

New York Geological Association
89th Annual Meeting

Field Trip Guidebook

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Alfred University

Edited by
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PREFACE AND ACKNOWLEDGEMENTS

The Division of Geology and Environmental Studies, College of Liberal Arts and Sciences at Alfred University is pleased to host the 89th Annual meeting of the New York State Geological Association. Alfred has not hosted an NYSGA meeting since 1957 (it was actually hosted Wellsville, a village nearby), so it was definitely time to bring you all to the Southern Tier of New York state! We hope that you will find this meeting enjoyable and educational and that you will want to return to our beautiful part of the state again.

We wish to express our sincere appreciation to all of the field trip and workshop leaders. We have a wonderful variety of trips thanks to the willingness of the leaders, and we appreciate their hard work and dedication in putting together interesting trips and detailed descriptions/road logs.

We would also like to acknowledge the invaluable assistance of Nicole Munkwitz and Shannon Yocum here at Alfred for their work on organizing the logistics of this conference. Without their help, this conference would not be taking place in Alfred.

Alfred University has a long history of interest in the geology of New York state. One of our first university presidents, Jonathan Allen, and his wife Abigail, were friends of James Hall and avid amateur geologists. The photo on the cover of this guidebook is a building on our campus known as the Steinheim (“rock house”), that President Allen commissioned to be built and was rumored to have a rock from every county in the state on its face (we have proved that rumor to be false, alas, but it is still a fun story and there *is* a nice variety of rock types on the building – we encourage you to go check it out!). The building now houses our Career Development Center, but President Allen lived there during part of his tenure at Alfred.

The Southern Tier also has a long history of oil and gas development with the first commercially successful oil well having been drilled just over the border in Pennsylvania in 1859. Those of you who go on Trip A4 will have the opportunity to learn about the petroleum industry in this part of NYS, visit the Pioneer Oil Museum, a repurposed refinery site and an active lease. No mention of the oil and gas industry in the Southern Tier can be made, however, without acknowledging Arthur Van Tyne, who ran a satellite office of the NYS Geological Survey here on the Alfred University campus for many years, and who contributed enormously to our understanding of the occurrence of fossil fuels in this region.

The bedrock in our region, of course, is comprised of Paleozoic sedimentary rocks, rich in both petroleum and fossils. Professor Daniel Sass, who was a one-man geology department here at Alfred University for many years, studied the Devonian fossil assemblages and introduced hundreds of Alfred geology students to the local geology. But Dan not only taught geology and other liberal arts students – for some time, at least one geology class was also required of ceramic engineering students at Alfred, so countless engineers also benefitted from Dan’s enthusiasm and expertise and learned about the raw materials used in their industry.

Atop the Devonian sedimentary strata are glacial deposits, many of which are extracted by local industries. Those of you who choose to go on Trip A6 will visit quarries operated by New Enterprise Stone and Lime Co. and Almond Aggregates, LLC, and we thank those companies for allowing us to visit their operations.

Last, but certainly not least, sincere thanks go to Otto Muller for organizing and editing the guidebook this year. Otto has been laboring all summer getting the guidebook ready. Otto is also our after dinner speaker on Saturday evening. He has been working for several years on the

herculean task of putting past NYSGA guidebooks into a searchable digital format and will discuss and demonstrate how you can use his field trip database after the banquet.

We are confident that we have one or more trips to satisfy most geologists' interests at our conference this year. Thank you for coming and we hope you enjoy the weekend.

Michele Hluchy
Conference Organizer

Cover photograph: Benjamin D. Esham / Wikimedia Commons

WEB ACCESS

In order to produce a Guidebook at reasonable expense, it is printed in black and white. Many of the figures and maps, however, are available online at full size and in color. To access them use a URL similar to:

<http://www.nysga-online.net/nysga-2017-guidebook-maps-and-images/A5/Fig12>

where A5 refers to trip A5 as shown in the Program and Table of Contents, and Fig12 refers to figure 12 in that chapter. Note there are no spaces or underscores in that URL.

The organizers of the 2017 NYSGA conference wish to dedicate this guidebook to the memory of Dr. Bruce Selleck (1949-2017).

The New York State geological community lost an invaluable member in July 2017 when Dr. Bruce Selleck passed away unexpectedly. Bruce spent his entire career studying aspects of New York state geology and contributed to our understanding of the geologic history of the state not only with his own research, but through the hundreds of students he taught in his 43-year career as a professor at Colgate University, many of whom went on to become geologists, environmental scientists, teachers, and other practicing professionals in New York state and elsewhere.

Bruce grew up on a farm in the St. Lawrence lowlands, spent his undergraduate years on the northern edge of the Allegheny plateau at Colgate, went to graduate school in the Genesee Valley, receiving his Ph.D. from the University of Rochester, and then returned to the northern edge of the Allegheny plateau to teach at his alma mater. He initially studied the Paleozoic sedimentary rocks of upstate New York, especially the Potsdam Sandstone and associated formations, but his later research also included work on the tectonic development of the Adirondacks and oil- and gas-bearing strata such as the Marcellus and Utica Shales. Bruce also did research in Alaska and Australia and led student field trips to Wales, Australia, Florida and the southwestern U.S. He published numerous papers in journals such as the *Journal of Sedimentary Research*, *GSA Bulletin*, *the American Journal of Science*, and *Geology* by himself, with colleagues, and with his students. Recently, Bruce co-edited a special issue of the *Adirondack Journal of Environmental Science* on the geology and natural environment of the Adirondack region. Bruce also advised dozens and dozens of Colgate undergraduates engaged in research over the years, many of them working on projects in New York state. In his 43 years as part of the Colgate faculty, Bruce was recognized with teaching awards and titled professorships; and he served on several committees and in several administrative positions, including dean of the faculty and provost.



Photo by Pam Darwin



Photo by Ron Parker

Bruce loved being in the field. He was a great friend to the NYSGA, leading or co-leading 12 trips at NYSGA field conferences between 1977 and 2015 and organizing several NYSGA conferences either from Colgate or out of Lake George. In fact, at the time of his passing, Bruce was already planning to help organize a joint NYSGA/NEIGC conference during the fall of 2018. There are others who have also led many NYSGA field trips over the years, for which all of us are grateful, but no one has led trips on such a wide range of topics. Bruce's NYSGA field trips spanned more than a billion years of time, from Mesoproterozoic magmatism of the Adirondacks to surficial geology and soils of Madison county, with many of his trips covering Paleozoic sediments in New York, a subject that was his

passion and in which he was a recognized expert. Geographically, these trips covered much of central and northern New York.

Bruce was 67 when he passed away suddenly and unexpectedly and he had no plans to retire or slow down. His love of geology, field work, and teaching was both legendary and contagious. The two organizers of this year's NYSGA conference had the great honor of knowing Bruce as a professor and mentor (Michele) and as a fellow graduate student at the University of Rochester and later colleague at Colgate (Otto) and, while we feel and recognize the great loss to NYS geology, we mostly mourn the loss of a great friend.

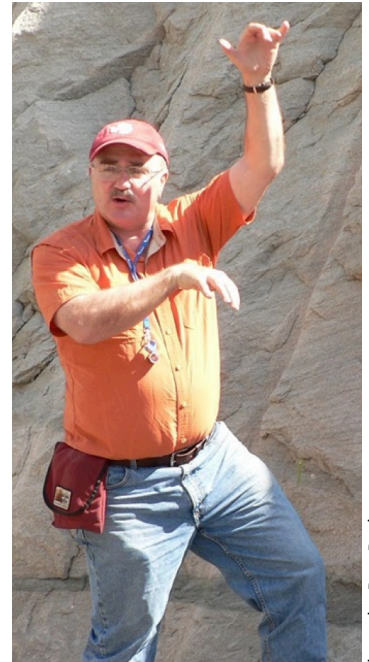


Photo by Ron Parker

PROGRAM

Friday (for those from the Buffalo-Fredonia area, especially)

C1 (and B4): Penn Dixie Fossil Park & Nature Reserve -- A Classic and Unique Paleontological and Outdoor Education Center -- Phil Stokes, Holly Schreiber **** Meet at Penn Dixie site, (42.77811, -78.83104) at 10AM ****

Friday Evening Science Center 247, Roon Lecture Hall, 7:00 PM

W1: Workshop: Updates on the glacial, aquifer, and geophysical data in the Genesee Valley, Dansville to Avon, NY -- Richard Young and Lewis Owen; Sam Gowan and John Nadeau; John Williams and William Kappel; Scott Giorgis, Michael Reed, and Eric Horsman

Saturday Morning: Science Center Parking Lot at 8:30 AM unless otherwise noted

A1 (and B1): Depositional Environments Across a Central Trough of the Northern Appalachian Basin, Deep Run Shale Member (Moscow Formation) of the Finger Lakes -- Stephen Mayer, Gordon Baird, Carlton Brett

A2: Upper Devonian Kellwasser extinction events in New York and Pennsylvania: offshore to onshore transect across the Frasnian-Famennian Boundary strata on the eastern margin of the Appalachian Basin **DAY 1**-- Andrew M. Bush, J. Andrew Beard, Gordon Baird, D. Jeffrey Over, Katherine Tuskes, Sarah K. Brisson, Jaleigh Q. Pier **** Meet at Beaver Meadow Creek, Java Village, NY (42.6722, -78.4358) at 10 AM ****

A3 (and B3): Salamanca ("Little Rock City") Conglomerate: Tide-Dominated & Wave-Influenced Deltaic/Coastal Deposits: Upper Devonian (Late Famennian) Cattaraugus Formation -- Jim Craft **** Meet at the DEC sign/State Forest boundary Rock City State Forest – Little Rock City Rd. at the DEC sign - (42.225830, -78.710587) at 10 AM ****

A4: The Bolivar Pioneer Oil Museum, its Environs and the History of Petroleum Production in the Allegany County Region -- Kelly Lounsberry **** Meet at Museum (42.06519, -78.1680) at 9:00 AM ****

A5: Kimberlites in the Cayuga Lake Region of Central New York: The Six Mile Creek, Williams Brook, and Taughannock Creek Dikes -- David Bailey, Marian Lupulescu, Jeffrey R. Chiarenzelli **** Meet at Wegman's Parking Lot, Ithaca, (42.43394, -76.51109) at 9 AM ****

A6: Exploring the Surficial Geology and Hydrology Near Alfred, NY -- David Barclay, Otto Muller, Dick Young

Saturday evening Powell Campus Center Knight Club, 5:30 PM

Banquet

After Banquet Talk: Otto Muller discussing his database of NYSGA field trips from 1956 to 1999, with a demo of how to access all of that info using Excel.

Sunday

B1 (and A1): Depositional Environments Across a Central Trough of the Northern Appalachian Basin, Deep Run Shale Member (Moscow Formation) of the Finger Lakes -- Stephen Mayer, Gordon Baird, Carlton Brett

B2: Upper Devonian Kellwasser extinction events in New York and Pennsylvania: offshore to onshore transect across the Frasnian-Famennian Boundary strata on the eastern margin of the Appalachian Basin **DAY 2**-- Andrew M. Bush, J. Andrew Beard, Gordon Baird, D. Jeffrey Over, Katherine Tuskes, Sarah K. Brisson, Jaleigh Q. Pier ****Meet at Cowanesque Lake Outcrop, Route 49, west of Lawrenceville, PA, (41.9816, - 77.1492) at 10 AM ****

A3 (and B3): Salamanca ("Little Rock City") Conglomerate: Tide-Dominated & Wave-Influenced Deltaic/Coastal Deposits: Upper Devonian (Late Famennian) Cattaraugus Formation -- Jim Craft **** Meet at the DEC sign/State Forest boundary Rock City State Forest – Little Rock City Rd. at the DEC sign - (42.225830, -78.710587) at 10 AM ****

B4 (and C1): Penn Dixie Fossil Park & Nature Reserve - A Classic and Unique Paleontological and Outdoor Education Center -- Phil Stokes, Holly Schreiber **** Meet at Penn Dixie site, (42.77811, -78.83104) at 10 AM****

B5: Glacial Features and the "Great Divide" between Watkins Glen and Ithaca -- Carol Griggs

W2: Key Tools and Strategies for Making and Using Virtual Fieldwork Experiences -- Don Duggan-Haas and Robert M. Ross

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