



ReaL* Earth Inquiry Workshop: Information Packet & Tentative Syllabus

What to bring to the workshop:

- Digital camera and download cable;
- Laptop computer (if you're unable to bring your own, please let us know);
- Comfortable shoes & clothes;
- Water bottle, sunscreen and insect repellent;
- A rock (from exposed bedrock, if convenient)¹ or other natural specimen that's local to your school;
- Notebook;
- Your calendar/planner;
- Other tools, equipment, hardware or software that you have found useful in doing fieldwork or photography.
- You may also wish to bring a smartphone or tablet, though it is not required. Some suggested apps are listed in the sidebar on http://virtualfieldwork.org/PDPrep_SD.html. More suggestions may be added to the list as the workshop approaches.

We have some cameras and other extra materials. Let Don know if you would like to borrow a camera for the workshop.

Workshop Preparation

To be completed and emailed by 9:00 am, Friday, June 14, 2012

The information presented here is also available online at:

http://virtualfieldwork.org/PDPrep_SD.html

- ***For first time participants:***
Powers of Ten Google Earth Tour of your school: We first ask that you create a Google Earth Tour centered on your school based on the Eames film *Powers of Ten*. For an introduction, see: http://virtualfieldwork.org/Your_Own_Powers_of_Ten.html Or, go straight to the tutorials: http://virtualfieldwork.org/How_tos/How_tos.html If you're comfortable with Google Earth, this will probably take about two hours. If you need help, don't hesitate to contact Don at dad55@cornell.edu or via Skype at dugganhaas. The two key purposes of this task are to create a useful teaching resource and to provide some familiarity with a key piece of software we'll be using in our work together.
- ***For returning ReaL alum, do ONE of the following and send to Don by June 14:***
 - If it's been a while since you've worked in Google Earth, revisit it, and make some kind of enhancement to either your Powers of Ten or your local VFE.
 - Write a description of about a page describing what you hope to produce by the end of the summer.

* ReaL = "Regional and Local"

¹ If you're flying and only bringing carryon luggage, choose a small rock. Large rocks (weapon-sized) will lead to the need to check your bag!

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For all: Read the executive summary of *How Students Learn: History, Mathematics, and Science in the Classroom*. We'll discuss this the first morning of the workshop. Here are some things to consider as you read:

- How does how you learn compare to what the authors claim?
- How should research on learning inform how we teach?
- Note that the reading is not about whether people are visual or auditory learners. It's more about how you put information together in your head. How do you figure things out?

If possible, write a response to the reading and email it to us, but give the tasks above and the reading itself first priority. If you email it to us by June 13, we will provide some feedback on what you have written (and we will know you a little better from the start of the workshop). This task is intended to both bring this research to your attention and to bring the research to bear on our own teaching. As the reading describes, we are asking you to be metacognitive. We are emailing you the chapter and it can be downloaded from the National Academy Press website: http://www.nap.edu/catalog.php?record_id=10126 Scroll down to the link for the free executive summary.

Email Google Earth and reading response files to us at: dad55@cornell.edu

Real* Earth Inquiry Tentative Workshop Agenda

June 17 – 19, 2013

Badlands National Park

Kadoka High School

Introduction to the syllabus: Note that throughout the agenda we will be focused on a few big ideas and essential questions. The overarching question is: **Why does this place look like the way it does?** The *place* of the question will change as we move from site to site and as we make virtual visits to other sites. We will also give due attention to the follow up question: How do we know (or, why do we think so)? And we will ask many *what if* questions along the way (e.g., What if there was no convection?).

All of the questions raised in the agenda are topics for discussions, not lectures. Give them consideration at the beginning of each day and consider how they relate to the short readings we'll be doing along the way.

We enjoy working with our program participants and colleagues and collaborators. Each of us brings unique expertise to the program that others can and should benefit from. The Badlands Cohort will be our final and largest cohort of the program, and will involve more returning alumni than any program we have done so far. It looks to be an outstanding group of educators. We depend on the expertise within the group to enrich the program. If you see a colleague trying to figure out something that you know how to do, ask if assistance is wanted and help out if it is. If you have expertise to share with the whole group, don't hesitate to speak up.

* Real = “Regional and Local”

Accommodations Info:

We had a block of rooms held at the Badlands Inn, but the hold date is now past. You can likely still get a room at the Badlands Inn by calling Sonja Michaels at 1-800-455-3509 x7118, but I know some people had better luck with the Badlands Budget Host. For that, go to: <http://www.budgethost.com/>. The Budget Host is less expensive, at least now that the block of rooms at the Badlands Inn is gone. Some have expressed interest in camping as well. That's fine, though we might suggest you join us in the hotel lobby in the evening to do some online work. Apologies for the difficulties!

Monday June 17, 2013	
7:00 - 8:45 am	Breakfast (arrangements to be determined)
8:45 am	Leave motel (meet in motel parking lot)
9:00 am	Meet at Kadoka High School.
9:00 am	Welcome and introductions – you and your rock. <i>All</i>
9:30 am	Show and Tell (<i>Richard & Don + Program Alumni TBA</i>)
10:30 am	Break
10:45 am	The “ReaL Earth Inquiry Project” and Workshop Goals. <i>Richard</i>
11:15 am	What does good teaching look like? What does research say about how people learn? How should research on how people learn inform how we teach? What are the most important things for students to learn in Earth science? Introducing the big ideas framework. <i>Don</i>
noon	Lunch
1:00 pm	Fieldwork at Badlands National Park.
5:45 pm	Return to motel.
6:30 pm	Dinner (on your own)
After dinner.	Reflect on the day. Upload photos from the day to the web. What did you capture well? Short reading, to be determined.

Tuesday, June 18, 2013	
6:00 - 7:45 am	Breakfast (arrangements to be determined)
7:45 am	Leave motel (meet in motel parking lot)
8:00 am	Geoscience Recap & Today's Goals (location, TBD). <i>Richard</i>
9:00 am	Fieldwork at Badlands National Park.
Noon	Lunch
1:00 pm	Arrive back to Kadoka High School
1:15 pm	Talking Technology: Working with Picasa, Google, Prezi, and Skype products. <i>Don</i>
2:00 pm	Computer time.
5:00 pm	Dinner (on your own)
After dinner	Continued VFE work on your own.

Wednesday, June 19, 2013	
7:00 – 8:45 am	Breakfast (arrangements to be determined)
8:45 am	Leave motel (meet in motel parking lot)
8:55 am	Meet at Kadoka High School.
9:00 am	Final face-to-face work session
10:15 am	Break
10:30 am	<p>Planning for the months ahead: Setting goals and planning for how to meet them. What we hope will happen over the coming year. What does inquiry-based teaching look like? How will you convince skeptics that you teach through inquiry? Establishing working groups and planning times to “meet.” What are the two most important things for you to work on in your classroom this year? How will you do it? What evidence will you need to know you’ve done it? Will that evidence convince someone else? What kind of help do you think you will need to get there? Can we build teacher networks, and how can you take best advantage of the network of peers? <i>All.</i> Post workshop products:</p> <ul style="list-style-type: none"> • Collaboratively authored Badlands VFE • Individually authored VFE local to your school or institution • A strong educator network
12:15 pm	Complete evaluation.
12:30 pm	Adjourn the institute.



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