

Michigan Geological Survey Report 14 from the K-12 Outreach Director, Peter Voice [Nov. 14, 2014]

New Items:

1. Sept. 26th – present Report 13 to the Director of the Michigan Geological Survey
2. Sept. 28th – exchanged emails with Milt Gere to set up a time to discuss his request for an exhibit at the Central Michigan Lapidary and Jewelry show.
3. Sept. 29th – Linda Harrison exchanged several emails with John Griffin (Michigan Section – American Petroleum Institute) about his society’s gift to CoreKids. She sent him the requested invoice.
4. Sept. 29th – exchanged emails and set up a meeting with Jenica Moore (MA student, WMU) about the possibility of working with CoreKids. Meeting set for Oct. 3.
5. Sept. 30th- exchanged emails with Tony Boxleiter about the CoreKids schedule.
6. Oct. 1st – exchanged emails with John Savage (Senior Lecturer, University of the West of England) and Linda Harrison about a request to use pictures from the MGRRE website in his lectures. Linda and I gave him permission.
7. Oct. 2nd – exchanged emails with Steve Barone with regard to a potential school visit.
8. Oct. 2nd – exchanged emails with DeEtta Crane (Greater Heights Academy) about visiting her school – working on scheduling the event.
9. Oct. 2nd – exchanged emails with Lori Lachowitz (Berkshire Middle School) about scheduling a school visit with Mark Phillips and Scott Bruyneel. They requested Feb. 13th. I suggested both the 12th and the 13th based on the class size from the previous year.
10. Oct. 2nd – Kathy Wright forwarded me the contact information for Emily Frye (4th grade teacher). I left a message on her phone.
11. Oct. 2nd – Kathy Wright forwarded me a message from Mike Stepanski. Mike has found “fossil eggs” and was interested in sending them to us. I contacted him with some information on concretions and fossil eggs.
 - a. Mr. Stepanski emailed me photographs – I believe that they are concretions. I forwarded the pictures to Bill Harrison for him to comment on.
 - b. Bill suggested that it might be a stromatoporoid or large oncoid.
12. Oct. 2nd – worked on the survey results for the MGRRE Online Education Portal Survey. Results attached below. Results were forwarded to Heather Petcovic, Brian Horvitz, Bill Cobern and Bill Harrison for comment. Met briefly with Heather Petcovic and Brian Horvitz to discuss the results.

13. Oct. 2nd – Tom Howe contacted me – he has been in discussion with the Michigan Section of the American Institute of Professional Geologists. They are considering donating funding to the CoreKids program.
14. Oct. 2nd – Mike Newman (Michigan Aggregate Association) exchanged emails with me – requesting a meeting on Oct. 3rd.
15. Oct. 2nd – Ardis Herrold (Grosse Pointe North High School) requested that CoreKids provide a program on fossils at their annual Fossil Festival. I have requested more logistics details (timing of event) but tentatively plan on helping her with the event.
16. Oct. 2nd – worked on NSF DRK12 proposal with Bill Harrison.
17. Oct. 3rd – Meeting with Mike Newman was canceled and will be rescheduled.
18. Oct. 3rd – Exchanged multiple emails with CoreKids staff to organize staffing for upcoming events.
19. Oct. 3rd – exchanged emails with Kim Clancy with regard to the Gull Lake Sparks Series event
20. Oct. 3rd – Met with Jenica Moore to discuss hiring her for the CoreKids program.
21. Oct. 3rd – Contacted Milt Gere (formerly MI DEQ) to discuss logistics for the Central Michigan Lapidary and Jewelry Show.
22. Oct. 3rd – discussed Oct. 2nd AIPG Meeting with Tom Howe and John Yellich. I will prepare a summary document to send to their section leadership.
23. Oct. 3rd – exchanged emails with Ardis Herrold (Grosse Pointe North Highschool) with regard to her Nov. 21st event.
24. Oct. 3rd – exchanged emails with Craig Savage and Dawn Prell (AIPG) – providing them information on the CoreKids program.
25. Oct. 3rd – sent follow-up email to Milt Gere on his request for a display for the Central Michigan Lapidary and Jewelry Show.
26. Oct. 6th – exchanged emails with Cathy Gonzales (Springfield Middle School) about possibility of CoreKids event at her school.
27. Oct. 6th – exchanged emails with Maureen Kaczanowski (Southwood Elementary) about the possibility of Corekids events at her school (a STEM-night in February as well as a classroom visit on Michigan Fossils).
28. Oct. 5th and 6th – exchanged emails with Tony, Ann and Cameron about logistics of Michigan Mineralogical Society Event.
29. Oct. 12th – exchanged emails with Cameron, Ann and Tony about the MMS events – results and logistics
30. Oct. 12th and 13th – exchanged emails with DeEtta Crane (Greater Heights Academy) about scheduling an event for her classes on Nov. 18th. Still working on scheduling the event.

31. Oct. 13th – Met with Bill Mitchell (DEQ and KGMS) – Bill borrowed a set of Core Pumps for an outreach event he was running at Star Elementary School. We also discussed the Nov. 4th KGMS event at MGRRE as well as the Central Michigan Jewelry and Lapidary Show. Bill will take a Geological Survey display to the event and bring it back.
32. Oct. 13th – emailed Milt Gere and Bill Mitchell to discuss the logistics of the Central Michigan Jewelry and Lapidary Show.
33. Oct. 13th – exchanged emails with Bill Mitchell, Linda Harrison and Jenny Trout about the Nov. 4 CoreKids event.
34. Oct. 13th – discussed with Jenny the Core samples that I wanted to take to the MSU National Fossil day on Oct. 18th.
35. Oct. 13th – exchanged emails with the CoreKids staff to discuss future events.
36. Oct. 13th – Sent email to Becky Eldridge (Gull Lake Sparks Series) to try to get confirmation on CoreKids attendance at the Nov. 7-8th event.
37. Oct. 14th – exchanged emails with Emily Burns (Berkley schools) about the corekids program – she had heard about us from a parent who had attended the Detroit Rocks and Minerals show.
38. Oct. 14th – exchanged emails with Julie Fick (MSU Museum) about logistics for the Oct. 18th National Fossil Day event.
39. Oct. 15th – exchanged emails with Joanne Kluessendorf on the Public Outreach session at North-Central GSA.
40. Oct. 16th – Heather Petcovic informed the NSF MGRRE Portal Group that the latest proposal had been submitted on time.
41. Oct. 17th – exchanged emails with Allison VanDriesche on scheduling CoreKids events at her school. Dec. 10 – Fossils Module; January 28th – Earthquakes Module. Western Middle School, Auburn Michigan (7:30 am to 2:15 pm).
42. Oct. 17th – Roger (Weiland?) Central Michigan Lapidary and Mineral Society – contacted me to ask if CoreKids could provide a booth on Oct. 24 at the Central Michigan 49th annual mineral show. I arranged staff to go to the event just for the peak hours of the school day (9:00 am to 1:00 pm).
 - a. I confirmed with him that we would be able to send staff for that time block on Oct. 21st.
43. Oct. 17th - Desiree LaDuke (Gull Lake Community Schools Foundation) contacted me about the Sparks Series event (Nov. 7-8th) – CoreKids was given a table at the event (sponsored by an exhibitor that cannot make the show). I am working on making sure I have enough staff for the event.
44. Oct. 17th – Peter Voice met with Bill Harrison, Jennifer Trout and Nick Panyard to discuss the possibility of creating a small core slab set from the Amherstburg

Formation to keep in the CoreKids area – this will make using the core more efficient as Jenny will not have to pull it down from the racks so often.

45. Oct. 18th – Cameron Manche and Peter Voice attended the National Fossil Day festivities co-hosted by MSU and MESTA and the museum at MSU. CoreKids had a booth with core pumps, portions of the Amherstburg Formation from the St. Charleton core as well as fossil specimens. I am waiting on metrics for the events – but several hundred people from the general public came through our booth over a 4 hour period.
 - a. I discussed the possibility of a joint Geological Survey-MESTA field trip with several former members of the MESTA executive board.
 - b. I discussed outreach possibilities with several teachers that were present at the event.
 - c. I discussed the possibility of future joint events with Julie Fisk (MSU Museum) – she suggested that I look at the MSU Science week in April as a possibility – with a display in the museum on the weekend.
46. Oct. 20th – exchanged emails with Ann Gilchrist, Tony Boxleiter and Cameron Manche about logistics for upcoming events.
47. Oct. 21st – met with Linda Harrison, Bill Harrison, Jenny Trout (MGRRE) and Lynn Turner (Fred Upton’s Office – Community Outreach Staffer) – assisted with tour of MGRRE facility and discussed public outreach with Lynn.
48. Oct. 21st – Joanne Kluessendorf contacted me, asking me to be a co-chair for the Public Outreach Session at North-Central GSA – I agreed to be co-chair.
49. Oct. 21st – prepared 1-page summaries of the CoreKids program and my Research duties at the Survey for the Advisory Council meeting on Oct. 24th.
50. Oct. 23rd – responded to email from Ann Najera asking for information about the corekids program.
51. Oct. 23rd – responded to email from Vicki Smith (Western Middle School, Midland, MI) about scheduling a corekids event for her school in late March, 2015.
52. Oct. 23rd – Scheduled School Visit, Gobles Elementary School.
53. Oct. 24th – Scheduled CoreKids event – Central Michigan 49th Annual Rock Show -- CoreKids was present for the school day activities of the show. 979 students from 14 schools in the greater Lansing area.
54. Oct. 27th – exchanged emails with Ann Najera about scheduling a class visit (North Hill Elementary, Rochester, MI).
55. Oct. 28th – continued exchange with Ann Najera (North Hill Elementary) – set a date for the CoreKids visit of March 18th.

56. Oct. 30th – Amanda Cook (Gobles Elementary) forwarded to me, the total count for the Oct. 23rd event. She could not remember the specific number – but told me that 220 students had the option of doing the CoreKids program.
57. Nov. 2nd – exchanged emails with Kyle Herm discussing logistics of joint CoreKids-WMU Foundation event on Nov. 7th.
58. Nov. 3rd – exchanged emails with Tracy Ruge about logistics for the Nov. 7-8 event. Also exchanged emails with CoreKids staff.
59. Nov. 3rd – I had Kathy Wright set up the paperwork to hire Naoma Leonard as an additional CoreKids staffmember.
60. Nov. 4th scheduled CoreKids event – Kalamazoo Geological and Mineral Society Meeting held at MGRRE instead of their regular venue (which was being used as a polling station). 35 adults and 8 children.
61. Nov. 7th – Scheduled event – Sparks Series, Gull Lake High School
62. Nov. 7th – Scheduled event Bronson Place with WMU Foundation (Kyle Herm and Janis Clark). 20 participants. I gave a general discussion on the corekids program and talked about Michigan’s Natural Resources. I had demonstration materials – including core pumps, core samples, a drill bit and fossils. Potash and hydraulic fracturing were both important topics to the participants.
63. Nov. 7th – exchanged emails with Brittany Chunn (U of M. Museum of Natural History) about the upcoming joint event on Nov. 19th.
64. Nov. 7th – exchanged phone calls and emails with Dawn Caldwell to discuss upcoming logistics of events.
65. Nov. 7th – returned phone call to Ms. LaTrina Young – left message for her questions about the corekids program and availability.
66. Nov. 7th – discussed with Mohamed Sultan the 2015 WMU STEM-ulating career day event and whether CoreKids should take part.
 - a. I went ahead and filled out the application form for the CoreKids program – they are limiting the number of departments involved to 10.
 - b. Exchanged emails with Carla Koretsky (WMU Lee Honors College) about the event
 - c. Received confirmation from Bradley Rangel (WMU Office of Diversity) for CoreKids participation in the event.
67. Nov. 7th – exchanged emails with DeEtta Crane (Greater Heights Academy, Flint) about scheduling an event at her school. I have suggested Dec. 5 as a possibility.
68. Nov. 7th – exchanged emails with Andrew Bentley (one of Heather Petcovic’s students) about employment in the Spring as a CoreKids staffmember.
69. Nov. 7th – sent Suzanne Lutwick and Kyle Herm (WMU Foundation) email about scheduling a meeting.

70. Nov. 8th – received updated contact numbers for the Michigan Mineralogical Society’s 2014 annual show. 789 students during the school day. 1050 adults, 574 children and 41 scouts (2454 total).
71. Nov. 10th – scheduled meeting with Suzanne Lutwick (WMU Foundation) to discuss corporate sponsorship plans. Meeting set for Thursday Nov. 13 at 3:00 pm. I will try to involve Linda Harrison as well.
72. Nov. 11th – exchanged emails with Linda Harrison about the WMU STEM-ulating Career day event and about the meeting with Suzanne Lutwick.
73. Nov. 11th – sent a package to a student from Fox Valley Christian Academy, Neenah, WI. He had requested samples of Michigan geology from National Parks in Michigan – I sent him a card with samples of Michigan Minerals (something prepared by the DEQ – that I had a couple dozen of) as well as a couple of Petoskey stones and a handout on the Petoskey stone (again a handout from prior Geol. Survey publications).
74. Nov. 11th – Exchanged emails with Vicki Smith (Western Middle School, Midland) to schedule CoreKids events for her school in mid-March.
75. Nov. 14th – met with Suzanne Lutwick and Linda Harrison – we brainstormed possible contacts for the corporate sponsorship drive and reviewed the formal brochure. Suzanne will put together a template cover letter. Linda and I will start working on a list of “Geo”-related businesses to contact.
76. Nov. 14th – exchanged emails with DeEtta Crane (Greater Heights Academy) about scheduling an event with her school.

Current Totals (July 1, 2014 to July 1, 2015)

Scheduled School Visits	250
Branch Co. Library System	234
U of M Museum of Paleontology	36
Kalamazoo Air Zoo	25
WMU Hydrogeology Field Camp MGRRE Tour	32
U of M Museum of Natural History	23
MESTA Conference	37
MBGS Sept. 11 meeting	50
Cranbrook Institute of Science Rouge River Water Festival	108
MMS Annual Show (School Day)	2454
MSU National Fossil Day [note waiting on metrics information – value approximate]	400

Central Michigan Annual Show	979
KGMS Meeting	43
WMU Foundation Event Bronson	20
Gull Lake Sparks Series Event	6000?
<u>Total</u>	<u>10,691</u>

Projected Totals of Upcoming Events

U of M Museum Geology Day	110
<u>Total Projected:</u>	110
<u>Total Projected + Actual</u>	<u>10,801</u>

a. Past Outreach Events, July 1st, 2014 and on

- i. July 3rd – University of Michigan Museum of Natural History Summer Camp
- ii. July 8th – Kalamazoo Air Zoo Eco Explorers Camp – on main campus [Michigan Geologic Resources and the Sandbox]
- iii. July 9th – Coldwater Branch, Branch Co. District Library [Natural Hazards: Volcanoes Module]
- iv. July 10th – Bronson Branch, Branch Co. District Library [Natural Hazards: Volcanoes Module]
- v. July 10th Sherwood Branch, Branch Co. District Library [Natural Hazards: Volcanoes Module]
- vi. July 11th – Union branch, Branch Co. District Library [Natural Hazards: Earthquakes Module]
- vii. July 16th – Kalamazoo Air Zoo Eco Explorers Camp – at Air Zoo
- viii. July 17th – Coldwater Branch, Branch Co. District Library [Natural Hazards: Earthquakes Module]
- ix. August 6th – Hydrogeology Field Camp MGRRE Tour
- x. Aug. 12th- University of Michigan Museum of Natural History Summer Camp
- xi. Aug. 14th –Aug. 16th – Michigan Earth Science Teachers Association Annual Meeting
- xii. Sept. 11th – M.B.G.S. Monthly meeting at MGRRE.
- xiii. Sept. 12th – The Cranbrook Institute of Science Rouge River Water Festival
- xiv. Oct. 10-12. Michigan Mineralogical Society Annual Show
- xv. Oct. 14: Classroom visit by K.G.M.S. President using CoreKids Core Pumps; Star Elementary School, Plainwell MI

- xvi. Oct. 18: MSU/MESTA joint National Fossil Day Event
- xvii. Oct. 23. Gobles Elementary School Science/Job Fair
- xviii. Oct. 24th – school day visit, Central Michigan 49th annual Rock Show
- xix. Nov. 4. K.G.M.S. Club Meeting at MGRRE
- xx. Nov. 7th – Friendship Village, Bronson
- xxi. Nov. 7-8. Gull Lake Community Schools Foundation – Sparks Series, Science and Engineering Fair.

b. Upcoming Events

- i. Nov. 19: U-M, Museum of Natural History Geology Day
- ii. Nov. 21st – Grosse Pointe High School Fossil Day
- iii. Dec. 10th – Western Middle School (Fossil Module)
- iv. Jan. 17 – WMU STEM-ulating career day
- v. Jan. 28th – Western Middle School (Earthquake Module)
- vi. Feb. 12-13th – Berkshire Middle School
- vii. Feb. 12th – STEM Night, Southwood Elementary School
- viii. March 18th - U-M, Museum of Natural History Geology Day
- ix. March 18th – North Hill Elementary, Rochester, MI (MI Fossils Module)
- x.

Item	Mean Response Value
<i>Do you think that there is a need for: (1=high need; 5=no need)</i>	
1. Accessible online datasets with an emphasis on Michigan Geology?	1.36
2. Inquiry-based, online lessons with an emphasis on Michigan Geology?	1.21
<i>How frequently do you currently use: (1 = daily; 5 = never)</i>	
3. Classroom activities or lessons that you obtain from online sources to teach earth science topics?	2.36
4. Online datasets in teaching earth science?	3.07
5. Would you want to use online datasets in teaching NGSS-aligned earth science?	2.30
Which best describes your comfort level in using online datasets to teach earth science? (1 = very uncomfortable; 5 = very comfortable)	3.41
The following lists ideas and principles that could be incorporated into the MGRRE Online Education Portal. Please rate each principle as to its usefulness to you and your curriculum. (1 = not useful; 5 = very useful)	
Sense of Scale	4.14
Units of Measurement	4.29
2-D and 3-D visualizations	4.40
Cartographic Principles and a GIS-style interface in the portal	3.74
Basic Rock and Fossil Identification	4.40

Geologic Time					4.38
Michigan Geology					4.69
Michigan's Natural Resources					4.67
One of the unique aspects of MGRRE's datasets is that they focus on subsurface geology, allowing students to see what is "under their feet" rather than what is immediate landscape. Please rate each dataset as to its usefulness to you and your curriculum. (1 = Not useful at all; 5 = Very useful)					
Photographs of Cores and rock specimens					4.14
Geographic location data for individual Wells					4.17
Permeability and Porosity data					4.17
Drillers reports describing rock formations at various depths					4.24
Fossil contents of rocks					4.44
Once the portal is developed, what resources and professional development would you need in order to use it? Please rate how useful you would find each of the following development opportunities or resources. (1 = Not useful at all; 5 = Very useful)					
Half to full day workshop at state or regional Professional Teachers Association Meetings					4.27
In-person continuing education course at MGRRE (Kalamazoo)					3.54
Online Continuing Education course (offered through Western Michigan University)					3.57
Downloadable workbooks with pre-made lesson plans					4.71
Web-based support including an interactive chat environment					4.17
Grade in which you most often teach earth science (total counts per grade level range)					
Pre-K to 2	3-5	6-8	9-12	College	
0	1	19	17	5	

Table 1: Responses for survey conducted late September – early October, 2014. Survey respondents were directed to the survey via emails to the list-serves of the Michigan Earth Science Teachers Association and Michigan Science Teachers Association (n = 42 responses).