ATM 413: Weather, Climate Change, & Societal Impacts

Key Due Dates:

3/2 – Topic Selection
3/30 – Part I
4/30 - Part II
5/4 to 5/9 – Presentations

Topic Selection:

The topic of the paper is of your choosing, but it must be related to weather, climate, or the environment and the corresponding impacts on society (a sample list of topics from past students is given at the end). Choose something that interests you and that you want to learn more about. Do not feel limited by what we’ve already covered in class. Once you decide on a topic, please e-mail me your topic. If someone else has already chosen the topic, then you will have to choose another one.

You are required to turn in (~1 page):

- A couple sentences describing your topic
- A list of possible resources on both the science and societal impacts of your topic to demonstrate that you have done some digging around
- Whether you have written about this topic as part of a project or term paper in a past or current class. If so, state which class. This is OK, as long as you extend your topic to include societal impacts.

Part I:

The first part of the paper should consist of an overview of the science of your topic, keeping in mind that you will need to link some aspects of the science to how it impacts society in the second part of the term paper. Hence, you should focus on what aspects of the science are most important to understand.

This section should be about 5–7 pages (1.5 spacing, 12 pt. font), not including figures and references. Figure and/or tables are important to include, because it is always easier to frame a story around your visual content. Please use a standard reference format (e.g. MLA), and put your references at the end.

You are expected to generate at least one original graphic. You are encouraged to draw experience and tools from other classes you have taken, e.g. using GEMPAK, IDV, Python, GIS, and/or a PowerPoint schematic illustrating an aspect of your topic.
Part II:

The second part of the paper should consist of an overview of the societal impacts of your topic. You should be seeking to link aspects of the science portion in Part I with the impacts you describe in Part II as much as possible. You may speculate on linkages by using reasonable scientific deduction and explaining how you would go about investigating such linkages.

The same page and formatting requirements apply.

While relevant figures and/or tables are again important to include, you do not have to generate an original graphic for Part II.

Presentation:

At the end of the semester, you will give a 15-minute presentation about your topic to the class that will present an overview of the science, societal impacts, and linkages between the two. A good strategy is to “tell a story,” using the figures from your paper, and only include the most pertinent information.

Sample Topics from Past Students:

*Severe weather outbreaks (tornados, derechos, hail...)*
*Hurricanes (Andrew, Katrina, Sandy, ...)*
*Blizzards (Storm of the Century, Blizzard of ’78,...)*
*Ice storms*
*Wildfires*
*Space weather*
*Frost and agriculture*
*Paleoclimate and effects on past societies*
*Climate change (current and future changes in sea level, cryosphere, ...) and policy*
*Seasonal climate of international countries*
*Droughts*
*Floods*
*Heat waves*
*Wind, solar, or other alternative energies*
Rubric for Term Paper (Part I)
ATM 413

Content (60 points)

• Introduces the topic and motivation for studying it
• Discusses the meteorological/climatological background sufficiently
• Includes relevant statistics, graphics, and tables to support meteorology/climatology

Organization & Aesthetics (30 points)

• Writes coherently and logically
• Uses correct grammar and spelling
• Provides labels and captions for graphics and tables

Use of Sources (10 points)

• Connects to in-class material if applicable
• Uses varied and reliable references
• Includes citations in text and as footnotes, endnotes, or a list of references
Rubric for Term Paper (Part II)
ATM 413

Content (60 points)

• Provides a transition between the first and second parts of the term paper
• Discusses the societal impacts sufficiently
• Links societal impacts with the science
• Shows evidence of critical thinking in linkages and plausible ways of exploring linkages further
• Concludes with a summary of key findings

Organization & Aesthetics (30 points)

• Writes coherently and logically
• Uses correct grammar and spelling
• Provides labels and captions for graphics and tables

Use of Sources (10 points)

• Connects to in-class material if applicable
• Uses varied and reliable references
• Includes citations in text and as footnotes, endnotes, or a list of references
# Rubric for Presentation

ATM 413

<table>
<thead>
<tr>
<th></th>
<th>Deficient</th>
<th>Fair</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content (4)</strong></td>
<td>• Lack of weather/climate content</td>
<td>• Addresses both weather/climate and societal impacts content but there are weaknesses in either or both.</td>
<td>• Substantive weather/climate content</td>
</tr>
<tr>
<td></td>
<td>• Lack of societal impacts content</td>
<td>• Weakly addresses linkages between weather/climate and societal impacts content</td>
<td>• Substantive societal impacts content</td>
</tr>
<tr>
<td></td>
<td>• No linkage between weather/climate and societal impacts content</td>
<td></td>
<td>• Strong linkage of weather/climate and societal impacts content</td>
</tr>
<tr>
<td><strong>Organization (2)</strong></td>
<td>• Disorganized and unpracticed</td>
<td>• Disorganized in areas</td>
<td>• Clear, well-organized presentation (it &quot;tells a story&quot;)</td>
</tr>
<tr>
<td></td>
<td>• Material is uneven and confusing</td>
<td>• Material has abrupt transitions or omissions but can be generally followed</td>
<td>• Material flows well and unknown terms defined</td>
</tr>
<tr>
<td></td>
<td>• Unable to answer questions</td>
<td>• Answers questions but in a confusing manner</td>
<td>• Prepared for questions</td>
</tr>
<tr>
<td><strong>Aesthetics (2)</strong></td>
<td>• Contains many spelling/grammar errors</td>
<td>• Some spelling/grammar errors</td>
<td>• Clear, easy to read slides</td>
</tr>
<tr>
<td></td>
<td>• Absence of effective graphics, supplemental text, and labels</td>
<td>• Graphics are inconsistently or not labeled but in general are ok</td>
<td>• Effective use of graphics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Slides may be difficult to see in spots</td>
<td>• Consistent layout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Excellent balance between text and graphics</td>
</tr>
<tr>
<td><strong>Sources (2)</strong></td>
<td>• Lacks appropriate references</td>
<td>• Some incomplete or omitted references</td>
<td>• Frequent, reliable references to support presentation</td>
</tr>
<tr>
<td></td>
<td>• Lacks evidence of a relevant literature review</td>
<td>• Limited use of outside sources</td>
<td>• Use of outside sources evident</td>
</tr>
</tbody>
</table>