

Capstone project: written report

Dr. Roger Graves
Professor, English and Film Studies
Director, Writing Across the Curriculum

Centre for Writers



Writing Initiatives
University of Alberta



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- [Resources](#)
- [Other Writing Centres](#)
- [WAC](#)
- [WRS](#)
- [Writing Initiatives](#)

[Home > Home](#)

Welcome to the Centre for Writers

We offer free writing support to all students, instructors and staff at the University of Alberta – in any subject, discipline, program, or project at any stage of the writing process

To **BOOK, CHANGE, or CANCEL APPOINTMENTS, please click [HERE](#)**

This website also offers style manuals, dictionaries, ESL/EAL resources, writing handbooks, and discipline-specific writing resources

C4W will be open during the Fall Term (September 20 - December 10):

Monday to Thursday : 10:00AM – 7:00 PM
Friday : 10:00 AM – 5:00 PM

Professors/Instructors: request a classroom visit by a tutor.

Are you a U of A student? Do you want to work as a tutor at the Centre for Writers next year? Click [here](#) for more information!



<http://www.c4w.arts.ualberta.ca/>

The writing process: 3 keys to success

Getting started

- Explore the assignment
- Make rough notes
- Pick a tentative topic

Getting feedback

- Make an appointment at the centre for writers
- Get feedback on your draft/revise

Revising

- Work on style and lower order concerns
- Proofread, consult checklist for assignment

The written report

- 🌐 The purpose of the report is to clearly **communicate** the results of the student's investigation to a scientifically literate audience.
- 🌐 **explain** the topic under consideration in a clear, concise and interesting manner
- 🌐 demonstrate **synthesis** of the information presented
- 🌐 audience is scientifically literate, but not experts (you)

Genre



Not a scientific research report or lab report



OK, what is it?

THE COMING MEGAFLOODS

Contents

TEN MISSISSIPPI RIVERS, ONE MILE HIGH
SUDDEN DISCOVERY
A MEGAFLOOD EVERY CENTURY?
DISASTERS MORE LIKELY
TIME TO PREPARE
IN BRIEF
TIMELINE
California Megafloods, Every Two Centuries
Rivers in the Sky
Origin
Duration
Buoyancy
Orientation
Precipitation
Vapor Transport
GLOBAL CONCERN
All West Coasts Can Be Hit

Listen American Accent

Section:
CLIMATE

Huge flows of vapor in the atmosphere, dubbed "atmospheric rivers," have unleashed massive floods every 200 years, and climate change could bring more of them

THE INTENSE RAINSTORMS SWEEPING IN FROM the Pacific Ocean began to pound central California on Christmas Eve in 1861 and continued virtually unabated for 43 days. The deluges quickly transformed rivers running down from the Sierra Nevada mountains along the state's eastern border into raging torrents that swept away entire communities and mining settlements. The rivers and rains poured into the state's vast Central Valley, turning it into an inland sea 300 miles long and 20 miles wide. Thousands of people died, and one quarter of the state's estimated 800,000 cattle drowned. Downtown Sacramento was submerged under 10 feet of brown water filled with debris from countless mudslides on the region's steep slopes. California's legislature, unable to function, moved to San Francisco until Sacramento dried out -- six months later. By then, the state was bankrupt.

A comparable episode today would be incredibly more devastating. The Central Valley is home to more than six million people, 1.4 million of them in Sacramento. The land produces about \$20 billion in crops annually, including 70 percent of the world's almonds -- and portions of it have dropped 30 feet in elevation because of extensive groundwater pumping, making those areas even more prone to flooding. Scientists who recently modeled a similarly relentless storm that lasted only 23 days concluded that this smaller visitation would cause \$400 billion in property damage and agricultural losses. Thousands of people could die unless preparations and evacuations worked very well indeed.

Was the 1861-62 flood a freak event? It appears not. New studies of sediment deposits in widespread locations indicate that cataclysmic floods of this magnitude have inundated California every two centuries or so for at least the past two millennia. The 1861-62 storms also pummeled the coastline from northern Mexico and southern California up to British Columbia, creating the worst floods in recorded history. Climate scientists now hypothesize that these floods, and others like them in several regions of the world, were caused by atmospheric rivers, a phenomenon you may have never heard of. And they think California, at least, is overdue for another one.

TEN MISSISSIPPI RIVERS, ONE MILE HIGH

ATMOSPHERIC RIVERS are long streams of water vapor that form at about one mile up in the atmosphere. They are only 250 miles across but extend for thousands of miles -- sometimes across an entire ocean basin such as the Pacific. These conveyor belts of vapor carry as much water as 10 to 15 Mississippi Rivers from the tropics and across the middle latitudes. When one reaches the U.S. West Coast and hits inland mountain ranges, such as the

Sierra Nevada, it is forced up, cools off and condenses into vast quantities of precipitation.

People on the West Coast of North America have long known about storms called "pineapple expresses," which pour in from the tropics near Hawaii and dump heavy rain and snow for three to five days. It turns out that they are just one configuration of an atmospheric river. As many as nine atmospheric rivers hit California every year, according to recent investigations. Few of them end up being strong enough to yield true megafloods, but even the "normal" storms are about as intense as rainstorms get in the rest of the U.S., so they challenge emergency personnel as well as flood-control authorities and water managers.

Atmospheric rivers also bring rains to the west coasts of other continents and can occasionally form in unlikely places. For example, the catastrophic flooding in and around Nashville in May 2010 -- which caused some 30 deaths and more than \$2 billion in damages -- was fed by an unusual atmospheric river that brought heavy rain for two relentless days up into Tennessee from the Gulf of Mexico. In 2009 substantial flooding in southern England and in various parts of Spain was also caused by atmospheric rivers. But the phenomenon is best understood along the Pacific Coast, and the latest studies suggest that these rivers of vapor may become even larger in the future as the climate warms.

Huge flows of vapor in the atmosphere, dubbed "atmospheric rivers," have unleashed massive floods every 200 years, and climate change could bring more of them.

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Working (not final) thesis

Topic

atmospheric rivers

Researchable
question

“Will climate change could bring more atmospheric rivers in the near future?”

Working
thesis

“Climate scientists now hypothesize that these floods, and others like them in several regions of the world, were caused by atmospheric rivers, a phenomenon you may have never heard of. And they think California, at least, is overdue for another one.”

Dettinger, M. D., & Ingram, B. (2013). THE COMING MEGAFLOODS. *Scientific American*, 308(1), 64-71.

Genre features

- **Headings—not generic**
- **Shorter paragraphs—6 or 7 sentences max.; some one-sentence transition paragraphs**
- **Largely non-technical language**
- **In-text references to research: “researchers Yong Zhu and the late Reginald Newell, then at the Massachusetts Institute of Technology, noticed an odd feature . . .”**

The deliverable

- 20 pages max, all in
- 8-12 pages main report
- 3500-4000 words
- Double-spaced, 12 pt font
- Numbered as “page 2 of 20”
- Need a cover page (name, title, date)
- Title: key words, details
- CSE style
- No table of contents or list of figures needed



Organization

Introduction (1-2 pages?)

- 🌐 **Overview of the field; explain the context for the report in this field**
- 🌐 **Supply necessary background information**
- 🌐 **Names the topic; justifies the choice of topic—interesting and relevant**

Organization

Main section (7-8 pages?)

-  **Whatever you said you would cover in the intro—the scope of the report—you must cover here in detail**
-  **Whatever claims you make in the intro must be backed up with evidence here drawn from your research**

Organization

- Ending (not conclusion; 1-2 pages?)
- “both **summarizes** and **makes conclusions** about the information presented”
- Usually, no new data/information here
- Extrapolates from data already presented to speculate about future
- Draws connections between ideas/data presented earlier

Working (not final) thesis

| Topic | Diversity of Madagascar |
|-----------------------|--|
| Researchable question | What accounts for the diversity of species on Madagascar? |
| Working thesis | The diversity of species on Madagascar can be attributed to three events: geologic drift, evolution, and human intervention. |

Working (not final) thesis

Topic

**Short and Long term Effects of
Marijuana and Alcohol on the
Brain**

Researchable
question

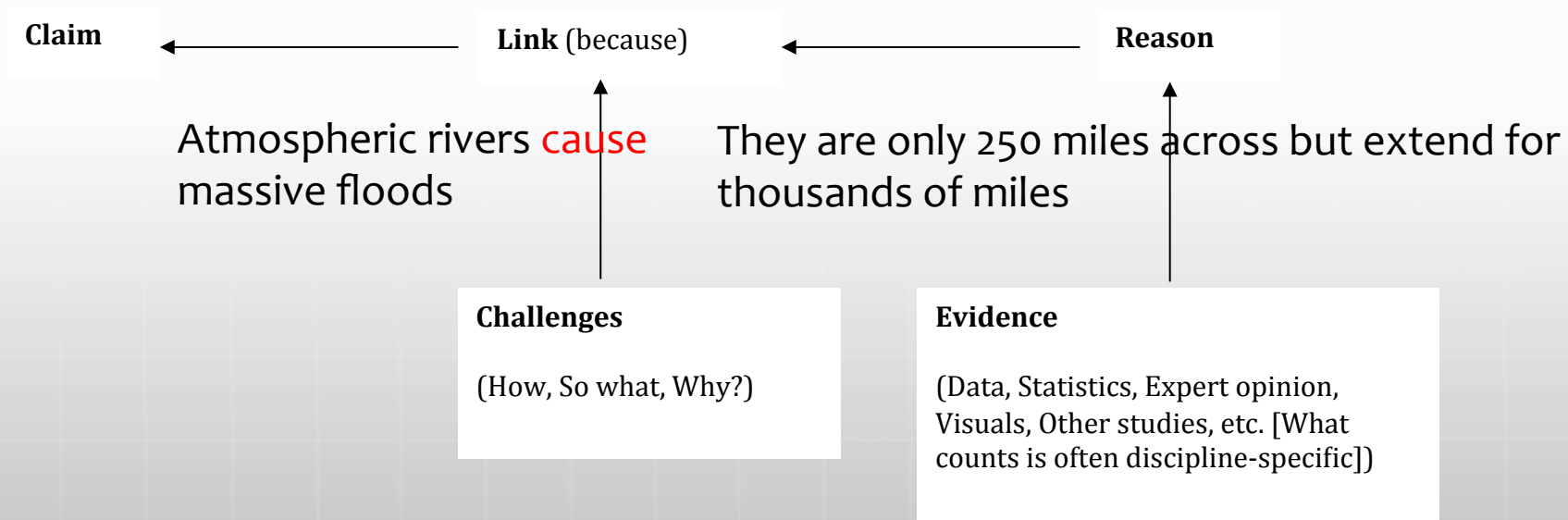
“What are the short and long term effects of marijuana and alcohol on the brain?”

Working
thesis

Thesis statements

- 🌐 **Specific: clear stance**
- 🌐 **Manageable**
- 🌐 **Interesting**
- 🌐 **Animal training is a crucial responsibility of pet ownership for pets that interact with visitors to the home or that venture into public spaces because these kinds of pets, when untrained, may pose threats to public safety.**

Informal Argument and Academic Writing



“Climate scientists now hypothesize that these floods, and others like them in several regions of the world, were caused by atmospheric rivers, a phenomenon you may have never heard of. And they think California, at least, is overdue for another one.”







California will suffer another one **because** it has been 150 since the last one.

Main section outline

- 🌐 **Ten Mississippi Rivers, One Mile High**
- 🌐 **Sudden Discovery**
- 🌐 **A Megaflood Every Century?**
- 🌐 **Disasters More Likely**
- 🌐 **Time to Prepare**

Dettinger, M. D., & Ingram, B. (2013). THE COMING MEGAFLOODS. *Scientific American*, 308(1), 64-71.

Keys to success

-  **Read articles**
-  **Summarize the articles**
-  **Get a working thesis**
-  **Put an outline together**
-  **Get someone to read your draft**
-  **Revise**