

PATRICK I. MCLAUGHLIN PhD

Home Address:

1707 Bentbrook Dr.
Champaign, Illinois 61822

Office Address:

Illinois State Geological Survey
Prairie Research Institute
University of Illinois, Urbana-Champaign
615 E. Peabody Drive
Champaign, IL 61820

EDUCATION:

PhD in Geology, 6/1/2006, University of Cincinnati, Cincinnati, Ohio

Dissertation: *Cratonic sequence stratigraphy: advances from analysis of mixed carbonate-siliciclastic successions*
Supervisor Dr. Carlton Brett

Master of Science in Geology, 6/1/2002, University of Cincinnati, Cincinnati, Ohio

Thesis: *Upper Ordovician seismites of Kentucky and Ohio: a sedimentological and sequence stratigraphic approach*, Supervisor Dr. Carlton Brett

Bachelor of Science, 6/1/1999 Illinois State University, Normal, Illinois

Senior Thesis: *Finite strain analysis of deformed quartzite clasts within the Proterozoic Nemo Conglomerate, Nemo, South Dakota*, Supervisor Dr. David Malone

CURRENT POSITIONS:

1/4/2022-present: **Research Geologist**, Illinois State Geological Survey, University of Illinois, Champaign-Urbana

OTHER PROFESSIONAL EXPERIENCE

2006-present	Consulting geologist
2015-2021	Research Geologist, Indiana Geological and Water Survey, Indiana University–Bloomington
2014-2015	Associate Professor (with tenure), Department of Environmental Sciences, University of Wisconsin-Extension, Madison, Wisconsin
2013-2015	Bedrock Group Leader, Wisconsin Geological and Natural History Survey
2007-2014	Assistant Professor, Department of Environmental Sciences, University of Wisconsin-Extension, Madison, Wisconsin
2007-2015	Affiliate faculty, Department of Geoscience, University of Wisconsin-Madison, Madison, Wisconsin
2006-2007	Assistant Professor (visiting), Bucknell University, Lewisburg, Pennsylvania
2005	Adjunct Professor, University of Cincinnati, Cincinnati, Ohio
2004	Exploration Geologist (summer intern), BP America Inc., Houston, Texas

STUDENT ADVISING AND MENTORING

2023-present	Fine Jonckheere (MS co-advised with Dr. Thijs Vandenbroucke, University of Ghent, Belgium) Chitinozoan biostratigraphy of the Late Aeronian carbon isotope excursion, Anticosti Island, Quebec.
2023-present	Kaatje Peirs (MS co-advised with Dr. Thijs Vandenbroucke, University of Ghent, Belgium) Distal expression of the Graf phosphorite
2023-present	Lena Lardinois (MS co-advised with Dr. Thijs Vandenbroucke, University of Ghent, Belgium) Phosphogenesis during Elkhorn Event in the southern Midcontinent Basin
2022-2023	Rosalía-Alba Vittiglio (MS co-advised with Dr. Thijs Vandenbroucke, University of Ghent, Belgium): A chitinozoan biostratigraphic framework for the top of the phosphate-REE-bearing Maquoketa Group in the US Midcontinent. (<i>anticipated completion 8/2023</i>)
2021-present	Carolina Klock (Ph.D, co-advised with Dr. Thijs Vandenbroucke, University of Ghent, Belgium and Poul Emsbo, US Geological Survey): Metal-induced malformations in fossil zooplankton from Silurian oceanic anoxic events (<i>anticipated completion 2026</i>)
2019-present	Cristiana Esteves (Ph.D, co-advised with Dr. Thijs Vandenbroucke, University of Ghent, Belgium): High-resolution temporal framework for the Late Ordovician mass extinction in the Illinois Basin (<i>anticipated completion 2024</i>)
2016-present	Julie De Weirdt (Ph.D, outside committee member, University of Ghent): Metal-induced malformations in fossil zooplankton associated with early Paleozoic mass extinctions (<i>anticipated completion 2023</i>)
2014-2023	Allison Young (Ph.D, co-advised with Dr. Carlton Brett, University of Cincinnati) (partially supported by Hess Corp.): Chemostratigraphic correlation of organic-rich deep-water shales to platform carbonates (Utica-Point Pleasant system; Upper Ordovician, Ohio-Kentucky) (<i>completed 6/2023</i>)
2018-2019	Wiebe Degraeuwe (MS, co-advised with Dr. Thijs Vandenbroucke, University of Ghent) Chitinozoan biostratigraphy of the Fernvale Limestone and Cape de Croix Shale (Upper Ordovician, Delphi, Indiana) (<i>completed 9/2019</i>)
2016-present	Matthew Rine (PhD, co-advisor, Western Michigan University): Silurian reef facies and chronostratigraphy of Michigan Basin, USA (<i>completed 3/2019</i>)
2017-2018	Tim De Backer (MS, committee member, University of Ghent): Palynology of the Upper Ordovician Maquoketa Group, western Michigan Basin (<i>completed 6/2017</i>)
2014-2017	Michael Hurth (MS, committee member, Colorado School of Mines): Iron formations associated with the Sturtian glacial event: Katangan basin and Damaran platform (<i>completed 5/2017</i>)
2015-2016	Jules Vellerman (MS, committee member, Ghent University, Belgium): Chitinozoan biostratigraphy of the Maysvillian (Upper Ordovician) type-area (<i>completed 6/2016</i>)
2011-2013	Nicholas Sullivan (MS, co-advised with Dr. Carlton Brett, University of Cincinnati): Refinements to the depositional history of Lower Silurian strata (<i>completed 6/2013</i>)
2010-2012	Michael Hurth (undergraduate thesis, co-advised with Dr. Shanan Peters, UW-Madison): The Ordovician-Silurian boundary in Wisconsin (<i>completed 6/2012</i>)
2006-2007	Anya Hess (undergraduate thesis, co-advised with Dr. Jeff Trop, Bucknell University): Sequence stratigraphy and carbon isotope geochemistry of the Siluro-Devonian boundary interval in central Pennsylvania (<i>completed 6/2017</i>)

GRANTS AND CONTRACTS

2023-2026	US Geological Survey Earth MRI; Critical minerals in Pennsylvanian black shales of the US midcontinent (\$225,000)
2021-2023	US Geological Survey Earth MRI; Ordovician phosphate REE resources of the Appalachian and Illinois basins (\$75,000)
2020-2022	US Geological Survey Earth MRI; Devonian phosphate REE resources of the Appalachian and Illinois basins (\$125,000)
2019-2020	National Cooperative Geologic Mapping Program (NCGMP): Chicago East Quadrangle (1:100,000 scale) (\$65,000)
2018-2019	NCGMP StateMap: <i>Knox Quadrangle (1: 100,000 scale)</i> ; (\$115,000)
2016-2018	NCGMP StateMap: <i>Logansport Quadrangle (1:100,000 scale)</i> ; (\$260,000)
2016-2017	US Geological Survey contract: <i>Silurian conodont geochemistry</i> (\$20,000)
2016	Faculty Research Support Program-Seed Funding, Office of the Vice Provost for Research, Indiana University: <i>pXRF chemical stratigraphy: transforming understanding of mass extinctions in the geologic record</i> (\$36,245)
2015-2016	NCGMP StateMap: <i>Morgan County, Indiana</i> (\$185,000)
2012-2014	NCGMP StateMap: <i>Manitowoc County, Wisconsin</i> (\$180,000)
2012-2014	NCGMP StateMap: <i>Columbia County, Wisconsin</i> (\$118,000)
2012-2013	US Geological Survey contract: <i>Chronomap pilot project</i> (\$15,000)
2012-2013	US Geological Survey contract: <i>US Phosphate Resources</i> (\$130,000)
2011-2012	Madison Water Utility contract: Potential sources of naturally occurring chromium in municipal drinking water wells (\$8000)
2010-2011	NCGMP StateMap: <i>Sheboygan County, Wisconsin</i> (\$341,000)
2008-2013	NSF Collaborative Research Grant (EAR 081920): <i>Foreland basin development and biotic change in Late Ordovician trilobite faunas of eastern North America</i> (outside collaborator; \$10,000)
2008	UW-Extension Project Innovation Grant: <i>Wisconsin Geological Record—A community-based, web archive for geologic data</i> (\$30,000)
2006-2010	NSF Collaborative Research Grant (EAR 0518511): <i>High-resolution sequence and event stratigraphy of mid-Silurian strata in eastern North America and Avalonia</i> (postdoctoral and collaborative study; \$50,000)
2001	Geological Society of America— <i>Student Research Grant</i> (\$1200)
1999	American Association of Petroleum Geologists— <i>Research Grant in Aid</i> (\$1500)

AWARDS AND HONORS:

2002-2005 Distinguished Graduate Fellowship, University of Cincinnati
2002 SEPM—Best Student Paper, GSA North-Central Section Meeting
1999-2002 Graduate Teaching Assistantship, University of Cincinnati
1999 Cum Laude, Illinois State University

TEACHING ACTIVITIES:University of Indiana-Bloomington

2016 SP16 Advanced Geology Seminar

University of Wisconsin-Madison

2015 GEOSCI 875 Carbonate Stratigraphy
2008-2014 GEOSCI 875 Sed-Paleo Seminar (faculty co-leader and participant)

Bucknell University

Spring 2007 GEOL 213 Paleontology
Spring 2007 GEOL 104 Evolution of the Earth
Fall 2006 GEOL 103 The Dynamic Earth
Fall 2006 GEOL 104 Evolution of the Earth

University of Cincinnati

Fall 2005 GEOL 205 Geobiology I—Processes of Earth History
Summer 2005 GEOL 107 Field Geology of the Cincinnati Region
Summer 2005 GEOL 134A Earth Revealed (online)
Summer 2005 GEOL 134B Earth Revealed (online)

ADDITIONAL EDUCATION AND WORKSHOPS

2020 US Geological Survey, Earth MRI Phase 3 Workshop (critical minerals initiative)
2019 US Geological Survey, Earth MRI Phase 2 Workshop (critical minerals initiative)
2008 Teaching Field Methods in Geology Using Rugged Tablet Computers, GPS, and Digital Data.
GSA Annual Meeting 2008, short course
2006 Workshop on the Teaching of Writing, Bucknell University (four days of lectures, discussions,
and exercises focused on improving student writing as active learning)
2005 Preparing for an Academic Career in the Geosciences: A workshop from graduate students and
post-doctoral fellows; NSF-funded workshop, Penn State University
2002 Advanced Coral Reef Ecology of Curacao, Netherlands Antilles; Miami University
2001 Introductory Coral Reef Ecology of Curacao, Netherlands Antilles; Miami University
2001 Sequence Stratigraphy for Graduate Students; GSA Short Course
2000 Carbonate Depositional Environments, Florida Keys, San Salvador Island, Bahamas; Miami U.

ORGANISATION OF SCIENTIFIC MEETINGS

- 2022 Technical Session Co-chair, *Integrated Studies of Black Shales*, GSA Joint North-central–Southeastern Section Meeting, Cincinnati, Ohio
- 2019 Technical Session Co-chair, *Testing the Fidelity of C-isotope Records as Proxies for Global Carbon Cycle History—Across Time, Space, and Composition*, GSA Annual Meeting, Phoenix, Arizona
- 2015 Technical Session Co-chair, *Bridging the Gap Between Empirical and Model-driven Views of Geologic History: New Tools and Approaches*, North-central Section Meeting, Madison, Wisconsin
- 2012 Co-leader, Annual field meeting, Subcommittee on Silurian Stratigraphy, Cincinnati, Ohio
- 2010 Technical Session Co-chair, *Time-Specific Facies: The Color and Texture of Biotic Events*, International Palaeontological Congress, London, England
- 2008 Technical Session Co-chair, *New Approaches and Initiatives in Paleozoic High-resolution Stratigraphy: A Session Commemorating 15 Years of Views from the Craton*, GSA North-central Section Meeting, Evanston, Indiana
- 2005 Co-leader, International Geoscience Program, Project 503: *Ordovician Palaeogeography and Palaeoclimate*: Field meeting, Cincinnati, Ohio

PROFESSIONAL FIELD TRIPS LED

- 2018 Geological Society of America, Annual Meeting, (Indianapolis, Indiana): The Rise of Silurian Pinnacle Reefs: Islands of Diversity in Seas of Despair. (co-leader: Alyssa Bancroft)
- 2018 Geological Society of America, Annual Meeting (Indianapolis, Indiana): Paleozoic Geology of the Louisville, Kentucky Region. (co-leaders: Carlton Brett, Kyle Hartshorn, Chris Waid)
- 2015 North-central Geological Society of America Meeting (Madison, Wisconsin): Cambrian sequence stratigraphy of the Wisconsin Arch (co-leader: Jay Zambito)
- 2013 "Utica-Point Pleasant" Regional Stratigraphy Workshop, HESS and CONSOL energy companies (co-leaders: Carl Brett and Peter Holterhoff)
- 2012 Silurian Subcommittee on Stratigraphy regional field trips: Appalachian Basin to Michigan Basin (Kentucky to Illinois) (co-leaders: Carl Brett and Don Mikulic)
- 2011 Geological Society of America, Annual Meeting, Minneapolis: Distal signatures of Late Ordovician oceanic anoxia—new data from a classic ramp transect (co-leaders: Norlene Emerson, Brian Witzke, Bryan Sell, Poul Emsbo)
- 2010 Great Lakes SEPM/Tristate Field Trip: Silurian Geology of the Niagara Escarpment in Wisconsin (co-leaders: Don Mikulic and Joanne Kluessendorf)
- 2009 North American Paleontological Convention: Sequence stratigraphy of the Cincinnati Arch (co-leaders: Carl Brett, Susie McLaughlin)
- 2008 North-central Geological Society of America, Annual Meeting: Silurian sequence stratigraphy and oceanographic events recorded across the Appalachian Basin and Cincinnati Arch (co-leaders: Brad Cramer, Carl Brett, and Mark Kleffner)
- 2005 IGCP 503: Ordovician palaeogeography and palaeoclimate, North American field conference. Upper Ordovician sequence stratigraphy and paleoecology of the Cincinnati Arch (co-leaders: Carl Brett and Steve Holland)
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PUBLICATIONS (1752 CITATIONS AS OF 12/2022)

Edited

Special Issue: Time-Specific Facies: the color and texture of biotic events, 2012. Ferretti, A., Histon, K., **McLaughlin, P.I.**, Brett, C.E. (Eds.). *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 367-368, 272 p.

Archean to Anthropocene: Field Guides to the Geology of the Mid-Continent of North America, 2011. Miller, J.D., Hudak, G.J., Wittkop, C., **McLaughlin, P.I.** (Eds.), Geological Society of America, v. 24, 585 p.

Stratigraphic Renaissance in the Cincinnati Arch: Implications for Implication for Upper Ordovician Paleontology and Paleocology, 2008. **McLaughlin, P.I.**, Brett, C.E., Storres, G., Holland, S.M., (Eds.), Cincinnati Museum Center, 280 p.

Refereed Journal Articles

Stevens Goddard, A.L., Thurston, O.G., Malone, D.H., **McLaughlin, P.I.**, and Stewart, J., 2023. Cratonic basins as effective sediment barriers in continental-scale sediment routing systems of Paleozoic North America. *Scientific Reports*. <https://doi.org/10.1038/s41598-023-37863-x>

McLaughlin, P.I. and Stigall, A., 2022. Ordovician of the conterminous United States, *In* Servais, T., Harper, D.A.T., Lefebvre, B. and Percival, I.G. (eds) *A Global Synthesis of the Ordovician System: Part 2*. Geological Society, London, Special Publications, 533, <https://doi.org/10.144/SP533-2022-198>

McLaughlin, P.I., Normore, L., Sell, B.K. and Ramezani, J., 2022. Ordovician tephrochronology, geochronology, and global tephra distribution. *In* Servais, T., Harper, D.A.T., Lefebvre, B. and Percival, I.G. (eds) *A Global Synthesis of the Ordovician System: Part 2*. Geological Society, London, Special Publications, 533

Sinnesael, M., **McLaughlin, P.I.**, Desrochers, A., Mauviel, A., De Weirtdt, J., Claeys, P., Vandenbroucke, T.R.A., 2021. Precession-driven climate cycles and time scale prior to the Hirnantian glacial maximum. *Geology* 49, 1295-1300.

Rine, M.J., **McLaughlin, P.I.**, Bancroft, A.M., Harrison, W.B. III, Kuglitsch, J., Caruthers, A.H., Kaczmarek, S.E., Emsbo, P., 2020. Linked Silurian carbon cycle perturbations, bursts of pinnacle reef growth, extreme sea-level oscillations, and evaporite deposition (Michigan Basin, USA). *Palaeogeography, Palaeoclimatology, Palaeoecology* 554, 109806.

Mastalerz, M., Drobniak, A., Eble, C., Ames, P., and **McLaughlin P.**, 2020. Rare earth elements and yttrium in Pennsylvanian coals and shales in the eastern part of the Illinois Basin. *International Journal of Coal Geology* 231, 103620.

Teng, J., Mastalerz, M., Lui, B., Gognat, T., Hauser, E., **McLaughlin, P.**, 2020. Variations of organic matter transformation in response to hydrothermal fluids: Example from the Indiana part of the Illinois Basin. *International Journal of Coal Geology* 219, 103410.

McLaughlin, P.I., Emsbo, P., Bancroft, A., Brett, C.E., Desrochers, A., Vandenbroucke, T.R.A., 2019. The rise of pinnacle reefs: A step change in marine evolution triggered by perturbation of the global carbon cycle. *Earth and Planetary Science Letters* 515, 13-25.

Mastalerz, M., Drobniak, A., Ames, P., and **McLaughlin P.**, 2019. Application of pXRF elemental analysis and organic petrography in correlation of Pennsylvanian strata: An example from the Indiana part of the Illinois Basin, USA. *International Journal of Coal Geology* 216, 12 p.

Emsbo, P., Premo, W.R., **McLaughlin, P. I.**, Neymark, L.A., Vandenbroucke, T.R.A., Day, J.E., du Bray, E.A., Manning, A.H., Bancroft, A.M., 2018. Impact of sedimentary-exhalative hydrothermal systems on marine chemistry and mass extinctions: Applications for ore genesis research and mineral exploration. *In* A.M. Arribas and J.L. Maul (eds.), *Metals, Minerals and Society*, Society of Economic Geologists Special Publications Series 21, 75-87.

Brett, C.E., Zambito, J.J., **McLaughlin, P.I.**, Emsbo, P., 2018. Revised perspectives on Devonian biozonation and environmental volatility in the wake of recent time-scale revisions. *Palaeogeography, Palaeoclimatology, Palaeoecology*.

- Amberg, C.E.A., Vandenbroucke, T.R.A., Nielsen, A.T., Munnecke, A., **McLaughlin, P.I.**, 2017. Chitinozoan biostratigraphy and carbon isotope stratigraphy from the Upper Ordovician Skogerholmen Formation in the Oslo Region. A new perspective for the Hirnantian lower boundary in Baltica. *Review of Palaeobotany and Palynology* 246, 109-119.
- Malone, D.H., Craddock, J.P., **McLaughlin, P.I.**, Konstantinou, A., and McGillivray, K., 2017. Detrital zircon geochronology of the Bighorn Dolomite, Wyoming, USA: Evidence for Trans-Hudson dust deposition on the western Laurentian carbonate platform. *Journal of Geology* 125, 261-269. DOI:10.1086/690213.
- McLaughlin, P.I.**, Emsbo, P., Desrochers, A., Bancroft, A., Brett, C.E., Riva, J.F., Premo, W., Neymark, L., Achab, A., Asselin, E., Emmons, M., 2016. Refining 2 km of Ordovician chronostratigraphy beneath Anticosti Island utilizing integrated chemostratigraphy. *Canadian Journal of Earth Sciences* 53, 1-10.
- Sullivan, N., **McLaughlin, P.I.**, Brett, C.E., Cramer, B.D., Kleffner, M.A., Thomka, J.R., Emsbo, P., 2016. Sequence boundaries and chronostratigraphic gaps in the Llandovery of Ohio and Kentucky: the record of early Silurian paleoceanographic events in east-central North America. *Geosphere* 12, 1-20.
- Emsbo, P., **McLaughlin, P.I.**, du Bray, E., Anderson, E.D., Vandenbroucke, T.R.A., Zielinski, R.A., 2016. Chapter 5, Rare earth elements in sedimentary phosphorite deposits: A global assessment. *Reviews in Economic Geology* 18, 101-113.
- Sullivan, N.B., **McLaughlin, P.I.**, Emsbo, P.E., Barrick, J.E., Premo, W.R., 2016. Identification of the late Homeric Mulde Excursion at the base of the Salina Group (Michigan Basin, USA). *Lethaia* 49, 591-603.
- Young, A., Brett, C.E., **McLaughlin, P.I.**, 2016. Upper Ordovician (Sandbian-Katian) sub-surface stratigraphy of the Cincinnati Region (Ohio, USA): transition into the Sebrée Trough. *Stratigraphy* 12, 297-305.
- Schröer, L., Vandenbroucke, T.R.A., Hints, O., Steeman, T., Verniers, J., Brett, C., Cramer, B., **McLaughlin, P.I.**, 2016. A Late Ordovician age for the Whirlpool Formation and Power Glen Shale, New York. *Canadian Journal of Earth Sciences* 53, 739-747.
- Emsbo, P., **McLaughlin, P.I.**, Breit, G.N., du Bray, E.A., Koenig, A.E., 2015. Rare earth elements in sedimentary phosphate deposits: solution to the global REE crisis? *Gondwana Research* 27, 776-785.
- McLaughlin, P.I.**, Mikulic, D., Kluessendorf, J., 2013. Age of Silurian rocks in Sheboygan County Wisconsin from stable carbon isotope analysis. *Geoscience Wisconsin* 21, 15-38.
- McLaughlin, P.I.**, Emsbo, P., Brett, C.E., 2012. Beyond black shales: The sedimentary and stable isotope records of oceanic anoxic events in a dominantly oxic basin (Silurian; Appalachian Basin, USA). *Palaeogeography, Palaeoclimatology, Palaeoecology* 367-368, 153-177.
- Brett, C.E., **McLaughlin, P.I.**, Histon, K., Schindler, E., Ferreti, A., 2012. Time-specific aspects of facies: State of the art, examples, and possible causes. *Palaeogeography, Palaeoclimatology, Palaeoecology* 367-368, 6-18.
- Brett, C.E., Cramer, B.D., **McLaughlin, P.I.**, Kleffner, M.A., Showers, W.J., Thomka, J.R., 2012. Revised Telychian-Sheinwoodian (Silurian) stratigraphy of the Laurentian mid-continent: building uniform nomenclature along the Cincinnati Arch. *Bulletin of Geosciences* 87, 733-753.
- Cramer, B.D., Brett, C.E., Melchin, M.J., Mannik, P., Kleffner, M.A., **McLaughlin, P.I.**, Loydell, D.K., Munnecke, A., Jeppsson, L., Corradini, C., Brunton, F.R., and Saltzman, M.R., 2011. Revised correlation of Silurian Provincial Series of North America with global and regional chronostratigraphic units and $\delta^{13}\text{C}$ chemostratigraphy. *Lethaia* 44, 185-202.
- Cramer, B.D., Kleffner, M.A., Brett, C.E., **McLaughlin, P.I.**, Jeppsson, L., Munnecke, A., Samtleben, C., 2010. Paleobiogeography, high-resolution stratigraphy, and the future of Paleozoic biostratigraphy: Fine-scale diachroneity of the Wenlock (Silurian) conodont *Kockelella walliseri*. *Palaeogeography, Palaeoclimatology, Palaeoecology* 294, 232-241.
- McLaughlin, P.I.**, Brett, C.E., 2007. Signatures of sea level rise on the carbonate margin of a Late Ordovician foreland basin; a case study from the Cincinnati Arch, USA. *Palaios* 22, 245-267.
- Brett, C.E., **McLaughlin, P.I.**, Baird, G.C., 2007. E.O.-Ulrichian to Neo-Ulrichian views: the renaissance of "layer-cake stratigraphy". *Stratigraphy* 4, 201-215.
- Brett, C.E., Hendy, A.J.W., Bartholomew, A.J., Bonelli, J.R. Jr. and **McLaughlin, P.I.**, 2007. Response of shallow marine biotas to sea-level fluctuations: a review of faunal replacement and the process of habitat tracking. *Palaios* 22, 228-244.
- McLaughlin, P.I.**, Brett, C.E., 2006. Widespread soft-sediment deformation horizons in Lower Silurian strata of the Appalachian basin: distal signature of orogeny. *GFF* 128, 169-172.
- McLaughlin, P.I.**, Brett, C.E., Taha McLaughlin, S.L., Cornell, S.R., 2004. High-resolution sequence stratigraphy of a mixed carbonate-siliciclastic, cratonic ramp (Upper Ordovician; Kentucky-Ohio, USA): insights into the relative influence of eustasy and tectonics through analysis of facies gradients. *Palaeogeography, Palaeoclimatology, Palaeoecology* 210, 267-294.

- McLaughlin, P.I.**, Brett, C.E., 2004. Eustatic and tectonic control on the distribution of marine seismites: examples from the Upper Ordovician of Kentucky, USA. *Sedimentary Geology* 168, 165-192.
- Brett, C.E., **McLaughlin, P.I.**, Baird, G.C., Cornell, S.R., 2004. Comparative sequence stratigraphy of two classic Upper Ordovician successions, Trenton shelf (New York-Ontario) and Lexington Platform (Kentucky-Ohio): implications for eustasy and local tectonism in eastern Laurentia. *Palaeogeography, Palaeoclimatology, Palaeoecology* 210, 295-329.
- Brett, C.E., Turner, A.H., **McLaughlin, P.I.**, Over, J., Storrs, G., 2003. Middle-Upper Devonian (Givetian-Famennian) bone/conodont beds from central Kentucky: reworking and event condensation in the distal Acadian foreland basin. *Courier-Forschungsinstitut Senckenberg* 242, 125-139.

Refereed Book Chapters

- McLaughlin, P.I.**, Brett, C.E., Wilson, M.A., 2008. Hierarchy of sedimentary discontinuity surfaces and condensed beds: implications for sequence stratigraphy on the craton. *In* C. Holmden, B. Pratt (eds.), *Dynamics of Epeiric Seas: Sedimentological, Paleontological and Geochemical Perspectives*, Geological Association of Canada Special Volume 48, 175-200.
- Brett, C.E., Algeo, T.A., **McLaughlin, P.I.**, 2008. Use of event beds and sedimentary cycles in high-resolution stratigraphic correlation of lithologically repetitive successions. *In* P.J. Harries (ed.), *High-Resolution Approaches in Stratigraphic Paleontology*, *Topics in Geobiology* 21, 315-350.

Refereed Guidebook Articles

- McLaughlin, P.I.**, Bancroft, A., Brett, C.E., Emsbo, P., 2018. The rise of pinnacle reefs: Islands of diversity in seas of despair, *Geological Society of America Field Guide* 51, 23-33.
- Brett, C.E., Hartshorn, K.R., Waid, C.B.T., **McLaughlin, P.I.**, Bulinski, K.V., Thomka, J.R., Paton, T.R., Freeman, R.L., Dattilo, B.F., 2018. Lower to middle Paleozoic sequence stratigraphy and paleontology in the greater Louisville, Kentucky area. *Geological Society of America Field Guide* 51, 35-93.
- McLaughlin, P.I.**, Emerson, N., Witzke, B.J., Sell, B., Emsbo, P., 2011. Distal signatures of Late Ordovician oceanic anoxia—new data from a classic ramp transect. *In* J.D. Miller, J.G. Hudak, C. Wittkop, P.I. McLaughlin (eds.), *Archean to Anthropocene: Field Guides to the Geology of the Mid-Continent of North America*: Geological Society of America Field Guide 24, 259-284.
- McLaughlin, P.I.**, Cramer, B., Brett, C.E., Kleffner, M.A., 2008. Silurian stratigraphy of the northern Cincinnati Arch: recalibrating the layer-cake. *In* A. Maria (ed.), *Geological Society of America Field Guides* 12, 119-180.

Other Guidebook Articles

- Sullivan, N. B., Brett, C. E., **McLaughlin, P. I.**, 2012. Ironstones, condensed beds, and sequence stratigraphy of the Clinton Group (Lower Silurian) in its type area, central New York. *In* Rayne, T. W., (ed.), *Field Trip Guidebook for the 84th Annual Meeting of the New York State Geological Association*, pp. B5-1—B5-40.
- Brett, C.E., **McLaughlin, P.I.**, Schramm, T.J., Sullivan, N.B., Thomka, J.R., 2012. Middle Paleozoic Sequence Stratigraphy and Paleontology of the Cincinnati Arch: Part 1, Central Kentucky and Southern Ohio. International Geosciences Programme (IGCP), Project 591: Paleozoic Revolution, Annual Field Meeting. Cincinnati, Ohio. 143 p. http://igcp591.org/downloads/Cincinnati2012_FieldGuide1.pdf
- Brett, C.E., Cramer, B.D., Dattilo, B.F., **McLaughlin, P.I.**, Schramm, T.J., Thomka, J.R., 2012. Middle Paleozoic Sequence Stratigraphy and Paleontology of the Cincinnati Arch: Part 2, Northern Kentucky and SE Indiana. International Geosciences Programme (IGCP), Project 591: Paleozoic Revolution, Annual Field Meeting. Cincinnati, Ohio. 104 p. http://igcp591.org/downloads/Cincinnati2012_FieldGuide2.pdf
- Brett, C.E., **McLaughlin, P.I.**, Jacobi, R., 2006. Silurian sequence stratigraphy, events, and paleoenvironments along the cratonic margin of the Appalachian Foreland. *In* R. Jacobi (ed.), *Guidebook-New York State Geological Association 78th annual meeting*, v. 78, 290-353.
- Brett, C.E., Holland, S.M., **McLaughlin, P.I.**, Miller, A.I., 2005. Preface: “Stratigraphic Renaissance” in the Upper Ordovician of the Cincinnati Arch: Implications for paleontology and paleoecology. *In* McLaughlin, P.I., Brett, C.E., Taha McLaughlin, S.L. and Bazeley, J. (eds.), *Sequence, Cycle, and Event Stratigraphy of the Upper*

- Ordovician, Cincinnati Arch Region: Implications for Paleoenvironments and Paleoecology. A Guidebook for IGCP 503 Field Conference. Cincinnati Museum Center Special Publication 2, p.iii-viii.
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ICS Subcommittee on Silurian Stratigraphy (corresponding member)

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