLelland, J., and Bartholomew, M.J., eds., Proterozoic tectonic evolution of the Grenville orogen in North America: Boulder, Colorado, Geological Society of America Memoir no. 197, p. 525-547.

- [8] Panigrahi, M.K., **Bream**, B.R., Misra, K.C., and Naik, R.K., Age of granitic activity associated with copper–molybdenum mineralization at Malanjhand, Central India: *Mineralium Deposita*, v. 39, no. 5-6, p. 670-677.

-2003-

- [9] Carrigan, C.W., Miller, C.F., Fullagar, P.D., Hatcher, R.D., Jr., **Bream**, B.R., and Coath, C.D., Ion microprobe age and geochemistry of southern Appalachian basement, with implications for Proterozoic and Paleozoic reconstructions, *Precambrian Research*, v. 120, p. 1-36.

-2002-

- [10] Meschter-McDowell, S.M., Miller, C.F., Fullagar, P.D., **Bream**, B.R., and Mapes, R.W., The Persimmon Creek Gneiss, eastern Blue Ridge, North Carolina-Georgia: Evidence for the missing Taconic arc?: *Southeastern Geology*, v. 41, no. 2, p. 103-117.

GUIDEBOOKS and GEOLOGIC MAPS

- **2002** Settles, D.J., Hatcher, R.D., Jr. and **Bream**, B.R., The Hayesville–Soque River and Allatoona faults and an Ordovician arc assemblage in the central Blue Ridge northwest of Dahlonega, Georgia in Costello, J.O., ed., *Geologic features of eastern Pickens, Dawson, and western Lumpkin counties, Georgia: Georgia Geological Society Fieldtrip*, p. 17-42.

- **2002** *Inner Piedmont geology in the South Mountains-Blue Ridge Foothills and the southwestern Brushy Mountains, central-western North Carolina.*, Guidebook editors R.D. Hatcher, Jr. and B.R. **Bream** (Over 200 people attended 2-day fieldtrip in central-western NC) Carolina Geological Society Fieldtrip, 146 p.
 - Bier, S.E., **Bream**, B.R., and Giorgis, S.D., Inner Piedmont stratigraphy, metamorphism, and deformation in the Marion-South Mountains area, North Carolina, p. 65-99.
 - **Bream**, B.R., The southern Appalachian Inner Piedmont: New perspectives based on recent detailed geologic mapping, Nd isotopic evidence, and zircon geochronology, p. 45-63.
 - Giorgis, S.D., Mapes, R.W., and **Bream**, B.R., The Walker Top Granite: Acadian granitoid or eastern Inner Piedmont basement?, p. 33-43.
- **1999** **Bream**, B.R., and Williams, S.T., Geologic Map of the Glenwood 7 1/2-minute quadrangle, North Carolina: USGS National Geologic Map Database and North Carolina Geological Survey open file.
- **1999** **Bream**, B.R., Yanagihara, G.M., and Whisnant, J.S., Geologic Map of the Sugar Hill 7 1/2-minute quadrangle, North Carolina: USGS National Geologic Map Database and North Carolina Geological Survey open file.
- **1998** **Bream**, B.R., Hill, J.C., Giorgis, S.D., and Williams, S.T., EDMAP Site Visit and Field Review (Field Trip Guidebook): Structure and Tectonics Division, University of Tennessee–Knoxville. 18 p.

AWARDS

- **2023** Advanced Skill Milestone in Development & Production Geoscience - Concept Select and Project Delivery (ExxonMobil)
- **2023** Advanced Skill Milestone in Exploration Geoscience - Prospect Generation and Maturation (ExxonMobil)
- **2022** Guyana Technical Leadership for outstanding and creative technical work (ExxonMobil)
- **2022** Advanced Skill Milestone in Development & Production Geoscience - Production Opportunity Generation and Optimization (ExxonMobil)
- **2011** Outstanding Young Alumnus Award for professional promise from the UT Department of Geological Sciences
- **2002** University of Tennessee citation for extraordinary professional promise awarded at the Provost's Honors Banquet
- **2001** C.H. Gordon Award for exceptional professional promise from the UT Department of Geological Sciences
- **1998** George D. Swingle Memorial Award in recognition of excellence and the potential for an outstanding professional career from the Department of Geological Sciences at UT
- **1994 & 1995** Recognition for excellence in undergraduate coursework from the UCSB Geological Sciences Department

TRAINING & SKILLS

Field

- First Aid/CPR with AED
- Field Safety Leadership

Geologic

- Geochronology (SHRIMP-RG and LA-ICPMS)
- Electron and ion microprobe analysis/imaging
- Geochemical analysis (TIMS, XRF, ICP)
- Geologic mapping
- Structural analysis
- Cross section construction/balancing

Education & Advising

- **CIRTL (Center for the Integration of Research Teaching and Learning) STEM Lab Coordinator Group** (2007-2009) Science and Engineering faculty and graduate student group focused on improving the undergraduate experience in STEM disciplines (Vanderbilt University).
- **MAPS (Mental Health Awareness and Prevention of Suicide) training** (May 2008) training as part of campus gatekeeper curriculum for student mental health and substance abuse issues (Vanderbilt University).
- **Strategies for Successful Recruitment of Geoscience Majors: Conceptual Framework and Practical Suggestions** (Oct 2007) Identification and discussion of successful recruitment strategies for geosciences programs (GSA Short Course cosponsored by GSA Geoscience Education Division and NAGT).
- **Leading Effective Review Sessions: Encouraging Learning for the Test and Beyond** (Jan 2007) Panelist for graduate, professional, and post-doctoral student discussion session on review session planning and implementation (Vanderbilt Center for Teaching).
- **Teaching with Technology Working Group** (Spring 2006) Explored ways in which technology can be used to improve teaching practice and student learning including classroom response systems, course management systems, podcasting, presentation & discipline-specific software (Vanderbilt Center for Teaching).
- **Inquiry-Based Labs** (February 2006) Development and implementation of “hands-on” laboratory exercises that allow students to develop hypotheses, design and conduct experiments, collect and interpret data, and write about their results (Vanderbilt Center for Teaching).

Petroleum, Geophysics, and Geographic Information Systems

- 2D/3D seismic interpretation
- Stratigraphy of deep-water channel complexes
- A **Critical Guide to Reservoir Appraisal and Development** (2023) Technical, businesses, and commercial framework for senior staff from geoscience, engineering, and development planning (RPS Group).
- Well log correlation & interpretation
- Structure & isochore maps

- **Geologic and Engineering Aspects of Reservoir Simulation (GEARS)** (2023) Principles of reservoir simulation for reservoir engineers and geoscientists involved with reservoir simulation (ExxonMobil).
- **Geomodel Based Seismic Screening Workshop** (2023) Evaluation of how seismic data is used to generate frameworks and influence property generation for geomodels (ExxonMobil).
- **Advanced Reservoir Modeling Symposium** (2022 and 2019) Geological modeling skill area symposium held jointly with Reservoir Engineering staff (ExxonMobil).
- **Integrated Reservoir Characterization and Management** (2022, 14 days) Senior staff field course to share and explore reservoir management concepts in carbonate and clastic reservoir systems CO-UT-CA (ExxonMobil).
- **Folding, Thrusting, and Syntectonic Sedimentation: Perspectives from Classic Localities of the Central Pyrenees** (2013, 7 days) Field course in Spanish and French Pyrenees focused on syntectonic stratigraphic relationships. Led by Antonio Teixall- Universitat Autònoma de Barcelona (AAPG).
- **Integrated Quantitative Interpretation Internship** (2011-2012, 24 days) Eight 3-day themed courses. 2011 – Advanced Well Tie Techniques, AVO 1: Elastic Property Prediction, and Forward Seismic Modeling. 2012 – *AVO II: Rock Property Predictions, Shale Geophysics, Time-Depth Fundamentals, Core for IQI, and Inversion Volume Interpretation* (ExxonMobil).
- **Extensional Margins** (08/12; 14 days) Field course in the Swiss and Italian Alps focused on the formation and reactivation of rifted margins led by Gianreto Manatschal (ExxonMobil and University of Strasbourg).
- **Structure-Imaging and Interpretation of Salt-Dominated Tectonic Systems** (9/11, 10 days) Classroom and field course (ExxonMobil).
- **Basic Clastic Facies** (12/10, 7 days) Process-based approach to marginal, shallow, and deep marine siliciclastic stratigraphy. Core and well log correlation exercises (ExxonMobil).
- **Assessment Concepts** (2010-2011 4 days; 1 day each topic) Volumetric Concepts; Probability and Geostatistics; Play Assessment Concepts, Risk and Uncertainty (ExxonMobil).
- **Intermediate Geophysics** (05/10, 10 days) Interpreter geophysics skill training – seismic well ties, seismic modeling, and seismic attributes for quantitative seismic data evaluation (ExxonMobil).
- **Petrel for Geologic Interpretation** (10/09, 5 days) Schlumberger Petrel rollout training for geologic interpretation. Emphasized mapping, well log interpretation, and project/data loading and management (ExxonMobil).
- **Volume Interpretation Fast Track Workshop** (09/09, 3 days) Paradigm VoxelGeo and in-house visualization add-in software training (ExxonMobil).
- **Geoframe IES/X and GeoViz** (03/03, 09/10 5 days each) Overview of software package, (Schlumberger).
- **Formation Evaluation** (07/04, 5 days) Emphasized rock and fluid properties, qualitative log interpretation, reservoir identification, porosity estimation, and fluid saturation (ExxonMobil).
- **Fundamentals of Siliciclastic Sequence Stratigraphy** (09/03, 10 days) Field school in Colorado, Utah, and California focused on evaluating fluvial and deep-water siliciclastic outcrops within a sequence stratigraphy framework (ExxonMobil).
- **ArcView** (09/03, 2 days) Arc applications for the petroleum industry (TeachMeGIS).
- **Basic Drilling, Completions, and Workover Operations** (08/03, 3 days) Technical overview of drilling operations, completion practices, and post-completion workover techniques (OGCI Petroskills).
- **Applied Subsurface Geological Mapping** (04/03, 5 days) Contouring and quick-look techniques, seismic interpretation, and assessment (Subsurface Consultants, Inc.).
- **Applied Seismic Interpretation School** (02/03, 15 days) Seismic interpretation, stratigraphy, and structural analysis of hydrocarbon systems (ExxonMobil).
- **Sequence Stratigraphy** (11/01, 2 days) “Sequence Stratigraphy for Graduate Students” (BP and ExxonMobil).
- **Geosec** (08/96, 3 days) & **Landmark** (06/01, 3 days) 2D/3D petroleum software overview (UT-Knoxville).

SERVICE & AFFILIATIONS

- 2024-present Reviewer-Geosphere
- 2024 KVOE Emporia, KS Radio Interview Morning Show with Chuck Staples for “Kansas Geological Survey: Study in early stages for sample site in northwest Lyon County as officials look for more domestic supply of critical minerals”
- 2024 KU News “Kansas Geological Survey assesses potential for critical minerals in eastern Kansas”
- 2024 Kansas Public Radio Interview with Calen Moore for “These ethanol plants want to bury CO₂ in Kansas to cut their carbon footprint”
- 2024 NETL Resource Sustainability Project Review Meeting (CoreCM representative)
- 2023 and 2024 Kansas Independent Oil and Gas Association Mid-year and Annual events
- 2023 Osage Oil and Gas Summit (Pawhuska, OK)
- 2018 Tomball High School Swim booster club Vice-President
- 2011-2013 ExxonMobil Foundation Science Ambassador to Hamilton Elementary (Cy-Fair ISD)
- 2009 Reviewer for GSA Special Paper 461 – Field geology education: historical perspectives and modern approaches
- 2008 Discussion Panelist for Vanderbilt screening of *Kilowatt Ours*
- 2006-2009 Reviewer-Journal of Structural Geology, National Science Foundation, GSA Bulletin
- 2006-2009 Vanderbilt University Pre-Major Adviser
- 2005-2008 Faculty advisor to Vanderbilt University Earth Science club
- 2005 Guest Speaker for Vanderbilt University WilSkills Outdoor course

- 2002 Co-Editor and Co-Leader for the Carolina Geological Society fieldtrip
- 2000-2001 Secretary of the UT–Knoxville AAPG Student Chapter
- 2000 Earth Science Day Trip Leader for 8th grade students
- 1999-2000 Vice-President of the UT–Knoxville AAPG Student Chapter
- 1999, 2001 Oak Ridge Institute for Continued Learning (ORICL) field trip leader
- 1998 Co-Leader of EDMAP Site Visit and Field Review Fieldtrip
- Geological Society of America (GSA) professional member
- GSA Structural Geology & Tectonics Division member
- American Association of Petroleum Geologists (AAPG) member
- Sigma Gamma Epsilon (SGE) earth science honors society member

CONFERENCE PROCEEDINGS (Advised students and mentees underlined)

-2024-

- [1] Andrzejewski, K., Bhattacharjee, S., Peterson, A., and **Bream**, B.R., The Precambrian basement rocks of Kansas (GSA Annual Meeting).
- [2] Bhattacharjee, S., and **Bream**, B.R., An integrated screening approach to support carbon sequestration efforts in Kansas: 3D faulted framework model of the Arbuckle Group & Precambrian basement (GSA Annual Meeting).
- [3] **Bream**, B.R., Gumble, J., and White, M., Subsurface evaluation by the Kansas Geological Survey (KU TORP annual meeting – Tertiary Oil Recovery Project).
- [4] **Bream**, B.R., Gumble, J., and White, M., Subsurface CCS evaluation for a KS midstream operator (CUSP-West Annual meeting – Carbon Utilization and Storage Partnership).
- [5] **Bream**, B.R., and Oborny, S. Critical Minerals in Coaly Strata of the Cherokee-Forest City Basin (FE0032056) (2024 NETL Resource Sustainability Project Review Meeting).

-2023-

- [6] Lu, P., and **Bream**, B.R., Highlighting the HGOR depletion plan which includes the learnings from well operability study, condensate banking study, and fit-for-purpose material balance modeling (Reservoir Management Symposium – ExxonMobil).
- [7] **Bream**, B.R., Hood, K., Moraes, T.M., Marin, R. and Woods, S.G., Pre-Concept Select, Scenario-building Blocks for Guyana HGOR Resource (Geoscience Upstream Innovation & Delivery of Energy Annual Symposium – ExxonMobil).
- [8] Mohammadi, S., Lowe, T., Oborny, S., Bode-Omoleye, I., Smith, J, Ishman, S., **Bream**, B.R., Critical Minerals in Pennsylvanian Black Shales of the US Midcontinent, Kansas (Critical Minerals Economic Development Summit – NSF sponsored).

-2022-

- [9] **Bream**, B.R., Blanker, T., Branets, L., and Marin, R., Fit-for-purpose modeling and integrated asset management: An example from SE Stabok, Guyana (Advanced Reservoir Modeling Symposium – ExxonMobil).
- [10] **Bream**, B.R., and Leach, L., *Geoscience and Reservoir Engineering Integration* (Theme Session co-chair Advanced Reservoir Modeling Symposium – ExxonMobil).
- [11] **Bream**, B.R., Md Yusoff, M., and Kissner, E., Integration and consistency in static and dynamic modeling: Examples from the PNG LNG equity redetermination (Advanced Reservoir Modeling Symposium – ExxonMobil).

-2021-

- [12] **Bream**, B.R., and Datey, A., Fluid contact definition and model initialization: Examples from the Moran Field, western foldbelt Papua New Guinea (Upstream Oil and Gas Techshare – ExxonMobil).

-2020-

- [13] Md Yusoff, M., and **Bream**, B.R., Modeling complex structures in Papua New Guinea – Challenges and Insights (1st AAPG/EAGE PNG Geosciences Conference – Port Moresby).

-2018-

- [14] Ball, S., and **Bream**, B.R., Compartmentalization at Appomattox field, Eastern Gulf of Mexico (Geoscience Intern Forum – ExxonMobil).
- [15] **Bream**, B.R., Glenton, P., Hu, H., The modeling skunkworks and Papua New Guinea: The Fast and the Furious (Advanced Reservoir Modeling Symposium – ExxonMobil).

-2017-

- [16] **Bream**, B.R., Adams, D., Johnson, E., Sze, E., Wagner, E., and Yu, Y., Paleogene play extension in western U.S. GoM (Integrated Interpretation Symposium – ExxonMobil).

-2012-

- [17] **Bream**, B.R., Merschat, A.J., and Hatcher, R.D., Jr., Amalgamation and breakup of Eastern Rodinia, Part I: The southern Appalachians (SE GSA Annual Meeting).
- [18] Hatcher, R.D., Jr., Merschat, A.J., and **Bream**, B.R., Basis of southern Appalachian tectonostratigraphic terrane analysis (SE GSA Annual Meeting).
- [19] MacDonald, C., and **Bream**, B.R., Gulf of Mexico Column Height Study (ExxonMobil).
- [20] Merschat, A.J., and **Bream**, B.R., *Terranes of the southern Appalachian Blue Ridge and Piedmont: Insights into their tectonic heritage and incorporation into the orogen from recent geochronologic, isotopic, provenance, and field studies* (Theme Session co-chair SE GSA Annual Meeting).
- [21] Merschat, A.J., **Bream**, B.R., Hatcher, R.D., Jr., and Huebner, M.T., Paleozoic assembly of the Blue Ridge and Inner Piedmont recorded by metamorphic zircon geochronology (SE GSA Annual Meeting).

-2011-

- [22] Chesney, K., and **Bream**, B.R., Petrel 102: Applied examples from Production Geoscience Special Studies (North American Geotechnician Conference – ExxonMobil).
- [23] Grice, W.G., Jr., and **Bream**, B.R., From model framework construction to resource assessment: Workflows and lessons learned from a heavy-oil production field, Cold Lake, Alberta (Integrated Interpretation Symposium – ExxonMobil).

- [24] Hatcher, R.D., Jr., Merschat, A.J., Huebner, M.T., and **Bream**, B.R., New insight into Inner Piedmont (and Blue Ridge) geology from detailed geologic mapping and modern geochronology (SE GSA Annual Meeting).
-2010-
- [25] **Braun, S.A.**, Gualda, G.A., **Bream**, B.R., and Vlach, S.R., Importance of LA-ICP-MS zircon geochronology and geochemistry in determining the history of magmatic systems: insights from the Graciosa A-type province, southern Brazil (AGU Fall Meeting).
- [26] Merschat, A.J., Hatcher, R.D., Jr., **Bream**, B.R., and Miller, C.F., Age and distribution of southern Appalachian metamorphism delimited by SHRIMP U-Pb metamorphic zircon ages (Goldschmidt Annual Conference).
- [27] Steltenpohl, M.G., Hames, W.E., Key, T.B., Ball, J., Kassos, G., Andresen, A., Anderson, M., Tveten, E., **Bream**, B.R., **Braun, S.A.**, and Rehnstrøm, E.F., The western half of the Ofoten-Lofoten geotranssect (29th Nordic Geological Winter Meeting - Oslo).
-2009-
- [28] **Braun, S.A.**, **Bream**, B.R., Gualda, G.A.R., Age and chemistry of megacrystic zircons from Zirconia, North Carolina (GSA Annual Meeting).
- [29] Hatcher, R.D., Jr., and **Bream**, B.R., Significance of southern Appalachian Blue Ridge and western Inner Piedmont Ordovician plutonic and volcanic assemblages (NE GSA Annual Meeting).
-2008-
- [30] **Braun, S.A.**, **Bream**, B.R., and Bream, K.D., Trace and rare earth element mapping of megacrystic zircon grains using GIS. (GSA Annual Meeting).
- [31] **Bream**, B.R., and Bream, K.D., Creating a meaningful undergraduate oceanography lab experience in Middle Tennessee using student generated data and GIS. (SE GSA Annual Meeting).
- [32] **Bream**, B.R., Hatcher, R.D., Jr., and Merschat, A.J., Looking Outward: Constraints on the kinematics of oblique Devonian-Mississippian accretion of the peri-Gondwanan Carolina superterrane. (GSA Annual Meeting-INVITED).
- [33] **Bream**, B.R., Loewy, S.L., Merschat, A.J., Hatcher, R.D., Jr., and Miller, C.F., Constraints on Blue Ridge and Inner Piedmont paragneiss provenance: Synthesis of detrital zircon and whole-rock Pb isotopic data. (SE GSA Annual Meeting).
- [34] Mapes, R.W., **Bream**, B.R., and Miller, C.F., Mid-Paleozoic magmatism in the eastern Blue Ridge and Inner Piedmont: Constraints from geochemistry and geochronology. (SE GSA Annual Meeting).
- [35] Merschat, A.J., **Bream**, B.R., Hatcher, R.D., Jr., Miller, C.F., and Carrigan, C.W., Delimiting the spatial extent of superposed metamorphic events of the Blue Ridge and Inner Piedmont with SHRIMP U-Pb ages of zircon rims. (SE GSA Annual Meeting).
-2007-
- [36] **Bream**, B.R., Loewy, S.L., Hatcher, R.D., Jr., and Miller, C.F., Reinterpreting the provenance of eastern Laurentian Late Proterozoic rift fill: New whole-rock Pb isotopic constraints. (NE GSA Annual Meeting).
- [37] Merschat, A.J., **Bream**, B.R., Hatcher, R.D., Jr., Miller, C.F., and Wooden, J.L., Provenance and timing of crust formation in the southern Appalachian crystalline core: Evidence from detrital zircon studies. (GSA Annual Meeting).
-2006-
- [38] Wilson, C.G., Hatcher, R.D., Jr., and **Bream**, B.R., The nature and origin of Inner Piedmont Taconian and Neocadian magmatism: Synthesis of recent and new geochemical data (SE GSA Annual Meeting).
-2005-
- [39] **Bream**, B.R., Mapes, R.W., Hatcher, R.D., Jr., Miller, C.F., and Fullagar, P.D., Laurentian and exotic components of the southern Appalachian Inner Piedmont (SE GSA Annual Meeting).
- [40] Hatcher, R.D., Jr., **Bream**, B.R., Merschat, A.J., Mapes, R.W., and Miller, C.F., Evidence for the (Neo-)Acadian orogeny in the southern Appalachians (SE GSA Annual Meeting).
- [41] Hatcher, R.D., Jr., **Bream**, B.R., Miller, C.F., Mapes, R.W., Fullagar, P.D., and Carrigan, C.W., Value of modern geochronology in understanding southern Appalachian accretionary history (NE GSA Annual Meeting).
-2004-
- [42] Hatcher, R.D., Jr., and **Bream**, B.R., New tectonic map of the southern and central Appalachians (V. 2.0) (17th International Basement Tectonics Conference).
- [43] Hatcher, R.D., Jr., and **Bream**, B.R., New tectonic map of the southern and central Appalachians (V. 3.5) (GSA Annual Meeting).
- [44] Hatcher, R.D., Jr., Whisner, S.C., **Bream**, B.R., and Miller, C.F., Sediments derived from mountain chains do not always land in foredeeps: Southern Appalachian Sevier-Blountian basin dynamics (Joint SE & NE GSA Annual Meeting).
- [45] Merschat, A.J., Hatcher, R.D., Jr., **Bream**, B.R., and Mapes, R.W., Middle to Late Paleozoic accretion of the Carolina Terrane: Evidence from the Brindle Creek thrust sheet, Inner Piedmont, North Carolina (Joint SE & NE GSA Annual Meeting).
-2003-
- [46] Berquist, P.J., Miller, C.F., Fullagar, P.D., Carrigan, C.W., Ownby, S., **Bream**, B.R., Hatcher, R.D., Jr., and Wooden, J., Anomalous ancient crust in the southeastern USA: Implications for the assembly of North America and Rodinia (GSA Annual Meeting).
- [47] Hatcher, R.D., Jr., **Bream**, B.R., and Eckert, J.O., Jr., Southern Blue Ridge terranes and problems with rock units, ages, and timing of events: Read the detailed geologic maps (SE GSA Annual Meeting).
-2002-
- [48] **Bream**, B.R., and Hatcher, R.D., Jr., Southern Appalachian terranes amended: Timing of accretion and delimiting provenance from new detrital zircon and Nd isotopic data (GSA Annual Meeting).
- [49] Callahan, J.E., Stepp, J.D., Johnson, N.E., and **Bream**, B.R., Fluorescence and lack thereof in zircons from the Freeman zircon mine, Zirconia District, North Carolina (SE GSA Annual Meeting).
- [50] Hatcher, R.D., Jr., **Bream**, B.R., Fullagar, P.D., Miller, C.F., and Carrigan, C.W., Hints of the mid-continent beyond the Grenville orogen and Gondwanan inheritance in Appalachian terranes (GSA Annual Meeting).
- [51] Hatcher, R.D., Jr., **Bream**, B.R., Miller, C.F., Eckert, J.O., Jr., and Carrigan, C.W., Structure of southern Appalachian Blue Ridge internal massifs of Grenvillian Basement (SE GSA Annual Meeting).
- [52] Kalbas, J.L., **Bream**, B.R., Hatcher, R.D., Jr., and Maybin, A.H., III, Evidence for mafic Ordovician magmatism and Acadian metamorphism in the Brushy Mountains, western Inner Piedmont, or North Carolina (SE GSA Annual Meeting).
- [53] Mapes, R.W., Maybin, A.H., III, Miller, C.F., Fullagar, P.D., and **Bream**, B.R., Geochronology and geochemistry of mid Paleozoic granitic magmatism, central and eastern Inner Piedmont, NC & SC (SE GSA Annual Meeting).

- [54] Merschat, A.J., Hatcher, R.D., Jr., and **Bream**, B.R., The Brindle Creek thrust: A major fault and terrane boundary in the southern Appalachian Inner Piedmont, North Carolina-South Carolina-Georgia (GSA Annual Meeting).
- [55] Panigrahi, M.K., Misra, K.C., **Bream**, B.R., and Naik, R.K., Genesis of the granitoid affiliated copper-molybdenum mineralization at Malanjkhanda, central India: Facts and problems (11th Quadrennial IAGOD Symposium).
- 2001-**
- [56] **Bream**, B.R., Depositional setting and provenance of siliciclastic units in the southern Appalachian crystalline core (AAPG/SEG Student Expo).
- [57] **Bream**, B.R., Hatcher, R.D., Jr., Miller, C.F., Carrigan, C.W., and Fullagar, P.D., Provenance and geochemistry of Late Proterozoic southern Appalachian crystalline core paragneisses, NC-SC-GA-TN (GSA Annual Meeting).
- [58] **Bream**, B.R., Hatcher, R.D., Jr., Miller, C.F., and Fullagar, P.D., Geochemistry and provenance of Inner Piedmont paragneisses, NC and SC: Evidence for an internal terrane boundary? (SE GSA Annual Meeting).
- [59] Carrigan, C.W., **Bream**, B.R., Miller, C.F., and Hatcher, R.D., Jr., Ion microprobe analyses of zircon rims from the eastern Blue Ridge and Inner Piedmont, NC-SC-GA: Implications for the timing of Paleozoic metamorphism in the southern Appalachians (SE GSA Annual Meeting).
- [60] Carrigan, C.W., Miller, C.F., Fullagar, P.D., Hatcher, R.D., Jr., **Bream**, B.R., and Coath, C.D., 2001, Age and geochemistry of southern Appalachian basement, NC-SC-GA, with implications for Proterozoic and Paleozoic reconstructions (GSA Annual Meeting).
- [61] Kalbas, J.L., Merschat, A.J., Hatcher, R.D., Jr., and **Bream**, B.R., Detailed geologic mapping of the Brushy Mountains, Inner Piedmont, near Lenoir, North Carolina (GSA Annual Meeting).
- [62] Mapes, R.W., Miller, C.F., Fullagar, P.D., and **Bream**, B.R., Acadian plutonism in the Inner Piedmont and eastern Blue Ridge, North Carolina and northern Georgia (SE GSA Annual Meeting).
- [63] Mapes, R.W., Miller, C.F., Fullagar, P.D., and **Bream**, B.R., Nature and origin of Acadian plutonism, Piedmont Terrane, NC-GA (GSA Annual Meeting).
- [64] Settles, D.J., **Bream**, B.R., and Hatcher, R.D., Jr., The Sally Free mafic complex and associated mafic rocks of the Dahlonga gold belt: Evidence of Ordovician arc volcanism and intrusion northwest of Dahlonga, Georgia (GSA Annual Meeting).
- [65] Settles, D.J., Hatcher, R.D., Jr., and **Bream**, B.R., Tectonostratigraphic relationships that define a fundamental Appalachian terrane boundary within the central Blue Ridge of north Georgia (SE GSA Annual Meeting).
- [66] Thomas, C.W., Miller, C.F., Fullagar, P.D., Meschter-McDowell, S.M., Vinson, S.B., and **Bream**, B.R., Where is the arc? Discontinuities in Taconian arc magmatism in the southern Appalachians (GSA Annual Meeting).
- [67] Thomas, C.W., Miller, C.F., **Bream**, B.R., and Fullagar, P.D., Origins of mafic-ultramafic complexes of the eastern Blue Ridge, southern Appalachians: Geochronologic and geochemical constraints (SE GSA Annual Meeting).
- 2000-**
- [68] Bier, S.E., **Bream**, B.R., and Hatcher, R.D., Jr., Detailed geologic mapping of the western and central Inner Piedmont, North Carolina (GSA Annual Meeting).
- [69] **Bream**, B.R., Hatcher, R.D., Jr., Miller, C.F., and Fullagar, P.D., Paragneiss geochemistry and preliminary ion microprobe geochronology of detrital zircons from the southern Appalachian crystalline core (GSA Annual Meeting).
- 1999-**
- [70] **Bream**, B.R., Hill, J.C., Giorgis, S.D., Williams, S.T., and Hatcher, R.D., Jr., New digital geologic 7.5' quadrangle maps from part of the western Inner Piedmont of North Carolina (SE GSA Annual Meeting).
- [71] Hatcher, R.D., Jr., **Bream**, B.R., Hill, J.C., Giorgis, S.D., and Williams, S.T., Transect through the Acadian Orogen in the Carolinas and NE Georgia (SE GSA Annual Meeting).
- 1998-**
- [72] **Bream**, B.R., Hatcher, R.D., Jr., and Hill, J.C., The Henderson Augen Gneiss of the western Inner Piedmont, NC & SC (GSA Annual Meeting).
- [73] **Bream**, B.R., Hill, J.C., and Hatcher, R.D., Jr., Use of detailed digital geologic and derivative maps to resolve the structure and stratigraphy in part of the western Inner Piedmont, North Carolina (SE GSA Annual Meeting).
- [74] Hill, J.C., **Bream**, B.R., and Hatcher, R.D., Jr., Structure and stratigraphy of part of the Inner Piedmont near Marion, North Carolina (SE GSA Annual Meeting).
- 1997-**
- [75] **Bream**, B.R., Hill, J.C., and Hatcher, R.D., Jr., Value of traditional detailed geologic mapping, augmented by technology to resolve the structure in part of the western Inner Piedmont, North Carolina (GSA Annual Meeting).