Teaching Fellowship 2015-16 Final Report

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This report describes activities during the 2015-16 academic year, engaging Alverno College students in museum exhibits on three separate occasions for three different classes. Approximately 45 students visited the museum as part of these scheduled visits, with additional visits in between and beyond the coursework. Beyond the term of the fellowship, additional visits (up to three each semester) are planned in semesters when the course is taught.

Activities to prepare for class visits

Throughout the fellowship, I had occasion to meet with Ellen Censky and Hillary Olson to gain a wider appreciation of the intent of this fellowship, the opportunities available to me and the students I serve, and the resources of the museum.

I also arranged meetings with Claudia Jacobson, Jim Kelly, Patty Burke, Chris Tyrrell, and Julia Colby. During morning coffee breaks and visits to the museum library, I have met and had informal conversations with many other staff and volunteers, including Larry Biesiadny, Ruth King, Chris Rundblad, Al Muchka, Dawn Scher Thomae, Kerri Hable, Margaret James, Dawn Koceja, Amanda Stopar, and Matthew Wooten. These conversations enriched my understanding of the expertise in the content of exhibits, connections to larger community efforts, and educational possibilities that link the museum to schools and colleges. Throughout my fellowship, Abigail Nickrant provided her perspective as a lifelong museum visitor, past intern, and former student.

In my update in January, I reported briefly on visits to the museum with classes. I included summary information from initial meetings with Claudia, Jim, and Patty, as well as attachments of the handouts provided to students. In this final report, I will again provide brief summaries of relevant conversations and handouts developed during the spring semester. These form the basis of museum experiences for students in my class moving forward.

In addition, by the end of the fellowship at least three additional projects have emerged. They include a catalog update for Sense of Wonder, the creation of a conceptual map of natural history exhibits, and the connection of exhibits and objects with the “findings” of visitors in the wider community. These projects may eventually form the basis of grant-funded summer or sabbatical research.

Activities from the spring semester

Starting in January, I visited the museum library and archives to gather additional background information about exhibits on the first floor, especially Sense of Wonder and Exploring Life on Earth. I gained a clearer understanding of how these exhibits were conceptualized in the mid-1990s, and what design factors took priority as funding was secured. Claudia Jacobson identified some initial folders and resources, and Ruth King provided invaluable assistance in locating boxes and binders from various collections.

By attending morning public lectures and staying for lunch in January, February, and April, I met museum staff and volunteers. I saw firsthand how their expertise reaches an important community of adult learners and how the generosity of that community helps to sustain the mission of the museum. Connections to the docents, especially at lunch, opened the opportunity to see how their approach to the visitor experience can enhance my own lessons for students. Larry Biesiadny has been particularly helpful.

In the midst of these conversations and in an attempt to provide a more comprehensive resource for my students to use around Sense of Wonder, I began to envision the catalog project mentioned above. Chris Tyrrell, Patty Burke, and Julia Colby took time to look carefully into several cases with me to identify objects and clarify what we see there. With lists from the archive, docents, and staff, my students were able to answer particular questions about objects they found intriguing, and they went farther in their research, developing narrative descriptions of issues around a few of those objects.

As one activity scaffolded into the next, I was able to envision how previous steps might more effectively prepare students in a developmental sequence. With this progression in mind, I redeveloped some of the handouts from the first semester to be used over the course of two or three visits to the museum in a single semester. In the end, sequential visits will provide precisely the kind of experience I first imagined when I applied for the fellowship. Along the way, the experience of trying and testing different approaches, then reading student work and getting their feedback, produced a valid plan for the next iteration of the course.

In addition to the three handouts created for class visits to the museum (included within this file), I also provide a longer document containing individual responses to a student self assessment of the final museum visit. Students chose to respond to one of seven questions, and all responses are included in this document. These self assessments are broadly representative of student experiences and have not been edited (Appendix A – separate file).

Also included as an attached document are samples of student work (Appendix B – separate file). In this assignment, students responded to the prompt outlined in the Class visit part 3. The samples represent the range of work students completed. Some examples are excellent in their detail and depth of connections across multiple exhibits. Others include minimal observations

and somewhat superficial links. All students met the criteria for the assignment, either in the written work they submitted or in the course of oral presentations and discussion held in class the week after their visit. I also created a transcript of that class period as evidence of their contributions. Student names are identified in that transcript, so I have not included it with this report.

Conclusions and next steps

Throughout the period of the fellowship, it has been extremely rewarding to share my experiences and news of this opportunity with colleagues at various institutions and local organizations, including: Michigan State University, Harvard University, MIT, Notre Dame, University of Puget Sound, Oregon State University, University of British Columbia, West Virginia Commonwealth University, Cardinal Stritch University, Milwaukee Area Technical College, University of Wisconsin-Milwaukee, University of Minnesota, Carthage College, Purdue University, University of Oklahoma, University College London, Discovery World, Milwaukee Public Library, and the Urban Ecology Center. It has been, by far, the most recognizable scholarly accolade during my career at Alverno, and those colleagues shared praise for the museum for initiating such a program.

I now have the materials in hand to bring students on multiple visits to the museum over the course of a semester, introducing them to the exhibits as a way of seeing natural history as an ongoing theme in science. They will be effectively directed to explore issues and objects through several dioramas and artifacts. They will explore and expand their own understanding of selected issues and objects, and will produce an interpretive presentation of what they find. As a result of this intensive period of building relationships and identifying resources, I feel qualified to teach adult learners in this space with confidence.

I anticipate cataloging additional materials for my own class use and plan to share my findings with docents, Amanda, Claudia, collections managers, and other staff. They have been generous with their time, and I look forward to returning that generosity. I also expect that these materials can be useful to other educators and possibly visitors in general.

Finally, I hope to remain engaged with other teaching fellows who have intersecting interests with my own. Together, I can see that we are developing best practices and new resources for working with adult learners.

Attachments

Class visit 1

BI 223: Natural History of North America

Collections of natural history, past and present in the Milwaukee Public Museum

This visit to the Milwaukee Public Museum serves multiple purposes. In examining the questions and activities outlined below, students will have opportunities to demonstrate nearly every outcome for the course (see the course syllabus). Coming in the second half of the semester, the visit also provides an opportunity to review a number of concepts and species we have studied thus far. Finally, students will be responding to a range of questions that will help the instructor prioritize the materials for future visits, estimate timing for each exhibit, and provide input on the usefulness and familiarity of certain exhibits and concepts.

Sense of Wonder

- Listen to the descriptions of this exhibit provided by Chris and Abigail. Record in your journal specific connections between what you see and hear and the reading you have done in the book by Farber.
- Consider your individual response to the following questions: Do you have or do you know anyone who has a collection you think could be displayed, even for a short time, for the public?
- Take 10 minutes to observe — one cabinet, one object/artifact, one organism. List observations and inferences.
- With your list of observations and inferences, walk away from the exhibit. You might find a nearby place to sit down. Take 10 minutes to write about observations in your journal. Include a sketch of what you see.
- Bring your list and short writing back to the class discussion near the Jeep.

Exploring Life on Earth

- Some of you may be familiar with the three dioramas to the west of the staircase.
    - Share what you know or remember hearing about them.
    - Listen to the instructor's account of their design and current status.
- Take ten minutes with a classmate or two. Examine the dioramas and see whether you are able to answer all of the questions that arise. Write your questions in your journal. Make note of questions you could not answer.
- Step across to the MPM research exhibits. Consider the following questions (include your answers in your journal):
    - How are different sciences represented in these labs?

- What are the points of intersection between scientific practice and scientific concepts? (How is doing science related to learning about nature?)
- Which of the exhibits is most interesting to you? Give reasons why it is.

Take a short break; you may have time to explore a couple of other exhibits briefly, but listen first for the time and place to reconvene with the class!

Wisconsin Woodlands

From the top of the escalator, continue past the bison exhibit and enter the Wisconsin biomes diorama area to the right. *Stay together* at first.

- Take a few minutes at each diorama.
- Look in the dioramas for examples of the species you have learned to identify. They are almost all there!
- Consider and write brief responses in your journal to the following questions about these exhibits:
  - What do you like?
  - What seems most realistic/authentic?
  - What gaps would you like to see filled?
  - How does this area function in exhibiting a collection?
  - How does it function as a representation of nature?
  - What are some themes discussed in this course that emerge here?
- The exhibit area continues through the entire second floor to include other biomes and cultures of North America. You can turn back when you get past the achaeology exhibit and broadleaf forest. Continue on if time permits to see the Southeast, Native Games, Southwest, etc. You can stay as long as you like. The museum closes at 5 PM.
- Before you leave (or by 1 PM if you choose to stay longer), share your answers with the instructors. They will wait at the top of the down escalator on the second floor, near the bison.

Attachments (continued)

Class visit 2

BI 223: Natural History of North America

Exploring Evolution at the Milwaukee Public Museum's Third Planet exhibit

During our discussion today, we will have the opportunity to consider the suggestion of Richard Dawkins, that people should "go to the museum" to see the evidence of evolution first hand and indisputably displayed. As we have examined throughout the semester, the theoretical basis of evolutionary biology and natural selection is thoroughly supported by a wide range of evidence. Whether the ultimate case for evolution (in response to creationist skepticism in particular) can be made by a visit to the museum is our final topic for conversation.

We will tour the "Third Planet" exhibit, stopping frequently to observe carefully the specimens and compare them. We will raise questions about the arrangement of exhibits and the story they tell. You should record observations and questions in your notes. Include reference to the timeline of geological history.

We will stop out of the Third Planet exhibit to consider the K/T boundary and the work of MPM scientists in supporting the astonishing asteroid crater hypothesis of extinction. That hypothesis, proposed by Luis Alvarez in 1980 was supported by fossil finds of Peter Sheehan, David Raup, Jack Sepkoski, and others.

As we reenter the Third Planet exhibit, we will focus on fossils of the Cenozoic Era, leading up to the present. Again, record observations and questions along with information that helps to fill out the timeline.

[This handout also included images of the geological time scale and timeline of major extinction events.]

If time allows, we will also look at the evidence for evolution in the display series in the "Rainforest" exhibit area.

Return to the Exploring Life on Earth and the Wisconsin Woodlands exhibits to examine further evidence of evolution in those dioramas as you become more familiar with their contents.

Attachments (continued)

Class visit 3

BI 223: Natural History of North America

Connecting objects and issues at the Milwaukee Public Museum

The final assessment integrates our work this semester in examining public perceptions of natural history and science and in considering the role of scientists in sharing their knowledge. The audience for this assessment will be visitors to the Milwaukee Public Museum.

Directions

Read the recent *New York Times* article[1] that describes one author's view of the the value of natural history museums.

- Your project will involve either an issue[2] or an object[3] directly related to biology, natural science, or the environment. You can make your choice at the museum.
- If you are familiar with exhibits at the museum, you might identify an issue that is addressed in the museum prior to our visit, or a particular object that would require that its story be told. In either case, there are some initial activities we will do together when we arrive.
- Once you have selected your issue or object, your task will be to seek out alternative ways of telling a story that includes a museum exhibit in its present or potential form. The story should connect your audience with the issue or object. Answer the questions below to ensure that you have made a reasonable selection. Share your answers to those questions with a classmate and with the instructor.

    1. *Your preparation.* Describe what you typically expect to get out of a visit to a museum (focus on natural history or science museum experiences, unless this is your first visit). What do you do to prepare? How does your preparation vary from one visit to the next?
    2. *Relations.* How does the issue or object you have selected relate to other exhibits, dioramas, or objects in the museum? There are many possible connections and relations you might describe. Choose at least three connections that are meaningful, and describe them briefly.

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[1] http://www.nytimes.com/2016/04/03/opinion/ournatural-history-endangered.html

[2] You can choose your own based on your interest and what you find. Possibilities include rainforest destruction, invasive species, climate change, genetically modified organisms, water treatment and quality.

[3] This could really be anything, but a good choice will be something that inspires your curiosity, something about which you want to learn more and more. It might be something you have never heard of or examined before. Be careful not to limit yourself to something familiar, as that may be bounded by your prior knowledge.

3. *Audience.* Does the issue or object you selected have an obvious audience? Is there a particular age group or interest that seems to be specified by the way the issue or object is presented? If so, describe ways that might expand the audience. If not, describe how the issue or object might be identified and described more effectively if a particular audience was targeted?

- Do some additional reading and research. Keep track of the sources you identify (APA format, always) and describe the issue or object in as much detail as you think is necessary for the audience you have identified. Summarize what you have found in a brief document.
- Give some thought to how you would format and share this document. Again considering your audience, decide what you think would be the most appropriate and meaningful way of sharing what you have found.
- For the last week in class, bring a draft of your document. Be prepared to share what you have found and how you have decided to share it. Expect that your classmates will have some other ideas. You might find that their ideas inspire you to think differently about your project, and likewise you might inspire them to think differently about theirs. In the course of our sharing in that final week, you will decide how close to complete your project is. Depending on what you have done prior to that point, and how your effort has brought closure to the project, you might be done. Or in the process of seeing other projects, you might decide some additional detail or insight should be added. There will be time to do that.
- In class on the final day, you will complete a brief self assessment of this project. On the self assessment, you will indicate whether the project is complete, or what steps remain to be completed, or where the project has taken you on a continuing path. Depending on the responses to the self assessment, you will be directed to hand in, upload, or continue your work.

Attachments (continued)

BI 223: Natural History of North America

Self Assessment: Science and Public Understanding of Natural History

Last week at the Milwaukee Public Museum you began to explore and explain an issue or object in order to practice sharing scientific concepts to the public.

Self Assessment

Answer the questions below, with examples that relate to the work you did in the museum and after our visit.

1. In what ways was the document you created effective in sharing information about the issue or object you chose? Give an example of the document's effectiveness in our conversation today.

2. Did the audience you imagined for sharing this document include your classmates, someone else, or a combination? Describe the educational background and interest level of the audience you envisioned.

3. Briefly describe the process you followed for researching the issue or object you chose. What kinds of sources were most helpful, and where did you get stuck (what other resources do you need)?

4. To what extent do you think you were effective in sharing information about the issue or audience you chose? Compare what some of your classmates came up with in order to consider what might have been even more effective. In that comparison, identify possible additions or revisions you might make in your work.

5. How has your experience in senior seminar shaped the work you were able to do on this project? Reflect on any frameworks, approaches, or insights that you made particular use of as a result of this course.

6. Given our discussion today, how close to "complete" do you think your project is? As you answer, recognize that it is unlikely that any of these projects, in a single week, could really be considered complete, so think instead about the ways the project might expand and be improved.

7. If time and opportunity allow in the coming months, how likely would you be to continue a project related to the work you did with this one issue or object? Describe your interest in relation to other priorities.