GIS in K-12 Education: from Data to STEM

GIS DAY 2018, November 14th Schedule

Location: Mumford Room
Madison Building, Library of Congress
Open to the public with no reservations required

8:30 – 9:00  Coffee and Pastries
9:00 – 9:15  Welcome Remarks
            Paulette Hasier
            Chief, Geography and Map Division
9:15 – 9:30  Education, Geographic Information and STEM
            John Hessler
            Specialist in Geographic Information Science
            Library of Congress
9:30 – 9:50  Spatial Thinking for Innovation

Spatial thinking, the ability to understand and transform complex visual and technical objects, is an important component to numerous careers and life skills. Fostering and assessing these skills, however, is lacking in K-12 curricula. These gaps in spatial thinking in education may be slowing innovations and advances in society. Teaching map reading and GIS in K-12 is one way to encourage and invigorate spatial thinking in the curriculum and longer term advances in STEM and vocational careers.

Kathy Hart is Head of the Geography and Map Division’s Reference Team and Reading Room at the Library of Congress. She leads a team that facilitates the use of the maps, atlases and geographic materials in LC’s extensive worldwide collection of maps. Throughout her career, Kathy has promoted the use and understanding of maps and geographic information, as well as delving into spatial thinking and maps and GIS in the digital humanities. She is a recent addition to LC, after spending over 20 years in academic libraries.

9:50 – 10:10  GeoMentors:
A Nationwide Volunteer Network Supporting GIS in K-12 Education

The GeoMentors program recruits, organizes, and supports volunteers nationwide to work with K-12 schools and informal education groups to find ways to integrate geography, GIS, and spatial thinking
into lesson plans, activities, and experiences for students. Starting in 2015, the program now has 1,800+ volunteers and many reported engagements and examples of the variety of ways to engage youth with GIS, both inside and outside of the formal classroom.

Candice Luebbering is a Senior Research Geographer and Director of Outreach and Engagement at the American Association of Geographers. She’s the Program Coordinator for the AAG Esri – GeoMentors Program and assists with a variety of AAG projects and programs that include research, outreach, and membership engagement activities. She is a proudly self-labeled ‘map nerd’ who loves promoting and sharing geography and GIS with all audiences. She is an avid tea drinker, bike rider, and map hoarder owning more vintage atlases than articles of clothing.

10:10 – 10:30  
**GIS in Schools**

GIS is streaming into schools and clubs, thanks to recent advances and decades of groundwork. Now, learners in all grades and subjects can use maps on any connected device, anytime, anywhere. This talk will explore case studies form around the country on how GIS is being used to introduce students to data and STEM in the primary grades.

Charlie Fitzpatrick has been Esri’s Schools Program Manager since 1992, focused on K-12 classroom use in the USA. He taught social studies in grades 7-12 (mostly 8th grade geography) in St. Paul, Minnesota.

Coffee Break 10:30 – 10:45

10:45 – 11:10  
**Visualizing the Library of Congress Card Catalog with Literary Maps**

The Library of Congress released 25 million Machine Readable Cataloging (MARC) records in 2017 – a treasure trove of literary data. Many of these records have a geographic identifier, allowing certain literary features to be showcased on a map. The end goal for this project is to have a complete and consistent database of georeferenced MARC records of American Fiction. This talks will look closely at how a Library’s Junior Fellow explored the challenges and nuances of transforming a subset of MARC records into a format that is compatible with Esri’s ArcGIS Online mapping software and what is can teach students about data and its use in libraries.

Kathleen McGuigan is an Education Resources Specialist at the Library of Congress with over 25 years of experience working on behalf of K-12 education for national groups. In her current role, she is responsible for building online teacher programs for the Library of Congress.

11:10 – 11:30  
All Speakers Question Session
11:30 – 12:00

**The Geospatial Data Act, Education and Policy**

**Congressman Bruce Westerman (AR)**

Member of the Committee on Transportation and Infrastructure and on the Committee on Natural Resources. An engineer and forester by trade, Westerman worked for 22 years at Mid-South Engineering in Hot Springs. He was named Engineer of the Year by the Arkansas Society of Professional Engineers in 2013.

Congressman Westerman will speak for 15 minutes followed by questions on GIS, Geospatial Data, education and policy.

1:00 – 3:00

**Geography and Map Division Open House**