

Curriculum Vitae

STEPHAN CHARLES OBORNY, PhD

Kansas Geological Survey
1930 Constant Ave.
Lawrence, KS 66047-3724, USA

Phone: +1-785-864-1376
E-mail: obornys@ku.edu
Citizenship: United States
www.linkedin.com/in/stephanoborny

EDUCATION AND PROFESSIONAL HISTORY

Higher Education

2015 – 2019	Ph.D.	Geological Sciences	University of Iowa
2013 – 2015	M.S.	Geological Sciences	University of Iowa
2009 – 2012	B.S.	Geological Sciences	University of Kansas
2006 – 2007	A.S.	Electrical Technology	Johnson County Community College

Professional and Academic Positions

2020 – Present	Assistant Research Professor (Stratigraphic Research Group)	Kansas Geological Survey
2019 – 2020	Postdoctoral Researcher (Energy Research Group)	Kansas Geological Survey
2019 – 2019	Lecturer (Intro. to Earth Science)	University of Iowa
2013 – 2019	Graduate Teaching and Research Assistant	University of Iowa
2012 – 2013	Field and Research Assistant, Kansas Geological Survey	University of Kansas
2012 – 2013	Athletics Department Geosciences Tutor	University of Kansas
2007 – 2009	Residential Installation and Alteration Electrician	Ashburton, New Zealand
2005 – 2007	Journeyman Electrician	Topeka, Kansas
2002 – 2006	Restaurant Manager, Rudys Pizzeria	Lawrence, Kansas

Teaching Assistantships (Field Courses < 15 weeks > / Lecture Courses at the University of Iowa)

2018	Geology of U.S. National Parks (States Visited: NE, WY, UT, NV, CA ; 21 students)	Field
2017/2018/2019	Sophomore, Junior, and Senior Class Trips (States Visited: MO, AR, SD ; 18/15/10 students)	Field
2015/2017/2018	Guadalupe Mountains and Big Bend National Park (Capitan Reef Complex ; 17/18/16 students)	Field
2017/2019	Geology of San Salvador Island, Bahamas (Carbonate Sedimentology ; 15/14 students)	Field
2015/2016	Geological Field Methods; Dillon, Montana (Geology Field Camp ; 23/22 students)	Field
2018	The History and Science of Oil (74 students)	Lecture
2017	Natural Disasters (50 students)	Lecture
2015	Evolution and the History of Life (49 students)	Lecture
2014	Introduction to Earth Science (51 students)	Lecture

ACADEMIC HONORS AND AWARDS

- 2018: North Central GSA Graduate Student Poster Runner Up (out of 64), Ames, Iowa
- 2015: A.C. Trowbridge Award for most outstanding M.S. Student: U of I Department of Earth and Environmental Sciences
- 2014: Max and Lorraine Littlefield Scholarship; for Academic Merit
- 2011-2012: Ray P Walters Geology Scholarship; for Academic Merit
- 2011-2012: Dean A. McGee Geology Scholarship; for Academic Merit
- 2011-2012: H.A. & Elsie Ireland Scholarship; for Academic Merit

WORKSHOPS AND SHORTCOURSES

- The rise of [Silurian] pinnacle reefs: Islands of diversity in seas of despair, National GSA 2018
- Petrophysics of Unconventional Reservoirs, AAPG Mid-Continent Section Meeting 2017
- ExxonMobile: Sequence Stratigraphy Workshop, University of Iowa, Spring 2014/Fall 2016
- Aspects of the Paleozoic History of Epeiric Seas of the Iowa Basin, SEPM, Fall 2013
- Berexco: Oil Rig Operations and Functionality Short Course, AAPG/University of Kansas, Spring 2013
- Chesapeake: Core Analyses and Interpretation Workshop, Fall 2012

PROFESSIONAL AFFILIATIONS

- American Association of Petroleum Geologist (AAPG)–*Member* (2011–Present)
- Geological Society of America (GSA)–*Member* (2011–Present)
- Society of Sedimentary Geology (SEPM)–*Member* (2011–Present)

PEER REVIEWED JOURNAL ARTICLES

- Oborny, S.C.**, Cramer, B.D., Brett, C.E., and Bancroft, A.M., 2020 (Dissertation Chapter). Integrated Silurian conodont and carbonate carbon isotope ($\delta^{13}\text{C}_{\text{carb}}$) bio-chemostratigraphy of the East-Central Appalachian Basin. *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 554, p. 1-16.
- Oborny, S.C.**, Cramer, B.D., and Brett, C.E., 2020 (Dissertation Chapter). High-Resolution Event Stratigraphy (HiRES) of the Silurian across the Cincinnati Arch (USA) through integrating conodont and carbon isotope biochemostratigraphy, with gamma-ray and sequence stratigraphy. *Geologiska föreningen (GFF)*, v. 142, n. 4, p. 309-324.
- Hartke, E.R., Cramer, B.D., Calner, M., Melchin, M.J., Barnett, B.A., **Oborny, S.C.**, and Bancroft, A.M., 2020. Decoupling $\delta^{13}\text{C}_{\text{carb}}$ and $\delta^{13}\text{C}_{\text{org}}$ at the onset of the Ireviken Excursion: $\Delta^{13}\text{C}$ and f_{org} during a Silurian oceanic anoxic event. *Journal of Global and Planetary Change*, v. 196. Currently available online.
- Biebesheimer, E.J., Cramer, B.D., Calner, M., Barnett, B.A., **Oborny, S.C.**, and Bancroft, A.M., *in review*. Asynchronous $\delta^{13}\text{C}_{\text{carb}}$ and $\delta^{13}\text{C}_{\text{org}}$ records during the onset of the Mulde (Silurian) positive carbon isotope excursion from the Altajme core, Gotland, Sweden. *Chemical Geology*.
- Rinderknecht, C., Hasiuk, F.J., and **Oborny, S.C.**, *in review*. Mg-zonation in low-Mg calcite microcrystals: Implications for a genetic relationship between microcrystal texture and diagenesis. **Target Journal:** *Journal of Sedimentary Research*.
- Oborny, S.C.**, Cramer, B.D., and Brett, C.E., *in coauthor review* (Dissertation Chapter). Chronostratigraphic correlation of the upper Silurian Salina Group for the Michigan and Appalachian basins through coupled ($\delta^{13}\text{C}_{\text{carb}}$) chemostratigraphy and subsurface geophysical analyses. **Target Journal:** *Geosphere*.
- Oborny, S.C.**, and Hasiuk, F.J., *in prep.* Basin analysis of eastern Kansas and a newly identified forebulge—backbulge setting associated with the Ouachita Orogeny. **Target Journal:** *Tectonophysics*.
- Oborny, S.C.**, and Hasiuk, F.J., *in prep.* Subsurface geophysical correlations of eastern Kansas. **Target Journal:** *Midcontinent Geoscience*.
- Oborny, S.C.**, Cramer, B.D., Heckel, P.H., Ludvigson, G.A., and Henthorne, R.W., 2017 (M.S. Thesis). Development of Phylloid-algal carbonate mounds during regression: Expanding the build-and-fill model. *Journal of Sedimentary Research*, v. 87, p. 688-706.
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FIRST AUTHORSHIPS (ORAL & POSTER)

- Oborny, S.C.**, and Hasiuk, F.J., 2020. (ORAL) New Evidence for substantial shear in eastern Kansas; providing relative age constraint for the onset of the Ouachita Orogeny. *GSA Abstracts with Programs*, v. 52 (6).
- Oborny, S.C.**, and Hasiuk, F.J., 2020. (ORAL) Assessing the internal depositional motif of Pennsylvanian aged strata (upper Cherokee through Shawnee groups) in eastern Kansas. *Kansas Interdisciplinary Carbonates Consortium (KICC) Virtual Meeting 2020*.
- Oborny, S.C.**, 2020. (Invited Lecturer) Recent Advancement in Chronostratigraphic Methodologies and the Present—Future Trajectory of Midcontinent Stratigraphic Research. *Wichita State University Lecture Series*.
- Oborny, S.C.**, 2020. (ORAL) KDOT Research in Aggregate Stratigraphy. *Iowa DOT kickoff meeting for Phase III Iowa Pore Index: Morphometric Properties of Aggregates, Project (SPR357)*.
- Oborny, S.C.**, Cramer, B.D., Brett, C.E., and Bancroft, A.M., 2019. (ORAL) Providing HiRES Chronostratigraphic constraint to the upper Silurian Salina Group within the Appalachian and Michigan basins. *GSA, Abstracts with Programs*, v. 51 (5).
- Oborny, S.C.**, Bancroft, A.M., Brett, C.E., and Cramer, B.D., 2018a. (POSTER) Improving chronostratigraphic correlation of Wenlock-Pridoli (Silurian) strata of the Appalachian Foreland Basin (Virginia, West Virginia, Ohio) through the use of high-resolution event stratigraphy (HIRES). *GSA Abstracts with Programs*, v. 50 (4).
- Oborny, S.C.**, Bancroft, A.M., Brett, C.E., and Cramer, B.D., 2018b. (POSTER) Revisions to the chronostratigraphic correlation of Wenlock—Pridoli (Silurian) strata of the south-central and western margins of the Appalachian Basin. *GSA Abstracts with Programs*, v. 50 (6).
- Oborny, S.C.**, Bancroft, A.M., Brett, C.E., and Cramer, B.D., 2017a. (POSTER) Using high-resolution event stratigraphy (HIRES) to revise the chronostratigraphic correlation of Wenlock-Pridoli (Silurian) strata of the central and western Appalachian Foreland Basin (Ohio, West Virginia, Virginia). *GSA Abstracts with Programs*, v. 49 (6).
- Oborny, S.C.**, Cramer, B.D., Heckel, P.H., Ludvigson, G.A., and Henthorne, R.W., 2017b. (POSTER) Expanding the Build-and-Fill Model: ‘Phylloid-Algal’ carbonate mound development. *AAPG Mid-Continent Section Meeting*.
- Oborny, S.C.**, 2016. (Invited Lecturer) Recalibration of the Zarah Subgroup (upper Pennsylvanian, Missourian Stage) of Eastern Kansas and its Impact on Regional Stratigraphic Nomenclature. *48th Annual Geotechnical Engineering Conference*, Lawrence, Kansas.

- Oborny, S.C.**, and Cramer, B.D., 2016. **(ORAL)** Catch-down cyclothems from the Pennsylvanian of Kansas. *GSA Abstracts with Programs*, v. 48 (7).
- Oborny, S.C.**, Ludvigson, G.A., Henthorne, R.W., Heckel, P.H., and Cramer, B.D., 2015a. **(ORAL)** Depositional Build-and-Fill within the Zarah Subgroup (upper Pennsylvanian, Missourian Stage) of Miami County, Kansas: Integrated Lithostratigraphy, Biostratigraphy, $\delta^{13}\text{C}_{\text{carb}}$ Chemostratigraphy, and geophysical well-log data. *GSA Abstracts with Programs*, v. 47 (7).
- Oborny, S.C.**, Ludvigson, G.A., Henthorne, R.W., Heckel, P.H., and Cramer, B.D., 2015b. **(POSTER)** High-resolution Stratigraphy of Miami County, Kansas: Integrated Lithostratigraphy, Biostratigraphy, and $\delta^{13}\text{C}_{\text{carb}}$ Chemostratigraphy within the upper Pennsylvanian, Missourian Stage. *University of Iowa Hawkeye Homecoming Poster Symposium Abstract*.
- Oborny, S.C.**, Ludvigson, G.A., Sawin, R.S., Henthorne, R.W., Heckel, P.H., and Cramer, B.D., 2014. **(ORAL)** High-resolution Missourian (upper Pennsylvanian) Stratigraphy of Miami County, Kansas: Integrated Lithostratigraphy, Biostratigraphy, and $\delta^{13}\text{C}_{\text{carb}}$ Chemostratigraphy. *GSA Abstracts with Programs*, v. 46 (6).
- Oborny, S.C.**, Cramer, B.D., Ludvigson, G.A., and Henthorne, R.W., 2012a. **(POSTER)** Limestone aggregate resources in Northeast Kansas: Integrated lithostratigraphy, stable isotope chemostratigraphy, and cathodoluminescence as a tool to evaluate current and potential aggregate resources in Miami County, Kansas. *GSA Abstracts with Programs*, v. 44 (7).
- Oborny, S.C.**, Cramer, B.D., Ludvigson, G.A., Sawin, R.S., and Henthorne, R.W., 2012b. **(POSTER)** Limestone aggregate resources in Kansas: Lithostratigraphy as a tool to evaluate current and potential aggregate resources in Miami County, NE Kansas. *G-Hawk Symposium Abstract*, Lawrence, Kansas.
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OTHER--NON FIRST AUTHORSHIPS (ORAL & POSTER)

- Arts, M.C.M., Cramer, B., Calner, M., Rasmussen C.M.Ø, Bancroft, A.M., **Oborny, S.C.**, Hartke, E., Biebesheimer, E., and Silva, A.C.Da, 2020. Cyclo and chemostratigraphic characteristics of the Middle Silurian in Gotland, Sweden. *EGU General Assembly Abstract*.
- Barnes, G.L., Trayler, R.B., Cramer, B.D., Calner, M., Bancroft, A.M., and **Oborny, S.C.**, 2019. A Bayesian age-depth model for the Silurian Altajme Core, Gotland, Sweden. *GSA Abstracts and Programs*, v.51 (5).
- Biebesheimer, E.J., Cramer, B.D., Calner, M., **Oborny, S.C.**, and Bancroft, A.M., 2019. Paired organic and carbonate carbon isotope chemostratigraphy of the Mulde excursion from the Altajme Core, Gotland, Sweden. *GSA Abstracts and Programs*, v.51 (5).
- Biebesheimer, E.J., Cramer, B.D., **Oborny, S.C.**, and Bancroft, A.M., 2019. Paired organic and carbonate carbon isotope chemostratigraphy of the Mulde Excursion from the Altajme Core, Gotland, Sweden. *GSA, South-Central/North-Central/Rocky Mountain Joint Section Meeting*, v. 51 (2).
- Hartke, E.R., Cramer, B.D., Calner, M., **Oborny, S.C.**, and Bancroft, A.M., 2019. High-Resolution Paired Organic and Carbonate Carbon Isotope Chemostratigraphy of the Ireviken Excursion (Silurian) from the Altajme Core, Gotland, Sweden. *GSA Abstracts and Programs*, v.51 (5).
- Hartke, E.R., Cramer, B.D., **Oborny, S.C.**, and Bancroft, A.M., 2019. Examining the coincidence of organic and carbonate carbon isotope perturbations during the Ireviken extinction event (Wenlock, Silurian). *GSA, South-Central/North-Central/Rocky Mountain Joint Section Meeting*, v. 51 (2).
- Bancroft, A.M., Cramer, B.D., and **Oborny, S.C.**, 2018. Silurian conodont biostratigraphy of the Appalachian Basin: A reexamination of C.T. Helfrich's collection. *GSA Abstracts with Programs*, v. 50 (6).
- Anthony, L., Newell, D., **Oborny, S.C.**, Ludvigson, G.A., and Dunham, J., 2018. Geologic mapping in Miami County, Kansas. *Geological Mapping Forum, Abstracts*. Minnesota Geological Survey Open File Report OFR-18-1
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PROFESSIONAL SERVICE

Peer Reviewer (3 manuscripts)

Midcontinent Geoscience, Stratigraphy

Meeting Service (topical session co-chair)

GSA joint North-Central/South-central section Meeting, Springfield, MO, 2021.

Description: This session seeks new research that utilizes multi-proxy datasets (e.g., well logs, bio-, sequence-, chemo-, or lithostratigraphic techniques) to enhance chronostratigraphic constraint in Late Paleozoic (Devonian, Mississippian, Pennsylvanian, Permian) strata within the Midcontinent of North America.

FUNDING PROPOSALS

Ongoing

- 1) US Geological Survey, FY20 STATEMAP. “Geological Mapping in Kansas for FY 20.” Smith, J.J. (PI), Co-PIs: Layzell, A., Hasiuk, F., **Oborny, S.**, Ludvigson, G.A., Mandel, J.R., and Dunham, J.W., 2020. Award amount: \$427,965.
- 2) US Department of Energy (DOE) Energy Storage for Fossil Power Generation. “H-2-Salt: Storing Fossil Energy as Hydrogen in Salt Caverns”. Hasiuk, F. (PI), Co-PIs: Holubnyak, E., Hollenbach, J., **Oborny, S.**, Meng, J., Byron, M., Krishnamurthy, D., Wilkus, D., and Greene, G., 2020. Award/RFP# DE-FOA-0002332. Award amount: \$250,000.

Pending

- 1) US Department of Energy (DOE) Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative for U.S. Basins. “C_MC_SC_FC_B—Critical Minerals in Coaly Strata of the Cherokee-Forest City Basin”. **Oborny, S.**, and Hasiuk, F., (Joint PIs), Co-PIs: Bode-Omoleye, I., Holubnyak, E., Hollenbach, J., Clark, R., Cramer, B., Hayman, N., Cardott, B., Seyedolali, A., Suriamin, F., Pierce, L., Ellis, T., Joeckel, M., and Lynn, W., 2021. Total Federal and State match amount Requested: \$1,875,000.
- 2) US Geological Survey, FY21 STATEMAP. “Geological Mapping in Kansas for FY 21”. Smith, J.J. (PI), Co-PIs: Layzell, A., Hasiuk, F., Ludvigson, G.A., Mandel, R.D., Ishman, S., **Oborny, S.**, Dunham, J.W., Franseen, E., Ortega-Ariza, D., Bode-Omoleye, I., and Mohammadi, S., 2020. Total Federal and State match amount Requested: \$1,439,559.
- 3) US Geological Survey, National Geological and Geophysical Data Preservation Program (NGGDPP). “Preserving Kansas Geologic Data, Documents, Samples, and Aerial Photographs; and Surveying Critical Mineral Resources, FY 2021”. Stewart, D., **Oborny, S.**, Hasiuk, F., and Potter, N., 2021. Amount Requested: \$35,000.

Pre Proposals

- 1) US Geological Survey Earth MRI Critical Minerals Initiative. “Critical minerals in Pennsylvanian black shales of the U.S. Midcontinent”. **Oborny, S.** (PI), Co-PIs: Hasiuk, F., Smith, J.J., Mastalerz, M., McLaughlin, P., Clark, R., Pierce, L., Devera, J., Elrick, S., Andrews, W., McDonald, J., McCafferty, A., and Emsbo, P., 2020. Amount Requested: N/A
- 2) US Geological Survey Earth MRI Critical Minerals Initiative. “Helium in Kansas”. Hasiuk, F., **Oborny, S.**, and Smith, J., 2020. Amount Requested: N/A
- 3) US Geological Survey, National Geologic Map Database Phase 3. “Pennsylvanian stratigraphic nomenclature reconciliation in the midcontinent”. Layzell, T. (PI), Co-PIs: **Oborny, S.**, and Smith, J.J., 2020. Amount Requested: \$160,000.

PROFESSIONAL SKILLS

- Basin Modeling (2D-3D)
- Core Analyses
- Outcrop Analyses
- Chronostratigraphy
- Sequence Stratigraphy
- Subsurface Stratigraphic Modeling
- Geophysical Well-Log Analyses
- Biostratigraphy
- Chemostratigraphy
- Aggregate Stratigraphy
- Petrophysical & grain-size-density analyses of aggregates

LAB & HANDS-ON SKILLS

- Conodont Extraction
- Stable Isotope Sampling, Preparation, and Processing
- Heavy Liquids Separation
- Magnetic Separation (B.F.)
- Thin Section Preparation
- Stack-shot Photography
- Hg-He Porosimetry
- Camsizer Analysis
- Cathodoluminescence
- Heavy Machinery Operation
- Former Electrician
- Surveying

COMPUTATIONAL

- Petra
- Petrel (training)
- Microsoft Office Software Suite
- Adobe Software Suite (e.g. Illustrator, Photoshop, etc.)
- ESRI Software Suite (ArcGIS)
- AutoCAD Software
- ERDAS IMAGINE II

PUBLIC OUTREACH / SERVICE

2020	Kansas Geological Survey—Osage Indian Nation (Building relations between the KGS and Indian Nations)
2020	2020 Kaw Valley Eagles Day (contributor), Lawrence, Kansas
2019	“Discovery Days” at the KU Natural History Museum (contributor), Lawrence, Kansas
2014/2016	Devonian Fossil Gorge Paleontological Field Guide, Iowa City, Iowa
2015	Iowa Hawkeye Caucus; University of Iowa, CLAS Representative, Des Moines, Iowa
2012	Guest Instructor, “ <i>The Geology Around Us</i> ”, Windom Elementary School, Windom, Kansas