

**ES/HI S24 Innovations in Mapping: From Paper to Pixels**  
**Bates College Short Term 2016**  
**Professor Katie McDonough**

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Office hours MW 2-3pm in Pettengill 111 (or by appointment)

Monday 10-11:55am and 1-1:55pm in Pettigrew 300

Wednesday 10-11:55am and 1-1:55pm in Pettigrew 300

Thursday Variable times am and pm (on campus meetings in Pettigrew 301)

Hello Mappers!

You are participating in an experiment in taking History **out of the classroom and into the field**. You will be going where few students have gone before! During this 5-week course on the history of mapping, you will step into the shoes of surveyors, spatial theorists, state leaders, government organizations, and international non-profits. Our labs are based around recreating the historical practices that these people used to make, evaluate, and distribute maps and geospatial data.

Rather than just a course about maps, the emphasis in this course is on *mapping*. It focuses on the human choices and practices that are behind every map. As we begin in the early modern period and shift to the modern there will be some common threads around mapping practices that will connect our investigations. These include the (often related) issues of:

- Labor (who maps, why, and under what conditions)
- Power (secrecy, security, ownership, patronage, influence, legitimacy, etc.)
- Design (for example, What does and does not appear on a map?)
- Purpose (intended and unintended)
- Audience (maps as tools for learning, maps as objects that are analyzed)



Figure 1. Eartha at Garmin/Delorme in Yarmouth, Maine.

In the first two weeks of the course, you and your fellow mappers will be “living” in the eighteenth century and early nineteenth century. Our case study is the creation and impact of the first national survey in the west, the Cassini map(s). The men involved in the Cassini project (over 4 generations) were among those asking and answering the most intriguing “map questions” of their day: *How do we measure an entire kingdom? What rate of accuracy is important? What features belong on a national map? Who owns the data survey teams collect?* By diving into the maps themselves as well as texts written by English admirers and collaborators of the Cassinis, we will relive and reflect on the

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experience of making a national map from scratch. Our focus on the world of the Cassinis will be contextualized during a visit to the Osher Map Library at the University of Southern Maine.

In the third week, we will begin our transition to modern mapping. We will embark on a series of labs that will situate you in the world of GIS, web-mapping, and remote sensing. Through engagements with historians, forestry surveyors, humanitarian and community mappers, and designers, you will have several opportunities to begin thinking about the shape of your final project. We will do a site visit to the University of Maine-Orono, hear from the GIS staff of Auburn, and video conference with experts around the country/world.

Welcome to the course!

Learning goals:

- Develop an **understanding** of the history of making and using maps since the early modern period.
- Re-create historical mapmaking practices in surveying and drafting **labs**
- Reflect on how **experiential** learning changes your understanding of the past
- Make **connections** between challenges faced by mapmakers and users of the 18<sup>th</sup> and 21<sup>st</sup> centuries
- Discover the **complexity** of map-related industries on local, state, national, and international scales
- Document our collective learning experiences on a **website** to preserve this knowledge and inspire future mapping projects for the Bates and local Maine communities.

Major Assignments:

5%	Graphometer Lab	10%	Osher Reflection
5%	Sextant Lab	10%	Orono Reflection
10%	Triangulation Lab		
10%	Google/GIS Lab 1-4 (2.5% each)	20%	Final Project
10%	Fieldpapers/Open Street Maps Lab	10%	General Course Participation and Attendance
10%	Historypin Lab		

*Your course participation grade is not based on providing the “right” or “wrong” answers during discussions, but on following the general rubric:*

- A student who receives an A for participation typically comes to every class with questions about the readings in mind. This student engages others about ideas, respects the opinions of others, and consistently elevates the level of discussion.
- A student who receives a B for participation typically does not always come to class with questions about the readings in mind, often preferring to wait passively for others to raise

interesting issues. Some discussants in this category, while courteous and articulate, do not adequately listen to other participants or relate their comments to the direction of the conversation.

- A student who receives a C for participation attends regularly but typically is an infrequent or unwilling participant, or a discourteous one.
- A student who fails to attend regularly or prepare adequately for class risks the grade of D or even F.

*Consistent attendance* is a requirement for success in this course. Should religious holidays or valid College-related activities interfere with class time, **email me as far in advance as possible of the absence and we will develop a plan to keep you on track**. If advance notice is not possible (sudden illness, family emergency, etc.), it is still your responsibility to **get in touch with me as soon as possible** to arrange to make up missed work.

Two unexcused class absences will jeopardize your enrollment in the course. Three late arrivals/early departures = one absence. If you are extremely late or leave early, you will be counted absent. Please talk to me after class if you arrive late.

\*For each assignment, you will receive a detailed assignment sheet. These will also be posted on Lyceum.

*Lab Reports* (each group hands in 1 report, with exception of individual reflection contributions)  
Specific details for each lab will be handed out, but they will follow this general format:

- Description and analysis of materials and method
- Presentation of final results in hard copy & digital format (as a map, write-up of data, etc.)
- Reflection on challenges, process, and overall experience (about 200/words per person)
- Due at the next class meeting.

*Site Visit Reflections* (individual)

- 500 words reflecting on some thing you learned/became curious about during the visit related to the history of mapping

*Final Project* (in groups of 2 or 3)

- **Proposal** due in class on May 19 – 200 word statement of 1) your project aims, 2) how it relates to course themes, and 3) how you will divide labor within your group
- 3 options:
  1. Write a 1000-word argumentative essay that explores in more depth one **mapping practice/company/group** we have encountered in this course. If you would like to write about a topic related to mapping that you feel equipped to undertake based on previous knowledge, but that we have not covered in class, you must discuss this with me before May 18.

2. Write a 1000-word essay that is a argumentative analysis of one **map** and the practices behind its creation and use. This can be any map you feel prepared to analyze based on our coursework.
  3. Write a 1000-word **lab** for one of the tools we encountered that you would like to provide for the Bates or Maine community. The lab should be accessible to beginners. The lab should include the following sections: introduction, lab goals, materials, background knowledge necessary, time required, procedure, end-of-lab questions, list of useful contacts and resources.
- All final projects will be uploaded to our course website on May 26. Please prepare a brief **abstract** of your project for the website.

What do I mean by argumentative? → It should have a thesis statement that demonstrates you are answering a research question about a specific, narrow topic. (For example, the research question "How has the digital theodolite transformed topographic surveying?" could be answered by a thesis statement that demonstrates how you are taking a position on the question in relation to already existing research.

#### General writing guidelines:

- Always include your name on your work (and in title of any digital file)
- Times New Roman/Times font, size 12
- 1-inch margins
- Double-spaced text
- When you cite materials, please use Chicago footnote style. (Examples here: [http://www.chicagomanualofstyle.org/tools\\_citationguide.html](http://www.chicagomanualofstyle.org/tools_citationguide.html))
- For advice about writing a paper for History, check out the following: Mary Lynn Rampolla, *A Pocket Guide to Writing in History* (any edition, the 8<sup>th</sup> is the most recent)
- Writing@Bates has a great guide to citation practices and working with sources in general: [http://www.bates.edu/writing/files/2011/06/Guide\\_to\\_Working\\_with\\_Sources\\_August\\_2013\\_print.pdf](http://www.bates.edu/writing/files/2011/06/Guide_to_Working_with_Sources_August_2013_print.pdf)
- Other questions about writing in History? Let me know! You can always reach out to the folks at Writing@Bates with questions too: <http://www.bates.edu/writing/for-students/>

#### Materials:

- Jerry Brotton, *A History of the World in 12 Maps* (Viking, 2012)
- Mark Monmonier, *No Dig, No Fly, No Go: How Maps Restrict and Control* (Chicago: University of Chicago Press, 2010)
- Graphometer – 1/group to be purchased at Bates Bookstore (ONLY available here)
- Sextant (already ordered, 1/group)
- Protractor (1/group, available at bookstore)
- Drafting paper (a few sheets/group, available at bookstore)
- Pencils and a good eraser
- Dedicated notebook for labs

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- Dedicated notebook/note-taking system on your computer for class notes
- Mapillary app (as many as possible in the class, not required)
- Optional: Theodolite app (depends on final project preferences)

#### Technology:

In this course, we will use a variety of tools for reading and writing. I encourage you to use a dedicated notebook for in-class notes and some writing. Laptops/tablets are allowed for note-taking in class, but this privilege will be revoked if abused. Our classroom is an active community that requires your focus. Out of respect for your peers and in the interest of your ability to develop as a writer, please carefully note these practices.

#### Keeping track of notes/references:

I recommend developing a system for keeping track of your notes for each class session. If you do not already have a system that works for you, here are some ideas:

- Evernote is useful for combining notes that you type with analog notes (take photos of your handwritten notes, other documents, etc.)
- Zotero is an open source bibliographic management system that can also function well for notetaking (I use this to manage my reference for books and articles + notes for those items)
- Text files or google docs for each class session with a good filing system for keeping them organized

#### Expectations for students:

- Attend every class session.
- Come prepared to every class session, having completed all reading and writing assignments.
- Meet all due dates for written work, including drafts and revisions.
- Show up on time for all meetings with questions about how to improve your work.
- Participate in classroom activities including peer review, discussions, and other reading and writing activities.
- Approach the work of the course with the habits of mind critical for success at the college level: intellectual curiosity, openness to new ideas, critical engagement, and creativity.
- Communicate in a timely manner with me about any issues related to the course.
- NO CELL PHONES ALLOWED in class or during exams.

#### What you can expect from me:

- Feedback on written work within 3 days of submission.
- Available for meetings during office hours and by appointment.
- Lecture slides posted to Lyceum after the lecture is delivered in class.
- Comments on your course participation after your discussion leadership experiences.

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#### Writing @ Bates and Library Support:

I encourage all students to make use of Bates' excellent Writing Specialists (@ Coram) and Peer Writing Assistants (@Ladd Library). Go early and go often! Writing Specialists and Assistants can help you refine a topic, develop brainstorming techniques, map out an argument, or consider stylistic questions like sentence and paragraph form. Don't wait until you have a finished draft!

<http://www.bates.edu/writing/>

At Ladd Library, Christina Bell is our research specialist in History: [cbell@bates.edu](mailto:cbell@bates.edu)

<http://www.bates.edu/library/research-services-staff/>

Check out the History Research Guide:

<http://libguides.bates.edu/history>

#### Contacting Me:

Feel free to talk to me informally with questions when you see me around campus. I am here to answer your questions and prefer to tackle complex issues in person. You may see me in my office hours or make an appointment via email or BatesReach to talk. In your email, please describe why you would like to me and provide a few times when you are available. I will respond to emails within 24 hours. If you have a particularly urgent question/request, please indicate this in the subject heading.

#### Students with Documented Needs:

Please address any special needs or special accommodations with me at the beginning of the semester or as soon as you become aware of your needs. Those seeking accommodations based on learning differences or disabilities should contact the Dean of Students office in Lane Hall.

#### Academic Honesty:

Part of this course entails familiarizing yourself with the rules and conventions of academic integrity used by historians (and, more broadly, scholars in the humanities and social sciences). There are two main points to internalize: 1) The work you submit must be your own and 2) You are responsible for acknowledging/citing any ideas, information, or resources used in coursework that are not your own.

All work in this course is subject to Bates' Statement on Academic Integrity:

<http://www.bates.edu/student-affairs/student-conduct/academic-integrity-policy/>

Failure to abide by any of these principles will result at a minimum in having to do the assignment over again and could entail a failing grade for the assignment, or even for the course, depending on the severity of the infraction. Faculty-imposed sanctioning is independent of any ruling by the Dean of Students or the Student Conduct Committee.

Schedule:

\*This schedule will be updated as needed. The latest version will always be available at the top of our Lyceum page.

[L] = materials available on Lyceum

Monday, April 25

10-12 Introduction

1-2 Map Icebreakers

Homework for 4/27: Read Jerry **Brotton**, *A History of the World in 12 Maps* (New York: Viking, 2012), chapters 1 (Ptolemy) and 7 (Toleration/Mercator) and Matthew H. Edney, "**Mapping, Survey, and Science**," Chapter 12 in the forthcoming *Routledge Handbook of Cartography* (2016) [L]

Wednesday, April 27

10-12 The Cassini Dynasty and the Scientific Revolution

1-2 Discussion of Brotton and Edney readings

Homework for 4/28: Read J.B. Harley, "**Silences and Secrecy**: The Hidden Agenda of Cartography in Early Modern Europe," in *The New Nature of Maps: Essays in the History of Cartography*, ed. By Paul Laxton (Baltimore: Johns Hopkins UP, 2001), 83-107 and Edney, "**The Rise of Systematic, Territorial Surveys**" Chapter 13 in the forthcoming *Routledge Handbook of Cartography* (2016) [L]

Thursday, April 28

Osher Map Library FIELD TRIP – meet in Pettigrew 301 at 10am to prepare for departure. Return to campus ~5pm

Homework for 5/2: Write Osher Reflection and read Edney entries for *History of Cartography* vol 4 on "**Geodesy** and the Size and Shape of the Earth," "**Meridians**, Local and Prime," and "**Geodetic Surveying** in the Enlightenment" [L]

Monday, May 2

*Osher Reflections due 10am*

10-12 Geodesy and Surveying Discussion

1-2 Graphometer Lab

Homework for 5/4: Build Sextant and read Ken Alder, *The Measure of All Things* (New York: Free Press, 2002), chapters 1 & 2 [L]

Wednesday, May 4

10-12 Mini Lecture/Sextant Trial

1-2 Graphometer Lab

Homework for 5/5: Complete Graphometer Lab

Thursday, May 5

**Graphometer Lab Reports due 10am**

10-11 Planetarium lat/long demonstration (**meet in Carnegie lobby with sextant**)

11-12 Sextant lab continued/Triangulation Prep

Homework for 5/9: Complete Triangulation Lab and Report, read **USGS Circular 1050 (sections noted on Lyceum entry)** and Mark Monmonier, *How to Lie with Maps*, chapter 9 (pages 123-138) [L]

Monday, May 9

10-12 Triangulation Group Work/**Sextant Work at 11:30**

1-2 USGS History Discussion

Homework for 5/11: *Programming Historian* Geospatial Lessons 1&2

Wednesday, May 11

**Triangulation Lab Report due 10am**

10-12 Ladd Special Collections visit/Programming Historian Discussion about Lessons 1&2

1-2 Thinking Spatially Discussion (w/Sam Boss from the Harvard Center)

Homework for 5/12: *Programming Historian* Labs 3&4 and read Anne Kelly Knowles, "**GIS and History**," in *Placing History: How Maps, Spatial Data, and GIS are Changing Historical Scholarship*, ed. By Anne Kelly Knowles (Redlands, CA: ESRI Press, 2008), 1-25 [L]

Thursday, May 12



ORONO FIELD TRIP – meet in parking lot between Pettengill and Commons at 7:30am. Return to campus after dinner in Orono (done with meetings in Orono at 4pm).

Homework for 6/16: Write Orono Reflection, Finish Programming Historian Lab Report, Read “**Neogeography** and volunteered geographic information: a conversation with Michael Goodchild and Andrew Turner,” *Environment and Planning A* 45 (2013): 10-18 [L], and review these websites: <http://www.openstreetmap.org/>  
<http://fieldpapers.org/>  
<https://hotosm.org/>  
<http://www.missingmaps.org/>  
<http://cadasta.org/>

Monday, May 16

**Sextant** and Programming Historian Lab Reports due 10am

Orono Reflection due 10am

10-12 Orono recap/USGS History/OpenStreetMaps and Missing Maps

1-2 Fieldpapers/Open Street Maps Lab w/Stamen Design and Sustainable Bates

Homework for 5/18: Work on Fieldpapers Lab, Read “**Historypin in the Community**” (2014) [L] and **Brotton**, chapters 10 (Geopolitics) and 11 (Equality)

Wednesday, May 18

Fieldpapers Lab Reports due 10am

10-12 Fieldpapers Lab Continued/Brotton Discussion/Historypin Prep

1-2 Historypin Videoconference

Homework for 5/19: With your partner, decide on a final project and write up a brief proposal to share with the class on Thursday afternoon.

Homework for 5/23: Read Mark **Monmonier**, *No Dig, No Fly, No Go: How Maps Restrict and Control* (Chicago: University of Chicago Press, 2010), entire book (*plan ahead and read over the week and weekend!*)

Thursday, May 19

10-12 Historypin Lab continued

1-2 Final Project Proposals Due/Historypin Lab continued

(Remember to read the Monmonier book for Monday.)

Monday, May 23

*Historypin Lab Reports due 10am*

10-12 Monmonier discussion and Final Project activity

1-2 Wordpress workshop for course website/Historypin recap (TBC)

Homework: Read Edney, "**Map History**: Discourse and Process," Chapter 5 in the forthcoming *Routledge Handbook of Cartography* (2016) and Rob Kitchen, Chris Perkins, and Martin Dodge "**Thinking about maps**," in *Rethinking Maps: New Frontiers in Cartographic Theory* (London: Routledge, 2011) [L]

Wednesday, May 25

10-12 Videoconference with Cadasta (TBC)/Fieldpapers recap

1-2 Final Project peer review activity

Homework: Read Amy K. Lobben, Megan Lawrence, and Robert Pickett, "**The Map Effect**," *Annals of the Association of American Geographers* 104, no. 1 (2014): 96-113 [L]

Thursday, May 26

10-12 Final discussion and website tweaking

4pm (TBD) Website unveiling party