

2012 MMEW Survey - General

GENERAL SURVEY: Demographics

D1. Why did you choose to attend this workshop?

Learn about Geoscience	42	32%
Gain CE credits	17	13%
Gain College Credits	12	9%
Learn about mining ind.	41	31%
See diff. part of state	21	16%
Total	133	

Other: TIMES
Tour the Mines
Times Participant
Get activities to use in class
Be better at my job
Have fun

D2. Which MMEW meetings have you attended?

2012 Winona	21	36%	2003 Hibbing	6	10%
2011 Eveleth	21	36%	2002 St Paul	3	5%
2010 St. Paul	12	21%	2001 Virginia	4	7%
2008 Ely	9	16%	2000 St. Cloud	3	5%
2007 Bemidji	9	16%	1999 Duluth	3	5%
2006 Duluth	5	9%	1998 Mankato	1	2%
2005 Mankato	6	10%	1997 Chisholm	2	3%
2004 Winona	7	12%			

Number of MMEW workshops previously attended

0	26	45%	5	3	5%	10	0%
1	12	21%	6	1	2%	11	0%
2	5	9%	7	1	2%	12	1
3	5	9%	8	1	2%	13	0%
4	1	2%	9	1	2%	14	1
						Total	58

D3. What grade level do you typically teach?

<u>K-4</u>	<u>5 thru 8</u>	<u>9 thru 12</u>	<u>College</u>	<u>Informal</u>	<u>Home Schl</u>	<u>Total</u>
5	37	24	3	5	2	76
7%	49%	32%	4%	7%	3%	

Other: Nanny for kids 0-5, currently getting my k-12 licensure masters in education and possibly middle school science endorsement
Special Education
Special Education
Adult

D4. What type of educational environment do you work in?

<u>K-12 Pub.</u>	<u>K-12 Priv.</u>	<u>University</u>	<u>Home Schl</u>	<u>Informal</u>	<u>Summer Camp</u>	
44	5	2	1	5	1	58
76%	9%	3%	2%	9%	2%	

Other: Not teaching yet
Alternative School
SMM

D5. How many years have you been teaching?

<u>0</u>	<u>1 to 5</u>	<u>5 to 10</u>	<u>11 to 20</u>	<u>21 to 30</u>	<u>>30</u>	
2	11	11	17	11	7	59
3%	19%	19%	29%	19%	12%	

D6. What is the primary content area you teach?

Earth Science	35	44%
General Science	8	10%
Life Science	15	19%
Physical Science	8	10%
Chemistry	2	3%
Other/All	12	15%
Total	80	

GENERAL SURVEY: Continuing Education

CE1. The number of CEC available for this workshop is about the right amount.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	<u>N/A</u>
16	24	15			55	3
29%	44%	27%	0%	0%		

CE2. The EDUC 5570 two-credit course is a valuable option offered by the MMEW

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	<u>N/A</u>
19	18	14			51	7
37%	35%	27%	0%	0%		

Comments:

great price, thanks!

I took the eveleth course for credits - very reasonable! Thus, this year opted for CEC hours.

I'm sure it is valuable, but I've never taken advantage of it.

I don't need credits.

Love being able to get reasonably priced grad credits!

Retired

GENERAL SURVEY: Publicity/Outreach

P1. How did you hear about the MMEW

<u>Website</u>	<u>E-mail</u>	<u>MESTA</u>	<u>Colleague</u>	<u>Principal</u>	<u>Mail</u>	<u>Other</u>	<u>Total</u>
12	28	12	19			8	79
15%	35%	15%	24%	0%	0%	10%	

Other:

Times

Word of mouth, 3 years ago.

MN Dept. of Education Sciene-email.

Former sessions.

Coming 6+ years.

Times

MNSTA

Friend

P2. How would you prefer to be contacted about MMEW in the future?

<u>Website</u>	<u>E-mail</u>	<u>MESTA</u>	<u>Colleague</u>	<u>Principal</u>	<u>Mail</u>	<u>Total</u>
7	53	6				66
11%	80%	9%		0%	0%	

P3. How might we best reach other educators who have not heard about the MMEW?

Start with big schools - get addresses.
 Email is probably best.
 Mail flyers to science teachers.
 MMEW T-Shirts - Annual # and location for that year! - option when register for a little extra \$ if you register by a certain date (enough time for order and arrival for workshop)
 Snail mail postcard
 Flyers to individual schools.
 MnSTA Conference
 Email seems to be effective
 Social media
 Emails to principals of middle/high schools asking them to pass it on
 MMEW T-shirts (Gneiss Chert??) would pay extra \$
 Connect with science coaches in districts
 Ask those attending - email them - suggesting they let 2 other educators know (or 5, or whatever # makes sense)
 MnSTA email?
 Send information to district science curriculum leaders.
 Doing a great job already
 Is there a state-wide list of teachers email addresses who teach science? Someone would have to take time to compile it (and it would change annually) but it would get to everyone
 Word of mouth is the best.
 Through department heads in science
 Contact schools directly with flyers, etc.
 Contact direct science staff
 I continue to share this info with the science teachers in my building - they are not aware
 T-Shirt
 Facebook Group/Event
 MnSTA.org, MDE (Mn Dept. of Ed), Continue promotion at the MESTA Conference, T-Shirts with the MMEW logo
 Have a booth at the MNST conference
 I think there are a lot of educators who would enjoy this - perhaps making more school districts aware to that more teachers could come - emails?
 If you send to building principal with a memo to pass onto science dept. or other pertinent teachers, most would pass on.
 Advertise in MnSTA.
 Perhaps send out an email to principals - often times I will receive emails from my principal on workshops such as this one that are sent to all science teachers in district.

GENERAL SURVEY: Logistics

L1. Circle two factors that are most important in choosing a workshop location

<u>Geology</u>	<u>Mining</u>	<u>Twin C.</u>	<u>Scenic</u>	<u>College</u>	<u>Local Exp.</u>	<u>Accom.</u>	<u>Total</u>
57	12	2	8	4	35	11	129
44%	9%	2%	6%	3%	27%	9%	

L2. Where would you most like to see the MMEW held in the future?

Iron Range/Northern MN	10	13%	Gr. Rapids, Lake of the Woods, Wood Products, I. Falls, Ely, Sulfide mining
Duluth/North Shore	13	17%	Apostle Isl., geology and economics, Jay Cooke Park,
Metro Area	5	6%	Hinkley, Hastings
St. Cloud	10	13%	Central MN, Alexandria
SE MN	6	8%	Marshall, Caves, Winona again!, Stillwater, Taylor's Falls, Karst
SW MN	16	21%	St. Peter, Mankato, Rewood Falls, Pipestone, Morton, Wind Farm, Blue Mound,
NW MN	9	12%	Brainerd, Moorhead, Red River Valley, Itasca, Lake Agassiz,
No Preference	9	12%	Anywhere!, Watersheds, Roving bus tour - 3 different locations
Total	78		

L3. The 3-day format is the right length for workshop of this type.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
26	29	3	0%	0%	58
45%	50%	5%	0%	0%	

L4. The short courses format of 4 course selections for each of 4 session period is appropriate.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
23	31	4	0%	0%	58
40%	53%	7%	0%	0%	

L5. The variety of short course topics offered is reasonable.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
22	33	3	0%	0%	58
38%	57%	5%	0%	0%	

L6. The two days allocated to field trips is appropriate for a workshop of this type.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
30	25	3	0%	0%	58
52%	43%	5%	0%	0%	

Comments:

Like the combination of classroom + field trips - very pleased with # of locations visited + background covered on FTs
 This schedule is great!
 good formula
 There could be more field trips of the area is conducive. Each area in Minnesota differs.
 If 1-2 days were added, I would find that useful.
 Maybe start each day w/ a short course and then field trips because 4 classes in one day get a little long.
 Great field trips!
 Need a few more topics for elem. Teachers - simulator and global warming/oil are great choices.
 The last course was hard to stay alert for.
 Format is fantastic!
 Love the field trips
 Maybe end earlier on Thursday (1-2:00)
 Maybe put courses on Day 2 to break up field trips.
 Could be a bit more variety on the short courses.
 It might work better if the short course day fell on the day in between the 2 field trip days to break things up a bit.
 Great to have information given on day 1 in classroom first. Field trips then all came together day 2-3
 Wish I could take more of the classes offered.
 A lot packed into 2 days.
 1st field trip day was good, but very long.
 It becomes a long 2nd day - especially when doing a long commute after.

L7. The continental breakfast and break snacks were reasonable in variety and nutrition.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
27	23	5	2	1	58
47%	40%	9%	3%	2%	

L8. The menu selection for the lunch buffett on Day 1 was appealing and nutritious

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
30	17	7	3	1	58
52%	29%	12%	5%	2%	

Comments:

Lunch was super!
 Would be nice to have more salads at breakfast and lunch and milk and sodas available for evenings.
 Great food!
 Wow!
 Lunch buffet was a little heavy for lunch. More veggies? It was delicious though.
 Box lunches were not labeled well, mystery sandwiches...
 Nutritious for the Iron Range. Ha! Could have had more vegetables.
 Less donuts more granola perhaps just to be more nutritious.
 L8. cont. Could have a bit more healthy options. Perhaps more fruit.

The "local fare" was a fun option!
 Need vegetables!
 Real Breakfast (eggs, etc..) was great!
 Loved the variety of traditional dishes reflecting the local cultures. Nice touch!
 Enjoyed the local fare on the lunch buffet menu.
 Food at both workshops I have attended (Hibbing & Eveleth) has been outstanding! Loved the day 1 buffet!
 More fruits and vegetables, please! More gluten free options, please!
 Loved it!
 It would be nice to know what is in food. Some people have food allergies
 Caterers should be knowledgeable about the food they are serving for those with allergies.
 Fresh fruit and something different than doughnuts would have been better.
 Would like lettuce salad, not 2 pastas. Needed milk option - little dairy choice for workshop day.
 Loved the food provided!
 Nice variety of ethnic food.
 Where are the fruit and veggies? If you ask about allergies then please meet the needs of us w/allergies. No info was provided about ingredients in food items!
 Heavy on the meat.
 At lunch buffet, have lines on both sides of table so youre working with 2 lines instead of 1. It's beyond me why food managers don't understand the value of this.
 Diet coke would be a big asset.
 The food was very good, appreciate the variety.
 Wouldn't mind plain bagels as a choice. Local food choices was a great idea. Felt bad for allergy prone people
 The addition of fruits at breakfast and attention to food allergies (ingredients/correspondence, etc)
 Special dietary needs of some attendants were not met with the meals provided.
 Bun at picnic was too big/thick (too much bread)

L9. How much did this offer of discounted lodging sway your decision to attend the workshop?

<u>Strongly</u>	<u>Somewhat</u>	<u>Not much</u>	<u>Not at all</u>	<u>Total</u>
17	16	8	18	59
29%	27%	14%	31%	

L10. In the future, assuming free lodging would not be available, what would be the maximum price range you would be willing to pay per night?

<u><25</u>	<u>25-45</u>	<u>45-60</u>	<u>Not imp</u>	<u>Total</u>
3	27	18	11	59
5%	46%	31%	19%	

Comments:

Any amount helps.
 Discounted or free lodging is wonderful and very appreciated. Hotels can be very expensive
 I did not have to pay for lodging, TIMES did.
 Enjoyed the break on lodging, very nice.
 Benefits of attending the workshop outweigh the cost of attending.
 I appreciate the discount! I liked the dorms last year, but having pool+spa was so nice at the end of long days.
 Lodging discount is very appreciated, but I'd attend w/out the discount.
 I have camped every time.
 The discount doesn't sway my decision but is very nice.
 Cheaper = Better
 Probably would have come regardless, but if was in more expensive place would make more sense
 Cost not important as long as lodging is nice. If I'd had to travel, the discounted accomodations would have helped.
 Can you send campground info as well as hotel info? Any chance we can get a campground discount as well or a way to communicate with others to find someone to share campsites. There are a good number of campers every year.
 This really is important to educators on a budget!
 Lodging cost not important if I have a roommate

L11. How long did you have to travel to attend this MMEW?

Hours	#	%	Miles	#	%
>5	4	7%	<50	3	8%
5-4	5	9%	50-100	7	18%
4-3	24	43%	100-200	23	58%
3-2	11	20%	>200	7	18%
2-1	10	18%	Total	40	
<1	2	4%			
Total	56				

L12. What is the maximum distance you would travel?

Miles	#	%
<50	1	2%
50-100	2	3%
100-200	16	27%
>200	40	68%
Total	59	

Comments:

Time away from family is always a concern
 I generally stick to courses/workshops offered within a smaller radius of where I live.
 Distance isn't a primary factor - though long distances (+200 miles) is very difficult with a long 3rd day.
 Anywhere in MN
 Willing to travel anywhere! However, if a long distance, would be good to have option to stay overnight on Thursday. It is tough to make a long drive starting at 5pm on Thursday.
 If it is good, I would drive further.
 Depends where and if it was a place of interest.
 Not more than 4-5 hours from Mpls.
 The long drive is worth it for interesting geology and teaching techniques.
 Commute of 1 hr or less. Or if I were to stay and use lodging, 200-300 mi would be my max.
 I live 40 miles SW of Mpls and have no problem driving anywhere in the state.
 I will go where stuff is, Moorhead is far from everything.
 Really doesn't matter - I'll go wherever it's offered.
 No problem, if quality is there.
 No limit
 I wouldn't attend in a location previously visited if it was too far away unless the program was way different.
 Depends on area (2)
 Not an issue
 Worth it!
 If I'm interested I try to make it happen. This workshop is worth a drive.

L13. The \$40 registration fee is reasonable

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
37	22				59
63%	37%	0%	0%	0%	

L14. The cost of travel and lodging is a limiting factor to my attendance.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>
1	21	17	15	5	59
2%	36%	29%	25%	8%	

L15. My school district contributed to the cost of my attendance

<u>Full</u>	<u>Partial</u>	<u>No cost</u>	<u>Prefer Not to Answer</u>	<u>Total</u>
5	11	40	2	1
8%	19%	68%	3%	2%

Comments:

TIMES grant

Very reasonable cost. I agree with charging a small fee to make sure people show and for food/other materials.

My choosing to attend this workshop was based on receiving college credit. At first when that wasn't an option and then when a later email came stating we could get credit, I was "in".

The final coverages is determined by ammount of mileage - at the end of the school year the ammount of dollars left to cover costs is uncertain - just the way a small private school works sometimes.

TIMES paid for my attendance.

I would be happy to pay extra (\$5-10) for an MMEW t-shirt!

I'm very grateful for the subsidized costs and volunteer hours that make this possible.

I'm more than happy to pay the \$40!

I paid for it personally.

It will be much more difficult for many teachers to obtain grants in 2014 due to changes in state staff development laws.

Thank you for keeping costs low, it's appreciated, the value is huge.

Low registration fee was critical to my coming. Lodging costs needs to be reasonable for me to come.

District paid my registration fee.

District might pay part of my costs, I'll know more later.

No funds were available so I paid on my own.

Retired

General

Comments:

I really appreciated the clear times on the schedule. When times needed to be altered, the new time should have been honored. If stated we will start in 10 minutes, don't start in 5 minutes.

I thought overall the conference was good. It was well-planned and for the most part logistics were thought of. However, more bathroom breaks were needed, perhaps breaking up the 2 buses could accommodate this better.

The mining employees were very gracious with their time and access. One of the mining employees at HibTac was a little upset that an environmental activist who was not a teacher was part of the group. I think looks bad on all of us. And finally...some of the leaders + planners need to be nice! Many of their responses and instructions were very rude. (Marsha and the gentleman driving the truck). Also - with the safety glasses...perhaps 2 pair needed - one with tinted to protect our eyes from the sun and glare so that we could see better outside.

2013 MMEW Survey - Short Courses

Short Course Survey - General

C1. Please indicate the short courses you attended.

Session	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>Totals</u>
1	Rx & Min	Glacial	Mesabi R		Simulator	58
	16	21	17		4	
2	PT & RC	Grnd Wtr	Sci Stds	Careers	Simulator	58
	28	13	7	7	3	
3	Pop & NR	DC	Mining Seq	Reclam	Simulator	58
	17	26	8	2	5	
4	Oil/Climate	NF Mining	Aggregate	Mine Econ	Simulator	58
	24	10	11	6	7	

Short Course Survey -Session 1A

Course: Rock and Mineral ID

Instructor: Rick Ruhanen

S1. Why did you choose this topic?

- To learn about how to ID minerals + good ideas as to how to present it.
- Refresher.
- To become better at identifying rocks + minerals
- Good topic for 1st - 3rd year teachers
- Needed review, thought I might get lesson ideas
- I thought we would go through this a bit more.
- Wanted to know how to better use all the new minerals I've purchased for my classroom
- Interesting
- For Review
- Learn more about ID-ing rocks and minerals and build my confidence
- to get more practice identifying
- I teach it and need anecdotes/info
- need more help in this area
- Mineral ID is a big part of my science standards. I wanted to learn more to pass along to my students.
- Learn more identification and difference between rocks and minerals

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
8	7	1			16	
50%	44%	6%	0%	0%	3.44	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
8	5	3			16	
50%	31%	19%	0%	0%	3.31	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
11	4	1			16	
69%	25%	6%	0%	0%	3.63	GPA

Comments:

- Moved quickly. For a novice it was difficult to follow and sort. A good starting point, though.
- Loved the "hands-on" small group style
- He taught us great into, had wonderful samples, very enthusiastic.
- Needed to see more samples and more lesson ideas.
- Very knowledgeable and prepared, but I would have liked to do the identification. The class seemed more of a show and te
- Great job, Rick - Thanks :)
- Excellent
- Great session
- Good first class, rick was fun
- Very knowledgeable, well-documented data and arguments
- Rick knew the material!!! Could split into two classes: Mineral ID and Rock ID

Short Course Survey -Session 1B

Course: Glacial Geol of Northern MN
Instructors: Howard Mooers & Phil Larson

S1. Why did you choose this topic?

- Learn more about how glaciers shaped Minnesota's landscape
- Additional information
- Interest
- Something I could bring back to my classroom
- Learn more about geology in area.
- Interest in glaciers
- I teach about glaciers in my 8th grade class; part of MN science standards; wanted to learn more about glaciers.
- Brush up on MN geology/glacial evidence
- Interested in glacial geology
- Applicable to the area near my school
- I'm very interested in MN's glacial history
- I wanted to learn more about MN + glaciers
- Wanted more info about MN's glaciations
- Interested in glacial features located in NE Minnesota that I can give as example to my students.
- Love glacial geology, and thought I'd get new ideas.
- Not often as thoroughly discussed as bedrock geology.
- Didn't, went to the wrong room.
- I'm interested in the topic
- I wanted to learn more about glacial history of MN
- Knew the least

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
7	13	2	0	0	22	
32%	59%	9%	0%	0%	3.23	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
5	9	6	2	0	22	
23%	41%	27%	9%	0%	2.77	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
4	11	6	1	0	22	
18%	50%	27%	5%	0%	2.82	GPA

Comments:

- Did learn more about glaciers, however, didn't feel I got much info to use in the classroom - activity given was only geared Howard very engaging, Phil much less so
- It was just a lot of vocab, I wanted some time on explanations of these events + how to interpret digital maps and identify i
- Most of the class was spent reviewing terms. Very little info on MN specific glaciation :(Notes in binder were different than
- It was informative for me personally; not sure how much I will use with my 8th graders
- Speaker put me to sleep
- More info about how to bring glacial evidence activities into the classroom would be appreciated
- Could use "speech" course

Short Course Survey -Session 1C

Course: Mesabi Range Geology and History

Instructor: Mark Jirsa

S1. Why did you choose this topic?

- Unfamiliar with the geology of this region
- It's in multiple areas that I teach - looking for more background
- Interest
- Since we were here, I wanted to gain a better understanding of the range geology and history
- Wanted to learn more on background of area
- I enjoy geologic history of MN
- Interest
- General interest
- I was born and raised on range and wanted to know more about this region.
- I wanted to learn more about the local geology before the field trips
- Interest - different from past courses
- To learn about the Mesabi Range. I knew nothing more than the words before session.
- Background knowledge
- Local interest
- Local interest
- Topic of major interest to me.
- Mark is a great speaker!

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
8	9				17	
47%	53%	0%	0%	0%	3.47	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
4	10	2	1		17	
24%	59%	12%	6%	0%	3.00	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
9	8				17	
53%	47%	0%	0%	0%	3.53	GPA

Comments:

- Teacher was excellent
- I will be able to use the rocks from the resource kit
- Good overview for beginner, loved looking at the bonus maps
- Would have been great to see/learn something that could be used int classroom somehow, but great info!

Short Course Survey -Session 1-4E

Course: Heavy Equipment Simulator

Instructor: Mary Brandt

S1. Why did you choose this topic?

- Fun
- Sounded interesting
- Because I've attended similar topics given except the simulator
- Unique
- Wanted to try operating larger truck
- Wanted to drive the simulator
- Fun!
- Unique experience
- Fun!
- Career options for students
- Fun
- Like hands on
- Fun
- Fun
- I thought it would be fun. Interesting and a unique opportunity.
- Learn all facets of mining
- Seemed interesting
- Looked like a fun course to learn how to drive a truck for the mines.

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
5	9	4	0	0	18	
28%	50%	22%	0%	0%	3.06	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
4	8	4	2	0	18	
22%	44%	22%	11%	0%	2.78	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
9	8	1	0	0	18	
50%	44%	6%	0%	0%	3.44	GPA

Comments:

- Only wished we all had more time on the simulator. Presenter thought we had 30 more minutes so 2 of us only got 3 mins
- Grat class and was fun when we saw them in the mines
- Enjoyed trying the simulator - unique experience
- Lots of info on bucket content load, costs, etc...
- It was fun and interesting
- Simulator was broken, I understand these things happen but was disappointed
- Simulator broke, but instructor did a great job improvising and keeping class informative
- Unfortunatley, the sumulator wasn't working, but the instructor spoke and gabe great info and answered questions
- Fantastic, but the simulator broke. Very good talk.
- Even when the simulator wouldn't work, Rick was able to explain everything and had a TON of knowledge to share. He was

Short Course Survey -Session 2A

Course: Plate Tectonics & the Rock Cycle

Instructor: Jim Miller

S1. Why did you choose this topic?

Instructor is always good and plate tectonics is elemental to NE MN	
Love listening to Jim Miller! He's awesome!!	
It's a topic covered in my labs, looking for info to possibly add	
Refresher course - looking for new ideas	
To increase my understanding of plate tectonics and how the rock cycle fits it.	
For new ideas in classroom	Jim is a great teacher!!
Classroom relevance	Topic of interest
Increase knowledge	needed review and lesson ideas
I enjoy the content!	because Jim Miller taught it
very big part of my curriculum	for review
Jim Miller	Increase knowledge
Instructor	to get a better understanding of the rock cycle
Interest	Topic, hands on science
Review and refresher on topic	Most interested in bigger picture
Very applicable to my classroom - students	Another good topic for 1st year teachers
	Get new ideas and info about plate tectonics

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
21	7				28	
75%	25%	0%	0%	0%	3.75	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
20	6	2			28	
71%	21%	7%	0%	0%	3.64	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
25	3				28	
89%	11%	0%	0%	0%	3.89	GPA

Comments:

Good stuff!
 The flow of this lecture was interesting and relevant
 Great course!
 Great course! Great information! Great teacher! Was given info I can use in my class
 Great way to use the rock cycle to tie together w/the fact of plate tectonics
 Best presentation I went to all day! I liked the presentation I will use the way it was presented.
 Best class of the day
 Interactive piece was great
 Really good presentation, good tips for application in classroom
 Excellent presentation
 I like that there was an interactive part - then a mini-lecture - then come full circle back to the rock cycle. I also liked hearing how other teachers would implement in the classroom.
 Always knowledgeable.
 Was above my students age but good for me
 Terrific!
 Great presentation - I learned a lot!

Short Course Survey -Session 2B

Course: Ground Water Quality

Instructor: Jim Lundy

S1. Why did you choose this topic?

- Interest of mine
- very interested in groundwater quality
- direct relationship to standards/special interest in our area
- We are focusing on ground water in our community
- a talented presenter with great demonstrations
- very important
- environment
- environment
- I teach environment science and earth science and I thought it would be relevant to both
- actually was 2nd choice - but generally interested
- water is vital
- water quality of local area w/mining

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
5	7	1			13	
38%	54%	8%	0%	0%	3.31	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
5	8				13	
38%	62%	0%	0%	0%	3.38	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
6	7				13	
46%	54%	0%	0%	0%	3.46	<i>GPA</i>

Comments :

- Wish there could have been more on all the current events around mining and quality of H2O
- Should have talked about local GW issues
- Some of his information/activities are not in the binder! Or on the USB drive...
- He was awesome!
- Very engaging!
- No "new" information!

Short Course Survey -Session 2C

Course: National and State Science Standards

Instructor: Dean Moosavi

S1. Why did you choose this topic?

Interested in standards

Since I'm going in to education I felt it would be beneficial

To get help w/how to incorporate the standards into my classroom

More knowledge on standards

Option #2 - sounded applicable to everyday teaching science - new 6th grade next year

Relevant to teaching

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	1	4			7	
29%	14%	57%	0%	0%	2.71	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1	2	4			7	
14%	29%	57%	0%	0%	2.57	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	5				7	
29%	71%	0%	0%	0%	3.29	<i>GPA</i>

Comments:

Great info and perspective on standards and how they impact classroom teachers

I liked the way we were able to participate and talk a lot w/each other. Would have been nice to gain specific standards les

Was looking for more specifics on standards and applying them in the classroom rather than their origin.

Great pedagogy, got class involved

Would have liked to learn more about the specific standards and how to address them and teach to them in the classroom

Short Course Survey -Session 2D

Course: Mining-related Careers

Instructor: Mo Benda

S1. Why did you choose this topic?

- Always want to know about jobs
- I focus on career prep in vocational areas
- student relevant
- Chosen for us

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	5				7	
29%	71%	0%	0%	0%	3.29	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	4	1			7	
29%	57%	14%	0%	0%	3.14	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
4	3				7	
57%	43%	0%	0%	0%	3.57	GPA

Comments:

- Great web resources shared
- Fun! :)

Short Course Survey -Session 3A

Course: Population and Natural Resources

Instructor: Richard Ojakangas

S1. Why did you choose this topic?

It's a topic that is very relevant today
 because I'm a bioteacher and this appealed to my life science brain
 wanted to see who Ojakangas was
 Interest in population pressure on resource use
 Instructor
 The presenter
 Interest and Dick is an interesting speaker
 Not sure
 I could also use this when teaching population in Biology
 I thought it would fit well with my environmental science class curriculum
 Interest
 General information
 I wanted to learn more about natural resources
 Interesting topic
 interested in populations of all species

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
4	11	1	1		17	
24%	65%	6%	6%	0%	3.06	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
5	10	2			17	
29%	59%	12%	0%	0%	3.18	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
10	6		1		17	
59%	35%	0%	6%	0%	3.47	GPA

Comments:

Interesting stats
 Good presentation, but a bit generic. I wanted more statistics about consumption and impact of resource demand and res
 I was looking forward to hearing the legendary Dick Ojakangas talk. Unfortunately, it was a lot of uncited slides (where is hi
 Really engaging, and Dr. Ojakangas is awesome
 Maybe info geared toward college level
 Excellent! Fantastic! Extremely educational and eye-opening!

Short Course Survey -Session 3B

Course: Duluth Complex Geology/Ore Deposits/Environment

Instructor: Phil Larson

S1. Why did you choose this topic?

- To learn more about Minnesota geology
- Interested in it
- Sounded interesting
- Interest in the Duluth Complex
- I enjoy the Duluth area
- To gain a better understanding of the Cu-Ni mining issue and formation
- Interested in Duluth Complex
- I don't know much about Duluth Complex
- Important and sometimes difficult to understand geology geared course
- interesting topic
- learn more about geological features of MN geology
- Interested in geology of northern Minnesota
- Refresh my knowledge
- Geology
- Geology
- Mostly because I heard about the Duluth Complex at MMEW in Ely
- Interest
- Misplaced registration - I didn't. 3rd choice.
- "Duluth" - thought it related to Duluth area
- I love Duluth and hoped to get more info about the area
- Most geology-related

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
6	15	3	1	1	26	
23%	58%	12%	4%	4%	2.92	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	7	10	5	2	26	
8%	27%	38%	19%	8%	2.08	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
3	16	4	3		26	
12%	62%	15%	12%	0%	2.73	GPA

Comments:

- So dry and boring
- He was very knowledgeable, but it got very long. I'm not sure what I expected, but it wasn't what I was hoping for :)
- Not readily available for classroom use without the maps used
- He was boring and over my head after the first 30 minutes
- Had a hard time following, hard time relating information to what I can use. Slide shows not available during class for note:
- Not relevant geoscience content for elementary school teacher. Content delivery dry.
- Great info
- Instructor did not engage participants - Lots of distracting activities going on throughout the course!
- I do not know enough about the process to present to 4th graders. Information was way over my head.
- Not very engaging. Take a speech course!

Short Course Survey -Session 3C

Course: Taconite Mining Sequence

Instructor: Jeff Price

S1. Why did you choose this topic?

Increase knowledge

This pertains to my students and what many of their parents do for a career

What I could bring to my classroom. I have had Jeff as a presenter before

Been coming up to Hibbing for 30+ years, never understood the process

To be able to learn more before field trip Day #2

Wanted to gain a better understanding of mining sequence

Wanted to learn more about mining

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	6				8	
25%	75%	0%	0%	0%	3.25	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1	5	2			8	
13%	63%	25%	0%	0%	2.88	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
4	3	1			8	
50%	38%	13%	0%	0%	3.38	<i>GPA</i>

Comments:

Very open to answering questions

Good detailed info on the complete process and history

Would have liked to have learned more about this topic being integrated into my science classroom. Great to have DVD to

Would have liked to be able to actually do the hands-on activity

Great info - wish we had spent a little time on the classroom activity

Short Course Survey -Session 3D

Course: Laurentian Vision - Reclamation

Instructors: Dan Jordan & Jim Plummer

S1. Why did you choose this topic?

Reclamation

I have strong ties to the region and wish to see it prosper

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1		1			2	
50%	0%	50%	0%	0%	3.00	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1	1				2	
50%	50%	0%	0%	0%	3.50	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2					2	
100%	0%	0%	0%	0%	4.00	<i>GPA</i>

Comments:

Short Course Survey -Session 4A

Course: World's Oil and Climate Change

Instructor: Dick Ojakangas

S1. Why did you choose this topic?

- Interesting author and professor
- Hot topic
- Love learning about oil and climate change - getting more info and facts to pass on to my students
- It's relevant and can be taught to any type of class science or non science related. Important!
- Wanted better understanding of ND oil boom and methods used for extraction
- Hot topic - I felt like the was just spouting a political agenda
- Learn more about content on climate change.
- Because I like to hear Dick Ojakangas
- Wanted to listen to Ojakangas - great speaker
- Oil and Climate change seemed relevant topics for elementary students
- I teach a unit on climate change
- Took a class last summer on climate change.
- Ties in w/previous short course (pop and NR)
- Interest in relation between consumption, environmental input and resource use
- important concepts to cover
- can use info in class
- Interest
- General information on a relevant topic
- To learn more about climate change

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
8	11	4	1		24	
33%	46%	17%	4%	0%	3.08	GPA

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
7	10	6	1		24	
29%	42%	25%	4%	0%	2.96	GPA

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
12	9	2	1		24	
50%	38%	8%	4%	0%	3.33	GPA

Comments:

- Prepared and knowledgeable but not engaging
- Just read the notes, could have gotten whole talk from handouts
- Lots of facts I could pass on
- Pace was ok but could have been sped up some - perhaps less cartoons on slide show is one suggestion
- Politically motivated and instructor was unable to answer questions.
- Best breakout lecture; engaging - easy to listen to and learn from instructor
- Loved his style
- good stats to use for kids
- Nice delivery, but would appreciate more specific country by country comparative usage (facts and stats) for my own understanding of disparities. However, the powerpoint presentation is at a good level to use with students
- Interesting!
- Really engaging, and Dr. Ojakangas is awesome
- I didn't learn new information. Many of his facts he didn't know.

Short Course Survey -Session 4B

Course: Successful Non-ferrous Mining

Instructor: Paul Eger

S1. Why did you choose this topic?

- Current controversy over this
- Current topic - wanted to learn more about this mining process
- Wanted discussion of non-ferrous vs iron mining
- Thought I should look into this due to potential non-ferrous mining in MN
- Local
- Interest
- It's current
- Local
- More info on current controversy
- Interested in the PolyMet + Twin Metals projects from an environmental perspective.

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1	7	2	0	0	10	
10%	70%	20%	0%	0%	2.90	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1	7	2	0	0	10	
10%	70%	20%	0%	0%	2.90	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
3	6	1	0	0	10	
30%	60%	10%	0%	0%	3.20	<i>GPA</i>

Comments:

- Still not convinced - didn't really present a real "success story"
- Work on presentation pace
- Vague presentation and participation parts not useful

Short Course Survey -Session 4C

Course: Aggregate Resources

Instructor: Christina Morrison

S1. Why did you choose this topic?

- Hands on
- Hot babe
- MN resource
- Wanted to learn more about aggregates
- To be able to explain aggregate better to my students
- Curious about the industry. Wonder about environmental/wildlife considerations
- Gravel/Aggregate is mined in every county in MN!
- Interested in subject
- Want to know more about aggregate mining
- Wanted to learn more

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
5	6				11	
45%	55%	0%	0%	0%	3.45	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
7	3	1			11	
64%	27%	9%	0%	0%	3.55	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
8	3				11	
73%	27%	0%	0%	0%	3.73	<i>GPA</i>

Comments:

- Outgoing instructor, new concept to me!
- Now I want to learn more about the gravel mine near my school!
- nice lesson ideas
- very good

Short Course Survey -Session 4D

Course: Economics of Mining

Instructor: Rick Sandri

S1. Why did you choose this topic?

Workforce development

No particular reason

Interesting topic

To get more ideas on this topic when I use a mining simulation in class

I live in Hibbing - and I'm curious

Interested in mining development

S2. The short course imparted relevant geoscience content.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
2	3	1	0	0	6	
33%	50%	17%	0%	0%	3.17	<i>GPA</i>

S3. The short course provided content that I could apply to my classroom.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
1	5	0	0	0	6	
17%	83%	0%	0%	0%	3.17	<i>GPA</i>

S4. The instructor was prepared, knowledgeable and engaging.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
3	3	0	0	0	6	
50%	50%	0%	0%	0%	3.50	<i>GPA</i>

Comments:

I won \$5!

2012 MMEW Survey - Resources, Evening Activities, Field Trips, Closure**Teacher Resource Survey**

R1- Materials within the resource box will of use in my classroom environment

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
27	30	7	0%	0%	64	
42%	47%	11%			3.31	GPA

R2. The pen magnets, rock and mineral samples, and hardness test kits will be useful additions to my resource collection

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
36	25	3	0%	0%	64	
56%	39%	5%			3.52	GPA

R3. What other types of teacher resources would you like to see made available?

MMEW T-shirts

reference books

Reference books, Different posters - same the last three years, I love all the rock/mineral samples, MMEW T-shirts: I would pay a little extra in registration to get a T-shirt

MN Rocks - Samples (more), P.S. I really like 1: hands on classes vs. lecture only, 2: handouts (are they on flash drive, too?)

Class sets instead of teacher set.

I like that they are online

Can we purchase more? I would like to have enough for a class of 36 x 5 sections

Maps relevant to my location

Books like years past: MN geology, Roadside geology, books related to region as well for example Duluth area (agate book) etc.

"canned" lesson plans, teachers are much more likely to pass on material when they are giving it to their students

guide for identifying rocks and minerals

perhaps lesson plans, handouts, worksheets

Classroom set of rocks in the area

Keep the rock and mineral samples coming

4.5 billion years in MN poster

Scale card for photos, T-shirt

Hand lens

Geology books on local area - nevermind, your handouts are awesome!

I appreciate the online slides and activities plus the video

Related concept maps.

Thank you for all the resources!

Other student lesson plans following the workshop

More classroom activities

The rock and mineral sets are great, but done every year. Anything new would be great. I tend to give these kits to educators who don't attend the workshop yearly

I loved the fossil book we got last year! Maybe these should be a box for newbies w/things like a loupe + fossil book...Also, this year there was no scratch (glass) plate in my kit.

No glass plates in kit

Field guides! Childrens books, or a list of kids books for use in class as intro/hook

Lesson plans/units - adaptable to many grades. I see one course on Economics and Minerals but did not take that class

Liked the books, and past resources - very helpful!

I hope to display the rocks/pen, etc... in a discovery center.

More maps! USGS maps of Hibbing and would be great. Aerial photos Field guides are nice. Last year's fossil book was great!

Basic MN mineral/rock identification poster or booklets.

More posters

Great resources

distracting from learning. So maybe split the courses for 1: elementary/middle teachers, 2: high school teachers, and 3: people just wanting to "show off". Then maybe those that are there to get info to teach to their kids will get some. I didn't learn anything from short courses to help my elementary students. The mineral ID class was really good, except for those that were trying to distract the instructor.

Retired so did not.

A map showing the area we were in would have been great - your give-aways are used in my class and greatly appreciated.

Better rock/mineral specimens

Tuesday Evening Activities

EA1: The barbeque picnic was well organized and included good food.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
35	20	5	0%	0%	60	
58%	33%	8%			3.50	GPA

The fossil hunt at Hill Annex State Park was educational and well organized.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
22	27	3	3	0%	55	
40%	49%	5%	5%		3.24	GPA

EA3. Including an optional field trip/activity on Tuesday nights after the short courses adds to the strength of the workshop.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
30	25	5	0%	0%	60	
50%	42%	8%			3.42	GPA

Comments

It would have been a great field trip instead of such a short time.

Liked museum - wished it had remained open while we were there! (ran out of time)

Terrific Workshop again - Thank you! And nice people

Fun (2)

Enjoyed Charlie's commentary on the bus rides - Great workshop, I will tell others and be back.

Maybe add an optional on Wednesday/Thurs evenings as well. Open time to share lesson plans/resource ideas.

Too bad we could not have done the planetarium Wed. night as an option. I like to keep busy so perhaps having a few optional activities in area (even if @ cost)

Great add on to the conference

Excellent food options. Thank you!

Perfect ending to the day. Gave us a good activity after sitting all day

A great collecting and geo history opportunity

Make available on website lessons worked up by fellow participants. Continue to offer healthy snacks and drinks.

Improve mic system so we can all hear the info being shared.

Thank you for including our spouses and kids!

Wednesday - probably too much - pretty long day.

I had over an hour commute, so left prior to the fossil hunt. If I had stayed in Hibbing, I would have gone.

More fruits and vegetables please!

In the future for Hibbing or the Range is to tour Hibbing High School - its amazing

Was a great evening. I would have really liked a tour of the mining side of the park, but beggars cant be choosers.

Seeing the shark tooth the 8 yr old girl found was great.

The only meat served and we were with a person with a pork allergy. The pork was really good, though

I was very disappointed by the attitudes/behavior decorum of the teachers on this trip and by the coordinators ability to address the issues.

This is good for the social aspect of a 3-day workshop. Helps participants get to know each other.

Helps build relationships among participants.

Would have been nice to stick to 8:30 AM leave time for those who rode the bus. Good organization for the field trip.

I enjoyed the picnic and fossil hunt gave us time to talk to the new people we met.

I am not a vegetarian, but I never eat pork. I did not think to specify this, though, because there are usually several option.

Pork was the only option for the main course at the picnic; it would have been good to at least offer cheese instead. Salads

Wasn't aware of the Tuesday night trip

Maybe have some sessions geared toward elementary science and hands on learning done at that level. The minerals course was very good for this.

Allows for networking!

Great to have this option - close so not to be an extra distance and very interesting

Bun too big. Not too much to find, more interested in mineral/rock specimens

Field Trip Survey

FT1. Which outcrop or activity did you find the most interesting and why?

All		0%
UMD-CMRL	6	8%
KeeTac	24	30%
MNDNR Core Library	3	4%
HibTac	26	33%
Essar	12	15%
Magnetation	5	6%
Hawkinson Aggregate	3	4%
None		0%
Total	<u>79</u>	

Comment:

Essar steel presentation was good! Perhaps it would have been useful to present on first day since there are some new participant
Essar/Magnetation - very in-depth explanations, great at answering questions
Essar - got to see the mine/plant from a different perspective - skeleton, all the parts, things we wouldn't know otherwise.
Suggestion - Wed - use simple 8x10 signs for plant tours, e.g. @ KeeTac, cant hear over crusher
KeeTac processing plant - to see the actual processing - the presentation Thurs morning was good to re-explain the process.
Essar Steel - never seen anything like it
Loved the KeeTac tour (very informative) All the field trips were beneficial - very well rounded variety
KeeTac plant - had no idea there is so much to the process - so neat to see it from beginning to end.
A lot packed in to short time - but all important and valuable information
Last one (HibTac) the ladies were enthusiastic and knowledgeable
HibTac - the girls were great!
HibTac - very knowledgeable tour guide.
Cliffs - very knowledgeable staff
Coleraine researc lab - for insight into the research process
KeeTac plant - excellent tour! Hawkinson construction really rocked too :)
Too may mine tours - would have preferred to gather and explore the land to collect rock & mineral samples
USSteel - walkin through plant gave a better understanding of the actual process with good explanation by tour guide.
liked both mines equally - great to see and understand the process and the people firsthand
Mineral Research Lab - could look at some of their actual findings
Essar - because it was under construction and a new process
I found all of them interesting. Research (Colerane) archiving (core lab), setting up a new plant (Essar), plant operation (KeeTac),
post operaion (HibTac). Great overview of all parts of iron ore mining!
Essar - really liked seeing a mine being built! Thought it was fascinating.
Magnetation was a very close second, but HibTac - the enthusiasm of the guides (Julie, etc...) was amazing. Seeing the Hull Rust
overlook from inside was cool.
Magnetation - it was a different process than the others.
HibTac - the people from the mine who spoke to us were so passionate plus I liked the reclamation part (tree hugger in me)
Taconite plant tour - were able to see process up close versus seeing a video.
USS KeeTac - going through the plant and seeing the process.
HibTac - Julie (guide) was well spiken & passionate, easy to relate to.
HibTac Mine - expanse of mining, good leaders of mine tours, able to see operation on own from Hill Annex site.
Essar - upcoming mine neat to see in development stages. All tours were terrific - core library could have been shorter.
Essar - interesting to see a place being built. Also liked magnetation and aggregate - nice day.
USS KeeTac Plant - great plant tour - aided in my understanding of the process. Also really enjoyed the HibTac tour and was very
impressed with the Essar Steel group.
USS both sites - very informative and gave me a visual for what I learned
Pit view of KeeTac was fabulous, but wish we could have gotten photos of stratigraphy. Core library was cool. Magnetation site
was really cool use of technology for reclamation.
The NRRI Research Lab - it gave insight into the effort to assess, evaluate, and apply research findings and innovations.
KeeTac - first visit to a pit and process facility
Seeing Essar's early phase construction after touring established mines was very useful.
Essar plant - new is always nice. Loved the diorite!
HibTac - we could see the operation in progress
U of M research center
Ore pit tours - hands on samples
Magnetation - new field - example of innovation
Essar - I was impressed to see the foresight needed to plan such an undertaking
I truly understand glacial till - layers - what is being mined. This topic for Minnesota is so critical to understanding our history and
geology. Loved all the trips.
I loved seeing all the different plants/ to see reclamation and understand the diff. in mining.

The amount of repetition helped increase understanding at all of the sites. The collaboration of KeeTac and HibTac was very helpful. All sites were very interesting.

KeeTac - awesome in size, function, just WOW! HibTac - great leaders, loved the reclamation stuff. Essar = awesome. Rainy lobe gravel!! :)

Fossil hunting because we were actively doing something rather than just listening to someone.

Aggregate field trip - free rocks and gravel!

Keewatin - more to see in total

FT2. Schedule/pacing of the field trip was appropriate for understanding of the geology and mining operations in the area.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
21	32	5	2		60	
35%	53%	8%	3%	0%	3.20	GPA

FT3. The bus transportation, breaks, food and beverages provided were well planned.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
32	24	2	2		60	
53%	40%	3%	3%	0%	3.43	GPA

FT4. The field trip leaders provided clear instructions about logistics and time constraints at each field trip stop.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
25	30	3	1	1	60	
42%	50%	5%	2%	2%	3.28	GPA

FT5. The field trip leaders and volunteer helpers provided clear descriptions of the geology and resource aspects of the various stops on the field trip.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
32	25	3			60	
53%	42%	5%	0%	0%	3.48	GPA

FT6. The cumulative activities of the field trip gave a balanced perspective and understanding of the geologic, mining and environmental issues relevant to these sites.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
30	26	4			60	
50%	43%	7%	0%	0%	3.43	GPA

FT7. The content of the field trip was directly relevant to the curricular needs of my educational environment.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
22	26	11	1		60	
37%	43%	18%	2%	0%	3.15	GPA

Comments:

Having Chuck on Bus B was a great asset! Very knowledgeable and funne!

Chuck on Bus B was extremely helpful in pointing out highlight areas whie going down the highway.

Less touring of plants and more touring of geological sites would be nice. More time to gather samples or at least to look at fields of rocks + minerals

More geological sites, less mines/plants. Stay on time! Take into account loading and unloading time, bathroom breaks, walking...

Chuck was a great addition to Bus B - knew area, geology, history, etc...

Nice to end on time - we try to do too much?? Allow for loading time?

Each site's reps were outstanding. KeeTac and HibTac personnel did an amazing job.

2 weeks out of school I want to relax a little, the day we got back at 5:15 was too much! (mentally, I shut down about 4:00)

Mn. 8th grade standard

The first field trip day had one too many stops and was long and tiring. But also very educational.

Excellent

72 people converging in one spot was a bit much and hard to hear and interact with presenters. I would also like to have a little mini-lesson at the sites, but with so many people, it would be hard to accomplish.

Loved the field trips.

Lots of info to take in! But overall content is relevant and interesting. Just need time to take it all in.

Great background info but would be hard to directly use in classroom w/o students being able to directly observe

Couldn't hear on bus! Speakers faced BACK and couldn't hear in front.

I couldn't hear on our bus. The microphone didn't work and when they yelled, I would listen, but people up front started talking and

Would have liked less speech time at the first spot and more time for the tour.

I can now better explain the mining process, MN iron range geology, and mineland reclamation!

Lets bring back more outcrop and map talks in place of one less industrial site visit

Make it clear before we get off the bus whether pics are okay.

More outcrops. Try to get mostly sites that allow pics and/or collecting. Nice to have something concrete for classroom.

The environmental Issues: Almost too much - everyone emphasized the environmental impacts and reclamation recoveries - WE GET IT! Each group sounded like they were in competition with the other mines on the range!

Field trips gave hands-on observation and background, know important for classroom instruction

I do not teach earth science

share seats so people in the back could move up. What's up with the rude selfish men attendees on this trip? Disappointing to see peers behaving this way.

More geology!

I realize that mining industries pay a lot for the workshop, but more focus on geology would be nice.

This year people seemed rude. The on/off bus courtesies were not followed. I was disappointed in the way people were treated. I feel like companies won't let us go to their stuff when people ignore safety. (I like to follow rules)

There was a rude man that refused to let anyone sit w/him or to double up so someone could sit w/their Dad. We are not children why act like a 4 yr old who won't share?

One plant visit would have been enough. The redundancy of the day made it seem long.

By the end of the day 1 I understand mining better - I think going to the UMD lab might have been more appropriate for day 2 or the end of day 1.

Bus potty smell on Bus A was nauseating

Communication to participants about transportation, breaks, and food would be very appreciated.

Coach Bus A - Great to have coach, but, we asked several different times for air conditioning - told it was on but later, the overhead system actually came in - NO explanation given.

At end of day, I stated it was unbearable to be in the back with the bathroom stink. Jim said "Didn't the driver tell us?" No - never even knew bus driver was aware. It felt like our concerns were not heard.

This is for my background knowledge. I found the career option in the mines fascinating. The best!

The day got a little long but well organized! Great job and fabulous locations.

Need more bathroom breaks! At real bathrooms!

Really excellent experience, really increased my knowledge so much!

Plan for bread of better character - move up from white bread - A pickle in baggie instead of plastic container, some with carrot or celery sticks instead of slaw.

Smell on bus

Maybe make the 2nd day of field trips a half day

Bathroom Breaks! My students need to understand the economy and driving forces of the state - The geological history meets the human needs - stewardship.

Much was above my grade level, but it can be adapted. Very worthwhile.

Awesome!!

Retired, but talk to other groups (scouts, etc...)

Closure Survey

C1. The MMEW workshop is a great value for K-12 earth science teachers.

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
48	12	1	1		62	
77%	19%	2%	2%	0%	3.73	GPA

C2. The information gained from the short courses will be valuable to my teaching

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
23	33	5	1		62	
37%	53%	8%	2%	0%	3.26	GPA

C3. The information gained from the field trips will be valuable to my teaching

<u>SA</u>	<u>A</u>	<u>N</u>	<u>D</u>	<u>SD</u>	<u>Total</u>	
33	24	3	1		61	
54%	39%	5%	2%	0%	3.46	GPA

C4. Final suggestions on how to Improve the workshop:

Short Courses

Most of the classes I attended went over info I already knew. Except for Christine and her aggregate talk.
Jim's geology lesson before the field trips was really good.
Workshops are awesome. Perhaps offer classes that are popular more than once? (multiple time slots)
Love the MMEW! One of the best courses I've taken in the summer! Jim is an excellent teacher whose enthusiasm for geology is contagious!
Since the workshop is for educators I recommend to give lessons that are specific which we can bring back and teach our students in the science room.
Would have been nice to have a bit more info and activities which could be applicable and able to be implemented in a classroom
I liked the short courses, but they weren't as good as the previous years. I look forward to this and appreciate these 3 days
A summary of lectures/classes, rather than just the sessions would be helpful.
Very well-done. Very knowledgeable speakers.

Field Trip

Feedback on PA systems was a little annoying.
wanted info on tourism industry and conservationist input on how mining affects this region
One of the best as-is - but could use more discussion of outcrops and their geo-history as well as more collecting opportunities
Maybe your sponsors will pay for special audio earmuffs so we can hear the tour guides at the noisy places?
more geological field trips
I would have enjoyed a little more "raw geology" - a stop at some glacial features, rock outcrops, etc... for about 1/4 of the field day - like the beginning of one morning or one afternoon
The drill core stop was a waste of time! The rest was great!
The Essar presentation was excellent!!

Food

Add yogurt and granola bars for breakfast
vary breakfast - french toast

Special Activities & Resources

Add lesson repository so lesson plans are available later to all
If feasible, an activity that could be used in our classroom would be valuable

General

It really helps to know the dates for next year's MMEW by Jan 1st. Like to avoid vacation conflicts - missed two workshops due to late notice. Thanks.
Great benefit meeting other people as resources in helpful, too
I LOVE this opportunity!
Very well-run
Less focus on mining, more geology
Extremely Informative! I love these field trips/sessions. I always look forward to attend MMEW. Thank you for all the time and work your team put into this and planning!
I think you did great!
Keep it going

Future Meetings

T-Shirts :)
No blank back page for comments :(
Keep in northern MN
Offer T-shirts
T-Shirts :)
T-Shirt
MMEW T-shirts with MMEW logo :)
I think it might be better to have lectures on two half days followed by half days of trips. One straight day of lecture gets a bit intense.
Let's see Mesabi Nugget if they get in operation here in the cool/not too hot time of year.