Integrating Computer Science + Geography

Professional Fellowship
Session #2
Nov 21, 2023: 6:00-7:30 p.m.
Session Agenda

- Community EJ Screening Tool debrief
- ArcGIS Online + StoryMaps
- Student GIS Mapping Competition
- Summer 2024 workshop plans
- Planning an individualized fellowship path
5-minute Warm Up

Zoom poll
&
Meditate
on concept:

Geospatial intelligence
Geospatial Intelligence

Thinking about teachable intelligence, not CIA intelligence

An era of big data, complex issues, and critical decisions in which information processing capabilities, accurate models, and visionary thinking will all be vital

Intelligence rooted in real-world experience, environmental awareness, and active stewardship that can be aligned at multiple scales
Community EJ Screening Tool

- Designed to help move classroom conversations about environmental justice from general, vague, and unrelatable toward specific, data informed, and community relevant

- Can be completed by students (?) as a guided inquiry to build data literacy skills, increase knowledge, and motivate action

- Results can be introduced as starting point for explorations of community conditions, experiences, histories, and environments that develop skills and increase relevance in any subject area
CalEnviroScreen is a CS + Geo **Masterpiece**

**CalEnviroScreen 4.0 Dashboard**
This is the same tool and data that state lawmakers use to try to address environmental justice!

How much difference is there between places in California?

Are environmental justice issues in California connected with legacies of White privilege?
Esri’s ArcGIS Online

- Industry standard Geographic Information Systems software
- Cloud-based software organizational accounts are free to schools (includes mapping and Survey123 applications)
- Map based resources and curriculum materials available and usable without account or login
  - Web maps, map apps, and StoryMaps
  - GeoInquiries & Next generation GeoInquiries
  - National Geographic MapMaker Interactive
Do you think racial segregation in the United States is increasing or decreasing at the present time? What evidence can you access to better understand?

**Figure 1. Regional distribution of population by race**

Today’s MSAs containing the top 50 U.S. cities by population in 1950 and 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>City (%)</th>
<th>Suburbs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>2018</td>
<td>59%</td>
<td>41%</td>
</tr>
</tbody>
</table>

Source: Brookings analysis of IPUMS USA, University of Minnesota.

Even after decades of growing diversity and spatial mobility, most Americans still live in racially segregated neighborhoods.

**U.S. neighborhoods are more segregated than a generation ago, perpetuating racial inequity**

We often overlook one of the root causes in staggering disparities in health, income and incarceration – where we live.
You should do this!

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
Questions?
Geo-advocates Dr. Ashley Penir, Lara Main, and Tom Herman
National Council for Geographic Education Annual Conference
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
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.
Questions?
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)
Integrating Computer Science + Geography

Next meeting:
Dec 19, 2023: 6:00-7:30 p.m.