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Faculty Scholarship and Creative Works

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8-12-2021

## Faculty-Librarian Cooperation for Virtual STEM Based Courses: Creating Successful Learning Experiences for Undergraduate Students at UCF

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# **Faculty-Librarian Cooperation for Virtual STEM Based Courses: Creating Successful Learning Experiences for Undergraduate Students at UCF**



Dr. Nicole Lapeyrouse, Chemistry Lecturer  
Sandy Avila, Science Librarian

University of Central Florida

*Special Libraries Association Annual Conference  
August 12, 2021*



# Today's Speakers

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**Sandy Avila**  
Science Librarian



**Dr. Nicole  
Lapeyrouse**  
Chemistry Lecturer

# Outline

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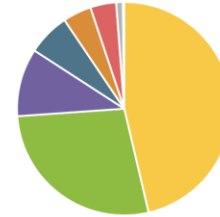
- About UCF
- Background on Faculty-Librarian Collaboration
- Transition to Online Teaching
- Helpful Online Engagement Strategies
- Benefits to Faculty-Librarian Collaboration
- What's Next for Us
- Q&A

# About the University of Central Florida

- One of 12 public universities in the state
- Located about 13 miles east of downtown Orlando
- 72,000 students<sup>1</sup>
- UCF was ranked 16th most innovative university in the US (tying with Cornell University) and placed top 20 in best online bachelor's programs in the nation by U.S. News & World Reports in Sept. 2020<sup>2</sup>



## A Diverse Student Population



<b>White</b>	33,307	46.3%
<b>Hispanic/Latino</b>	19,818	27.5%
<b>Black</b>	7,418	10.3%
<b>Asian</b>	4,622	6.4%
<b>International</b>	3,069	3.9%
<b>Multiracial</b>	2,817	4.3%
<b>Not Specified</b>	698	1%
<b>Native Hawaiian/Other Pacific Islander</b>	107	0.1%
<b>American Indian/Alaska Native</b>	92	0.1%

1. Spring 2020 <https://www.ucf.edu/about-ucf/facts/>

2. <https://www.ucf.edu/news/ucf-again-ranks-among-the-nations-most-innovative-universities/>

## Faculty/Librarian Collaboration

COLLESLAW ('slaw), *n.* cabbage  
COLIC (kol'ik), *n.* acute spasm  
pain in the abdomen or bowels  
COLISEUM, see colosseum.  
COLLABORATE (ko-lab'o-rat),  
to work jointly, especially in liter  
or scientific work.  
COLLABORATION (-o-ra'shun),  
united labour.  
COLLABORATOR (-lab'o-ra-ter),  
one who assists another, especially  
in literary or scientific work.  
COLLAPSE (ko-laps'), *n.* a fall  
or together; sudden  
failure.  
COLLAPSIBLE  
able of



# Establishing the Connection

We met as needs arose to have library instruction in a Geology course

Initial request involved only coming to the class, but a Course Research Guide was developed and other services/resources discussed

Use of information literacy modules proposed, creation of unique videos to be embedded in the classroom were mentioned, and other projects were brainstormed

A formal introduction to graduate students was made and librarian met whole research team

Once pandemic struck, we jumped to implement online tutorials and other one-on-one research consultation support via Zoom since campus/library closed

UCF Libraries / UCF Research Guides / GLY 1030 - Geology / Books

## GLY 1030 - Geology

Search this Guide Search

**Books**

- Books- Geology

**Journals**

**Databases**

**Geological Time**

**Evaluating Information**

**Literature Reviews**

**Scientific Writing**

**APA Style Guide**

**Using the Library**

**Help / Contact**

**Books- Geology**

- UCF Library Catalog

Catalog of the books, media, journals, and other library materials owned by the UCF Libraries. Some listed content requires login with your NID.

Search for books in the catalog via the following keywords (click on the link to be taken directly to the the UCF Library Catalog):

- beach erosion
- Cenozoic
- climate change
- earthquakes
- environmental geology
- fossil fuels
- geology
- geological sciences
- geological principles
- geological time
- landslides
- Mesozoic
- Paleozoic
- Precambrian
- similes
- tidal waves
- volcanism

Click the blue link to search for QE: Geology subject heading

**Science Librarian**

Sandy Avila

Email Me

Schedule Appointment

W



# Transition to Online Teaching



# Course Structure



## Traditional

Course is taught in a face-to-face instruction with mandatory class time. Limited to some online course content.



## Hybrid/Mix-Mode

Course has a reduced seat time and replaces face-to-face instruction with online content.



## Online

Course has no face-to-face instruction. All course material and assignments are delivered through an online platform.



## Emergency Remote Teaching

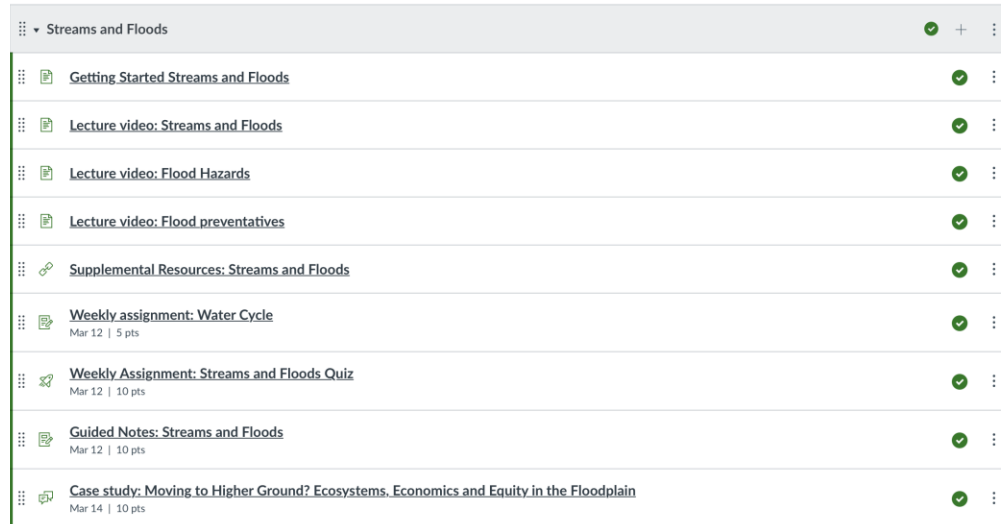
Emergency instruction that is done in the moment. This is a temporary shift when teaching has been transitioned to be distant learning.



# Course Structure

## Assignment break down

Guided notes	15%
Discussions	20%
Weekly assignments	15%
Exams	30%
Final exam	20%



The screenshot displays a list of assignments under the heading "Streams and Floods". Each item includes a document icon, the assignment title, a date and point value, a green checkmark, and a three-dot menu icon.

Assignment	Date	Points	Status
Getting Started Streams and Floods			Completed
Lecture video: Streams and Floods			Completed
Lecture video: Flood Hazards			Completed
Lecture video: Flood preventatives			Completed
Supplemental Resources: Streams and Floods			Completed
Weekly assignment: Water Cycle	Mar 12	5 pts	Completed
Weekly Assignment: Streams and Floods Quiz	Mar 12	10 pts	Completed
Guided Notes: Streams and Floods	Mar 12	10 pts	Completed
Case study: Moving to Higher Ground? Ecosystems, Economics and Equity in the Floodplain	Mar 14	10 pts	Completed

# Helpful Online Engagement Strategies



# Course Structure

## Features

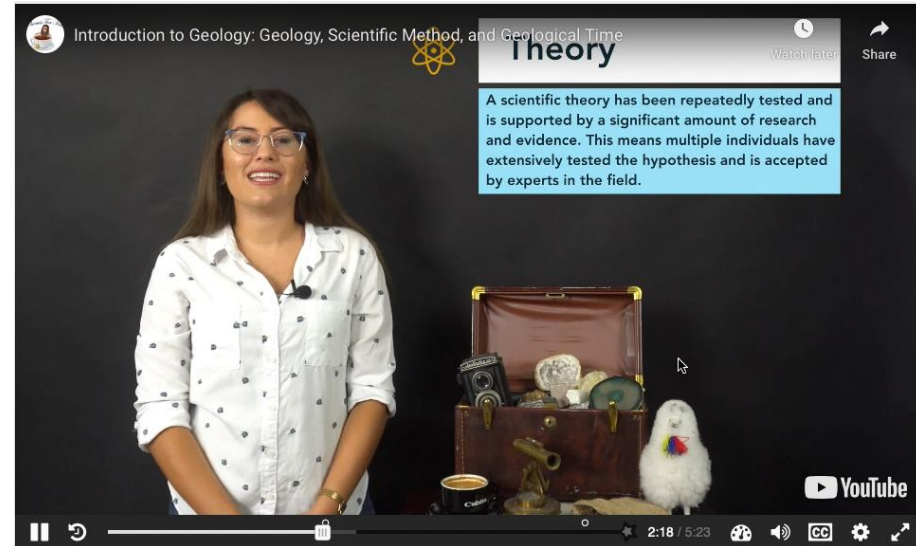
The following HSP content types may be added to your video:

- Multiple choice questions with one or more correct answers
- Free text questions
- Fill in the blank questions
- Drag and drop questions
- Interactive summaries
- Single choice question sets
- Mark the word activities
- Drag and drop text
- Images
- Tables
- Labels
- Texts
- Links

All question types can be configured to perform adaptive behavior, meaning that a correct answer could cause the user to skip to a specified place in the video while an incorrect answer could take the user somewhere else in the video. Typically, submitting a wrong answer will cause the user to be directed to the place in the video where the answer to the question is presented.

You may also add bookmarks so that your users can skip to specified sections of the video on demand.

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## Benefits to Faculty/Librarian Collaboration

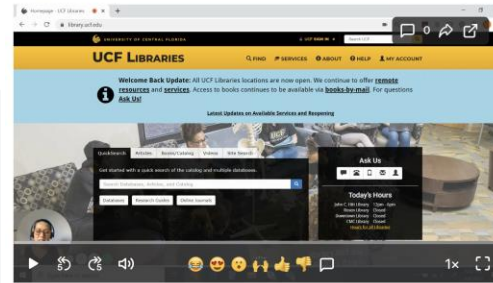


UCF

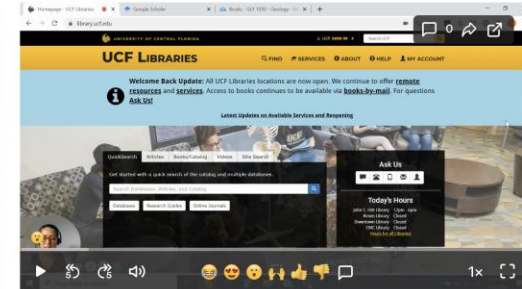
# Mini-Research Project

Geological time (2 weeks)	✓	+	⋮
Getting Started: Geological Time-2	✓		⋮
Geological Time Part 1	✓		⋮
Geological Time Part 2	✓		⋮
Library resources and guides for project	✓		⋮
Guided Notes: Geological time part 1 and 2 Feb 14   20 pts	✓		⋮
Mini-research project: Geological time Feb 21   20 pts	✓		⋮

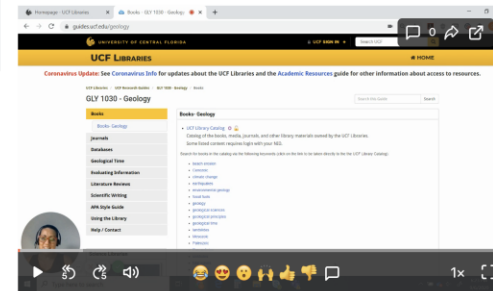
Using the UCF Libraries Website



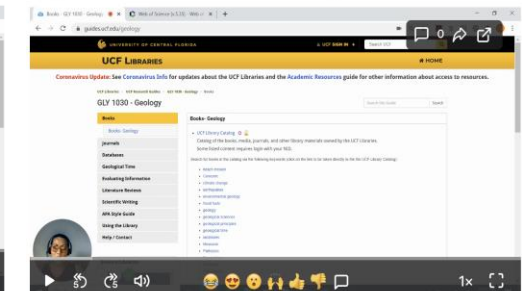
Using your Geology Research Guide



Searching Geology Databases Like GeoRef Through the UCF Libraries



Using the Web of Science Database to Search for Geology Literature Reviews



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# Class Assignments & STEM Videos

Mini-research project: Geological time

This discussion you will be creating an interactive poster board using genially ([how to use genially](#) ↓). This assignment cannot be used as a dropped discussion. You will need to pick a point on the geological time scale and go over the following points:

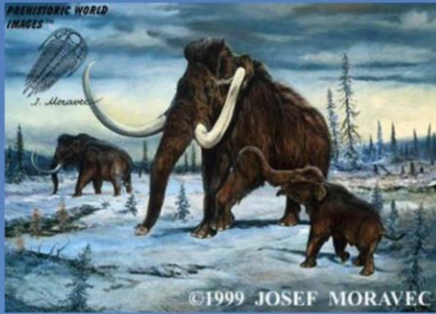
1. The name of the point of time you are presenting on
  - How long did it last?
  - Include if it is an eon, era, period, etc.
2. What was the world like (for example the climate or the atmosphere)? What organisms lived during this time?
3. What major event occurred?
4. Include a few interesting facts about this point in time
5. Be creative and have fun!

You will need to include pictures (2 at max) and include 2 references. Respond to at least 2 different post and reply to anyone that comments on your post.

You must embed the poster board as an iframe following the instructions in the file.

Rubric:

Criteria	pts
Time The name of the point of time you are presenting on How long did it last? Include if it is an eon, era, period, etc.	5.0 pts
World What was the world like? Include a description or representation	2.5 pts
Events Includes major events that happened	2.5 pts
Facts Includes minimum of 3 facts	5.0 pts
Creativity Visually appealing and includes hot spots	2.5 pts
References Includes 2 references	2.5 pts



# Pleistocene Epoch

2.6 million years ago - 11,700 thousand years ago




MAXIMUM GLACIAL EXTENT 1.5 MILLION YEARS AGO (PLEISTOCENE EPOCH)

  
Max Temp.  
**25°** (+)

  
Rain  
**0.05** (+)

  
Min Temp.  
**12°** (+)

  
UV  
(+)

 Global Weather Warning: Please be advised that you may experience drastic galciation cooling and dry weather throughout the next 100,000 years.

Precipitation  
**10%**

Humidity  
**15%**

Wind  
**18** Km/h

## THIS WEEK

	Monday	0°
	Tuesday	-3°
	Wednesday	-2
	Thursday	0°
	Friday	-4°
	Saturday	-5
	Sunday	-1°



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# Climate Change Globally

According to Ahmed:

Climate Change is:

- the variability of the climate system
- includes the atmosphere, biogeochemical cycles, the land surface, ice and biotic and abiotic components

Global Warming is:

- The rise in temperature primarily due to carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O)- these are greenhouse gases (GHGs)- being trapped in the atmosphere
- Intergovernmental Panel on Climate Change (IPCC) suggested to stop global warming at 1.5oC above preindustrial levels as warming beyond this level might lead to heat extremes, alter insect and plant phenology (Phenological shifts) and more occurrence of vector borne diseases
- Meanwhile, the author elaborates that frequency and intensity of rainfall and drought will grow that might cause flooding, erosion, runoff, and famine

## Risks Associated with Climate Change.

- Global temperatures have risen over 1oC
- Animals struggle with climate change as their habitats change
- Weather events become more severe, agriculture is affected

## How is Europe affected?

According to Feehan, Harley, and Minnen:

- Some animals migrate away from changing climates, while others thrive in warmer temperatures
- By the end of the late 21st century, distributions of European plant species are projected to have shifted several hundred kilometres to the north, forests are likely to have contracted in the south and expanded in the north
- 60% of mountain plant species may face extinction

## How is Ireland affected?

According to Berry, Dawson, Harrison, and Pearson:

- Loss of suitable habitat for animals is occurring due to climate change, as well as competition and habitat destruction

According to Kiely:

- An increase in annual precipitation and a much greater portion of extreme rainfall events occurred after 1975. Flood analysis and protection is a concern.

## How is Ireland affected?

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According to Kiely:

- An increase in annual precipitation and a much greater portion of extreme rainfall events occurred after 1975. Flood analysis and protection is a concern.

## How is Ireland reacting?

According to the Ireland Department of the Environment, Climate and Communications:

- The government set a goal in 2020 to cut carbon emissions each year to reach carbon neutrality by 2050
- The Climate Action and Low Carbon Development Bill of 2021 provides that the first two five-year carbon budgets proposed by the Climate Change Advisory Council should equate to a total reduction of 51% emissions over the period to 2030, in line with the Programme for Government commitment

## Sources:

- Ahmed, Mukhtar. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7227569/>
- P. M. Berry, T. P. Dawson, P. A. Harrison, R. G. Pearson. [https://onlinelibrary.wiley.com/doi/full/10.1111/j.1466-8238.2002.00304.x?samI\\_referrer](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1466-8238.2002.00304.x?samI_referrer)
- Department of the Environment, Climate and Communications. <https://www.gov.ie/en/publication/984d2-climate-action-and-low-carbon-development-amendment-bill-2020/>
- Jane Feehan, Mike Harley, Jell van Minnen. <https://link.springer.com/article/10.1051/agro:2008066>
- G. Kiely. <https://www.sciencedirect.com/science/article/abs/pii/S0309170899000184>



**What's Next  
for Us**



**UCF**

# Continuing Our Work

- Additional **creation of resources for class specific instruction**
  - expansion to include the General Chemistry I courses
- **Formal assessment of resources** students have already been using
- **Introduce more students** to their subject librarian early on
- **Continue graduate student research consultations**
  - providing one-on-one research support for advanced work

# Public Domain Image References

<https://pixabay.com/photos/collaboration-collaborator-book-1106196/>

<https://pixabay.com/vectors/coronavirus-line-art-virus-5019475/>

<https://pixabay.com/illustrations/education-online-learning-icon-5600987/>

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<https://pixabay.com/photos/entrepreneur-startup-start-up-man-593361/>

<https://pixabay.com/illustrations/place-name-sign-thing-experience-1647341/>

# Thank you! Any questions?

Feel free to contact us



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