Geog 5110

Research Design and Geographic Applications
Dr. Murray Rice

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• Important announcement about next class
  – Next week is Labor Day: no class on Sept 5
  – On Sept 12, we will meet for that class only at the Willis Library, room 136 (door immediately to the left when you come in the main entrance)
  – This is our library resources session, coordinated by the librarian assigned to our geography department students and faculty
  – Bring library-related questions about your research, if you have any

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• For all other class details, see the syllabus
  – Let’s take a quick look through it now

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  – Note my office hours: Tuesdays, 2-4pm
  – The class webpage is also another important place to get course resources throughout the semester
  – www.geog.unt.edu/~rice/geog5110/

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• This class is an introduction to geography as a research field, addressing questions such as:
  – What is geography?
  – What kinds of research do geographers do?
  – How do geographers do research?
  – What do you need to know in planning your own research in geography?

Also see the R:\CSAM\class\5110 drive on the CSAM computers for PDF copies of all readings and sample research articles
• But before we move along to these topics, I want to introduce you to Dr. Murray Rice
  – My education
  – My work background
  – My current research

• I think it is also important that you understand the philosophy behind this course in particular

• Focus of the course: getting you ready to write a complete research plan
  – Because of this focus, I am setting aside some time each week for you to guide the discussion
  – Ask questions based on your research and research plans
  – I hope some of this open discussion will relate to the weekly topics, but it doesn’t have to

• A couple of key points related to course expectations and our practical, “hands-on” focus:
  1. You need to participate in class discussions (this is one element you will be graded on)
  2. In order to participate, you need to do the reading and all other work assigned each week: preparation is crucial
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- **Assertion**: what you believe shapes what you do (both as a researcher and as a person)
  - In other words, your actions follow from how you see the world
- **My question for you**: What do you believe about the world?
  - I think it is important for you to give some thought to what you believe and what motivates you

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- Example of connection between beliefs and research: the “Scablands” region of Washington State
  - Map of the Region
  - **Dry Falls**
  - **Upper Grand Coulee**
  - **Steamboat Rock**
  - **Lake Lenore**
The scablands have some of the most interesting physical geography you will see anywhere on earth. We will view a brief video introduction to what's so interesting about this area.

**PBS Video: Mystery of the Megaflood**

In brief, some key points about how science developed an understanding of the origin of the area:

- **Glaciation** fits some of the area's features, such as the broad valleys and the scatter of large boulders (“erratics”) we see here.
  - **Problem:** other evidence shows that glaciers did not cover this area.

- River processes fit other features, such as the “pot holes” we see in the area.
  - **Problem:** typical pot holes generated by large rivers (e.g. the Mississippi or Columbia rivers) can be 1 to 2 feet deep, but some left in the scablands are more than 20 times bigger than that.

Regardless of these problems, the view of earth scientists up to the 1920s was that long-term process caused what we see. This came out of the beliefs of the scientific community that “this is how landscapes evolve” – gradually.

All of this was challenged in the 1920s by a geologist named J. Harlen Bretz.
- Based on field observation and his own theory-building, Bretz proposed that a single, sudden, catastrophic flood shaped the region.
- **Problem:** the Earth science community forcefully rejected Bretz’s idea in 1927 (that can’t be right!)
- However, findings coming over the next decade supported Bretz, and his theory was accepted.
A few references related to Bretz’ work:

Most recently, Bretz’ ideas have become the focus for National Park Service development of a “National Geologic Trail” (really a system of trails across the region)

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Take-away lessons from this example
- 1. beliefs (“landscapes emerge from long-term processes”) are a powerful part of science
- 2. beliefs in science need to be constantly challenged, but thoughtfully so
- 3. Bretz’s scablands research provides a good example of a scientist who let the evidence lead him to a logical conclusion

Let’s get away from that specific example and think about geography/earth science in a broader context
- Q: What do geographers study? How lengthy and varied a list can we compile here?

Geographers make a connection between the idea of geography (what it is) and how we can solve problems with it (how it can be used)
- One of our geography faculty, Dr. Chetan Tiwari, does a great job of explaining this very concisely in this “5 Minute Talk”