



Integrating Computer Science + Geography

Professional Fellowship

Session #4

Jan 16, 2024: 6:00-7:30 p.m.



**"The time is always right
to do what is right."**

Dr. Martin Luther King Jr.

"We must remember that intelligence is not enough. Intelligence plus character—that is the goal of true education. The complete education gives one not only power of concentration, but worthy objectives upon which to concentrate. The broad education will, therefore, transmit to one not only the accumulated knowledge of the race but also the accumulated experience of social living.

If we are not careful, our colleges will produce a group of close-minded, unscientific, illogical propagandists, consumed with immoral acts. Be careful, "brethren!" Be careful, teachers!"

- Dr. Martin Luther King, Jr.

(from an [article](#) in the Morehouse College paper, 1947)



Session Agenda

- Quick dive into some geocomputation resources and ideas (15 min.)
- Student GIS Mapping Competition (15 mins.)
- Individual sharing of ideas/goals (~45 mins.)



New StoryMap

In development

Population Growth of the United States and California

This is a data-rich exploration of population change over time, drawing on decennial census data at national, state, and local scales.

Tom Herman
Draft

Population of the U.S.

State Populations

Geographic Variation

Datasets and Updates

Data literacy and math inform history and geography in this resource. Census-based statistics are explored and questions are occasionally posed to drive further analysis. All of the data used in the exploration (and more) are made available for you to take your data analytics to a deeper level.



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American Panorama

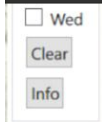
An Atlas of United States History



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ArcGIS Maps SDK for Qt



Creating an application to identify climbing locations using a weather forecast API



Developers

January 01, 2024



Andrew Bladon

You should do this!



My California

GIS MAPPING SHOWCASE AND COMPETITION
FOR 4-8TH AND 9-12TH GRADES

2024 COMPETITION TIMELINE

| JANUARY 26 | MARCH 1 | MARCH 22 | APRIL 19 | MAY 10 |
|--|---|------------------------------|--------------------|-----------------------------|
| Deadline for schools to sign-up for the optional mentoring program | Deadline to submit student work for mentoring | School registration deadline | Entries due to CGA | CGA announces state winners |

Grades 4-12

Schools/teachers register and submit up to 5 entries to state competition

1-2 student authors per entry (StoryMap)

Contest info and past winners at calgeography.org



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QUESTIONS?

Contest info and past winners at
calgeography.org



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StoryMap Structure

Relevant geographic question that drives:

- discussion of issue and framing of findings
- analysis and mapping of geographic data

Student selected inquiry using as much original content as possible since contest rules limit use of images and maps that students do not create themselves.

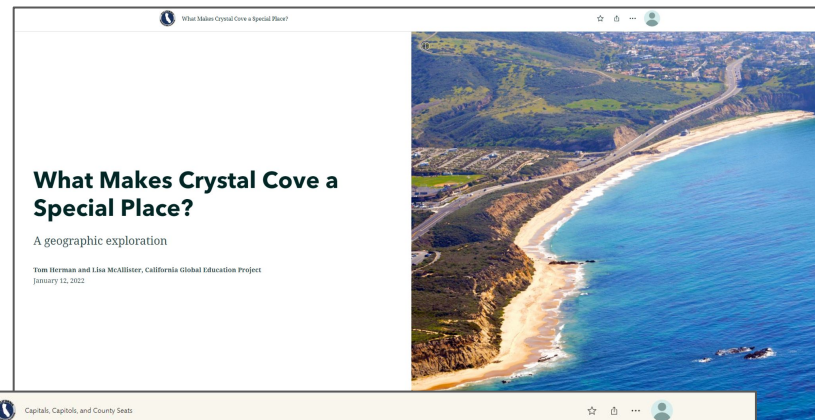
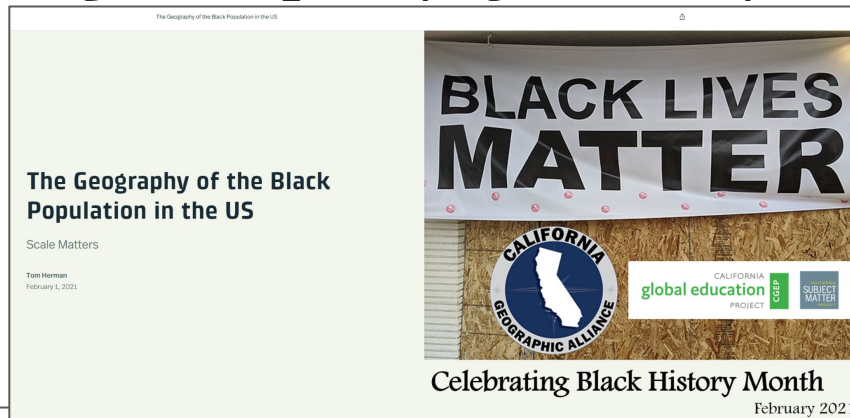


StoryMap Starters

- CalEnviroScreen and [Community EJ Screening Tool](#)
- [2020 US Census Demographic Data](#)
- [California Historical Census Data](#) (counties or cities/towns)
- ???



StoryMaps (by Tom)



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StoryMaps (by students)

2022 Contest Winners

The first place prize in the 9th-12th grade division is awarded to Daniel Bet Sarghez and Matthew Keshishian of Clark Magnet High School in La Crescenta (L.A. County) for a project entitled “**CTE Mission: CubeSat.**” This StoryMap highlights the work of the school’s GIS and Remote Sensing team. The group entered a national competition and ended up implementing the project they designed to map homeless encampments in high-risk fire zones in Los Angeles. They collected their own data using remote sensing techniques.

Other students recognized in the 9th-12th grade division include:

- Second place: Israel Jurado, Bonita Vista High School, Los Angeles: [Median Household Income and School Attendance](#)
- Third place: Kaitlin Bertrand, Bonita Vista High School, Chula Vista: [Dance in High School](#)
- Fourth place: Ervin Kamali, Clark Magnet High School, La Crescenta: [Cannabis Cultivation in California](#)
- Fifth Place: Tadeh Peroomian, Clark Magnet High School, La Crescenta: [Classroom Purifier or a Live Wire?](#)

The first place prize in the 4th-8th grade division is awarded to Olivia Shekou of Ross School in Ross (Marin County) for a project entitled “**Rising Sea Levels.**” This StoryMap goes beyond describing the impacts of climate change and rising sea levels to inspire action. The author applies documentary film-making concepts and calls it a “mapumentary.” Other students recognized in the 4th-8th grade division include:

- Second place: Gabriela Bizarro and Diana Sorto, Hollenbeck STEM Magnet, Los Angeles: [Air Pollution in Boyle Heights](#)
- Third place: Alegria Huck and Charles Sutro, Ross School, Ross: [Shark Attacks in California](#)
- Fourth place: Matthew Arce, Hollenbeck STEM Magnet, Los Angeles: [The Liquor Store Story: Difficulties Young Students can Face](#)
- Fifth Place: Abigail Silva and Aimee Rios, Hollenbeck STEM Magnet, Los Angeles: [Rent and Income in Los Angeles](#)



Planning Your Fellowship Path

1. **Identify opportunities** to integrate something new into your instruction that advances your goals and connects with student interests while leveraging the power of CS + Geo.
2. **Document** your process and progress, **and periodically share** your work with the group.
3. Set your own **SMART objectives** for the fellowship, with regard to developing and piloting teaching and learning activities.
(SMART = specific, measurable, achievable, relevant, and time-specific; e.g., *By December 31, 2023 I will identify at least two opportunities to integrate or emphasize CS + Geo in my teaching related to a high-interest topic.*)
4. **Engage networks of collaboration and support** based on your needs
5. Add one or more objectives related to **sharing your work** and the value of CS + Geo.



Planning Your Fellowship Path

- Planning document shared on Google Drive
- One document per fellow. Add note if you choose to work in pairs or groups
- Start entering your info.
- Sharing planning documents will begin after December meeting.

Name: _____

Grade level(s): _____

Subject(s): _____

Description of community location and context: _____

Opportunities I have identified for integrating CS + Geo
(at least 1 by Dec '23, 3 by Apr '24)

My fellowship objectives
(establish 2-3 SMART objectives by Apr '24, update progress on each as relevant)

Questions and/or needs I have in order to meet my objectives

Plans for sharing my work and the value of CS + Geo with colleagues and ed leaders
(at least 1 by Oct '24)

Notes

Links to Key Resources and Shareable Products

Click here to access





Questions?



Integrating Computer Science + Geography

*Next meeting:
Feb 20, 2024: 6:00-7:30 p.m.*



Summer 2024 Workshop



July 15-17, 2024

Univ. of San Diego campus

- >On-campus accommodation for 7/14-17
- >Travel and meal costs covered
- >Work time: 8:30-4 Mon/Tue; 8:30-12 Wed
- >Field trips in evenings as requested
- >Airline tickets will be purchased by USD



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Source Docs: Geography

- CA K-12 History-Social Science Framework adopted Aug 2016 ([link](#))
- *Geography for Life* standards ([link](#))



Source Docs: Computer Science

- CA K-12 Standards adopted Aug 2018 ([link](#))
- Other CDE info and Computer Science Focus Group Report from 2018 ([link](#))
- Computer Science Teachers Assn Standards ([link](#))

