

The AAG-Esri GeoMentors Program



**Increasing GIS and Geography
in K-12 Education**



AAG



esri

ConnectED
INITIATIVE



Esri ConnectED Initiative



In June 2013, President Obama announced the ConnectED initiative, designed to enrich K-12 education for every student in America. ConnectED empowers teachers with the best technology and the training to make the most of it, and empowers students through individualized learning and rich, digital content.



- Esri is donating **free** ArcGIS Online organization accounts to **every** K-12 school in the U.S
- Goal for adoption of ArcGIS Online at 25,000 K-12 schools and software access to one million school users.



AAG-Esri GeoMentors Program

- *Organize*
- *Facilitate*
- *Motivate*

www.geomentors.net

GIVE BACK—BE A
GeoMentor

What is the AAG/Esri ConnectED GeoMentors Program?
Esri and the Association of American Geographers (AAG) are working together to develop a nationwide network of **GeoMentors** to support the U.S. Department of Education's ConnectED Program, for which Esri has agreed to donate free GIS software to all K-12 schools in the U.S. GeoMentors will help schools and teachers introduce GIS and associated geographic concepts into classrooms across the country.



Who can be a GeoMentor?
From undergraduate and graduate students to professors and geographic information scientists, we welcome the entire GIS and geography community to volunteer their skills and experience as GeoMentors.

What do GeoMentors do?
GeoMentors play a pivotal role in improving GIS and geography education. The wide variety of outreach opportunities include advocating GIS adoption, helping schools get their free software, demonstrating available classroom exercises to teachers, and providing information about career and educational opportunities.



To become a GeoMentor, sign up at:
www.GeoMentors.net

Learn more at www.GeoMentors.net

TEACHERS: Partner with a GIS GeoMentor



Esri is donating free access to its ArcGIS Online geographic information systems (GIS) software to all U.S. K-12 schools to introduce geographic technology and geographic concepts to students. The Association of American Geographers (AAG) is working with Esri to build a nationwide network of GeoMentors to assist educators with using their free accounts with students, who can map and analyze data with the same software used by government and businesses.

How can GeoMentors help you bring GIS into your classroom?
GeoMentors are knowledgeable GIS users ready to adapt to the unique needs of each educator, school, and student group. They can help set up your free software account, demonstrate available classroom exercises, provide information on career opportunities, or help develop new activities based on your particular student audience.

What resources are available for teachers?
The GeoMentors program maintains online maps and databases for collaborators to connect with each other, a curated collection of ArcGIS Online educational resources and curriculum materials for different subjects and grade levels, as well as several online groups and social media streams for community engagement and interaction.



Collaborate with a GeoMentor; visit www.GeoMentors.net
For questions or more information, contact program staff at geomentors@aag.org

Who can be a GeoMentor?

From undergraduate and graduate students to professors and geographic information scientists, we welcome the entire GIS community to volunteer their skills and experience as GeoMentors.

Advanced GIS skills are not required to be a great asset to K-12 classrooms.



Who are our GeoMentors?

“Do you have any degrees or certificates in geography and/or GIS&T?”

Response	Count	% of GMs
No Degree Indicated	167	22.5%
Associate's Degree	24	3.2%
Undergraduate Minor	46	6.2%
Undergraduate Level Certificate	58	7.8%
Undergraduate Major	242	32.6%
Graduate Level Certificate	161	21.7%
Master's Degree	212	28.5%
PhD	71	9.6%

Who are our GeoMentors?



- I am a **biologist** with the **National Park Service** and use ArcGIS regularly.
- I'm an **AP Human Geography teacher** integrating some ArcGIS online into lessons.



- I am a **software architect and developer** in the GIS field for a major corporation.



- I am a **graduate student** in an Applied Geography and Geospatial program looking to volunteer and help educators.

- I am an **urban planner**, currently employed by the real estate department of a local government.



- I am a **certified health educator** and have a certification in GIS.

What do GeoMentors do?

Advocate GIS adoption and help schools and groups set up their free ArcGIS Online accounts

Demonstrate available GIS classroom exercises to educators

Share information about careers in GIS

Assist teachers and group leaders with tailoring GIS activities for their specific subject, grade, and/or project.

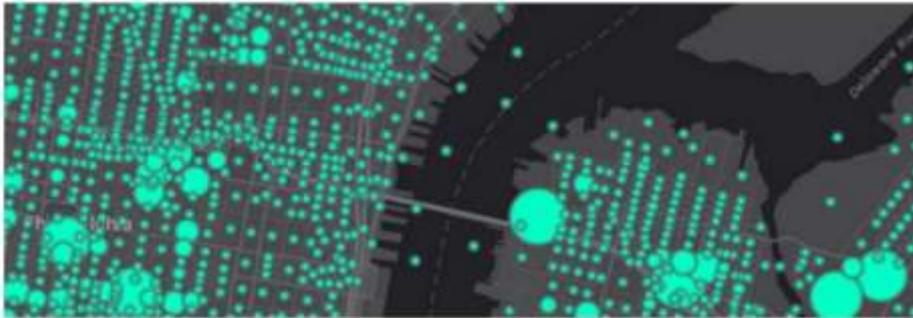
Work with your local community schools or with schools and educators across the US!



What do GeoMentors do?

- **“My son's school just registered for their ConnectED account yesterday. The principal and IT specialist are both excited as is his Kindergarten teacher. “**
- **“I’m visiting a middle school in Riverside, CA. They’re learning about earthquakes and architecture so I’ll demonstrate how 3D GIS and ArcGIS Online can be used to model such events.”**
- **“I have been asked to present at the Kansas Association of Middle Level Educators on teaching with maps and GIS.”**
- **“I reached out to my daughter’s 4th grade Challenge program teacher. I shared a bunch of resources with her and inadvertently caused her to change her entire lesson plan to incorporate GIS. (Oops). “**

How do I become a GeoMentor?



Register as a GeoMentor or Seek a GeoMentor

For more information about the GeoMentor program, including who can be a GeoMentor, visit the [About](#) page. **Previous experience with ArcGIS Online is not required**; we have many training resources available to help you quickly gain basic skills that will make you an asset to K-12 classrooms.

GeoMentors

Would you like to be a GeoMentor?

[Register here](#)

Educators

Are you looking for a GeoMentor?

[Register here](#)

AAG esri

Sign up to be a GeoMentor!

Thank you for your interest in volunteering as a GeoMentor! Please take a moment to fill out the form below (not all fields are required). Note that there are two sections to this form:

Section 1: This information will be used to populate our public GeoMentor database and GeoMentor map. The database and map will be available online for GeoMentors and educators to search and contact each other for suitable classroom collaboration. If you provide your location information (not required), we will add you to the map. Your email address will be added to our listserve used to send information to the GeoMentor community.

Section 2: This information will only be accessible to and used by AAG and Esri GeoMentoring program staff and will not be further distributed or posted online.

By completing the form below, you acknowledge that you have read this information and agree to be part of the GeoMentor database, map (if applicable), and program listserve, with the knowledge that you are free to withdraw your participation and information at any time by contacting program staff at geomentors@esri.com.

Required

Section 1: Contact Information and GeoMentoring Interest

Information that will be publicly available online. Name and location information, we will add you to the AAG/Esri

Name:

Email Address:

City:

State:

AAG esri

Looking for a GeoMentor to help your school? Register here!

We're so glad you are interested in bringing GIS into your schools and classroom! Please take a moment to fill out the form below (not all fields are required). Note that there are two sections to this form:

Section 1: This information will be used to populate our public Educator-Seeking-GeoMentor database and map. The database and map will be available online for Educators and GeoMentors to search and contact each other for suitable classroom collaboration. If you provide your location information (not required), we will add you to the map. Your email address will be added to our listserve used to send information to the GeoMentor program community.

Section 2: This information will only be accessible to and used by AAG and Esri GeoMentoring program staff and will not be further distributed or posted online.

By completing the form below, you acknowledge that you have read this information and agree to be part of the Educator-Seeking-GeoMentor database, map (if applicable), and program listserve, with the knowledge that you are free to withdraw your participation and information at any time by contacting program staff at geomentors@esri.com.

Required

Section 1: Contact Information and GeoMentoring Interest

Information that will be publicly available online. Name and email address are required. If you provide location information, we will add you to the AAG/Esri Online Educator-Seeking-GeoMentor Map.

Name:

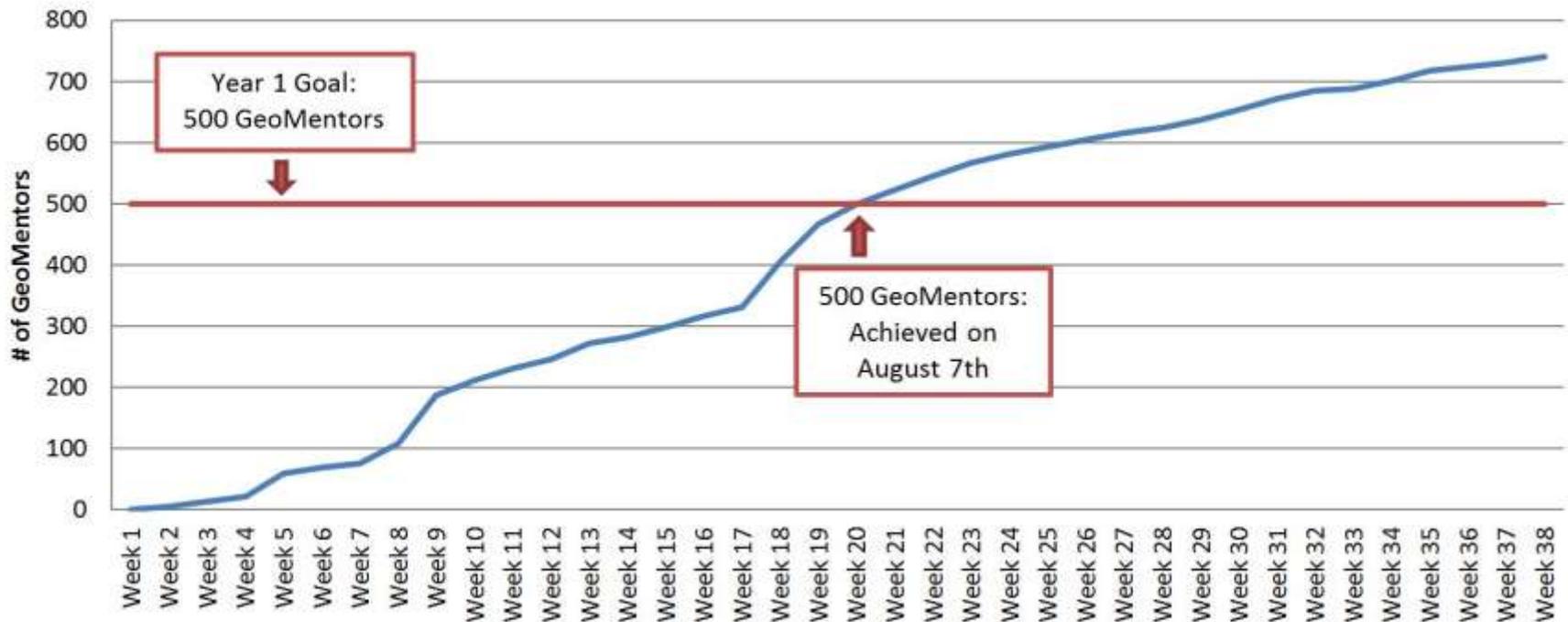
Email Address:

City:

www.geomentors.net/participate

GeoMentor Registrations: 2015

Cumulative GeoMentor Registrations: 2015



Current GeoMentors Map



1,000+ strong and growing!

Join the network - Sign up today!

Connect with a Collaborator

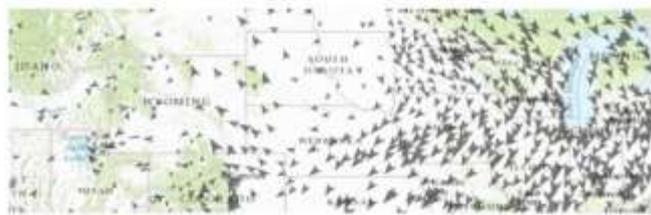


GeoMentor Guidelines for Contacting Potential Collaborators

Now that you have signed up as a GeoMentor and familiarized yourself with the program's goals and mentor training materials, the next step is to connect with a school or teacher for and schools seeking responsibility to initiate success of this program generously volunteer

Please keep in mind schools and teachers

- As a GeoMentor, you can help them with assistance
- The AAG and Esri are looking for teachers or schools
- GeoMentors should



Recruit new schools to participate in the Esri ConnectedED program

Before we can help add GIS to classroom curricula, we have to get the software into schools. One of the most important engagements you can perform as a GeoMentor is to recruit new schools to participate in the Esri ConnectedED program! With the goal of ArcGIS Online usage in 25,000 US K-12 schools by 2017, the success of this program ultimately depends on people like you, volunteering your expertise as a GeoMentor and proactively seeking opportunities to bring GIS into new schools across the country.

• How do I find a school to recruit?

• Why should schools participate?

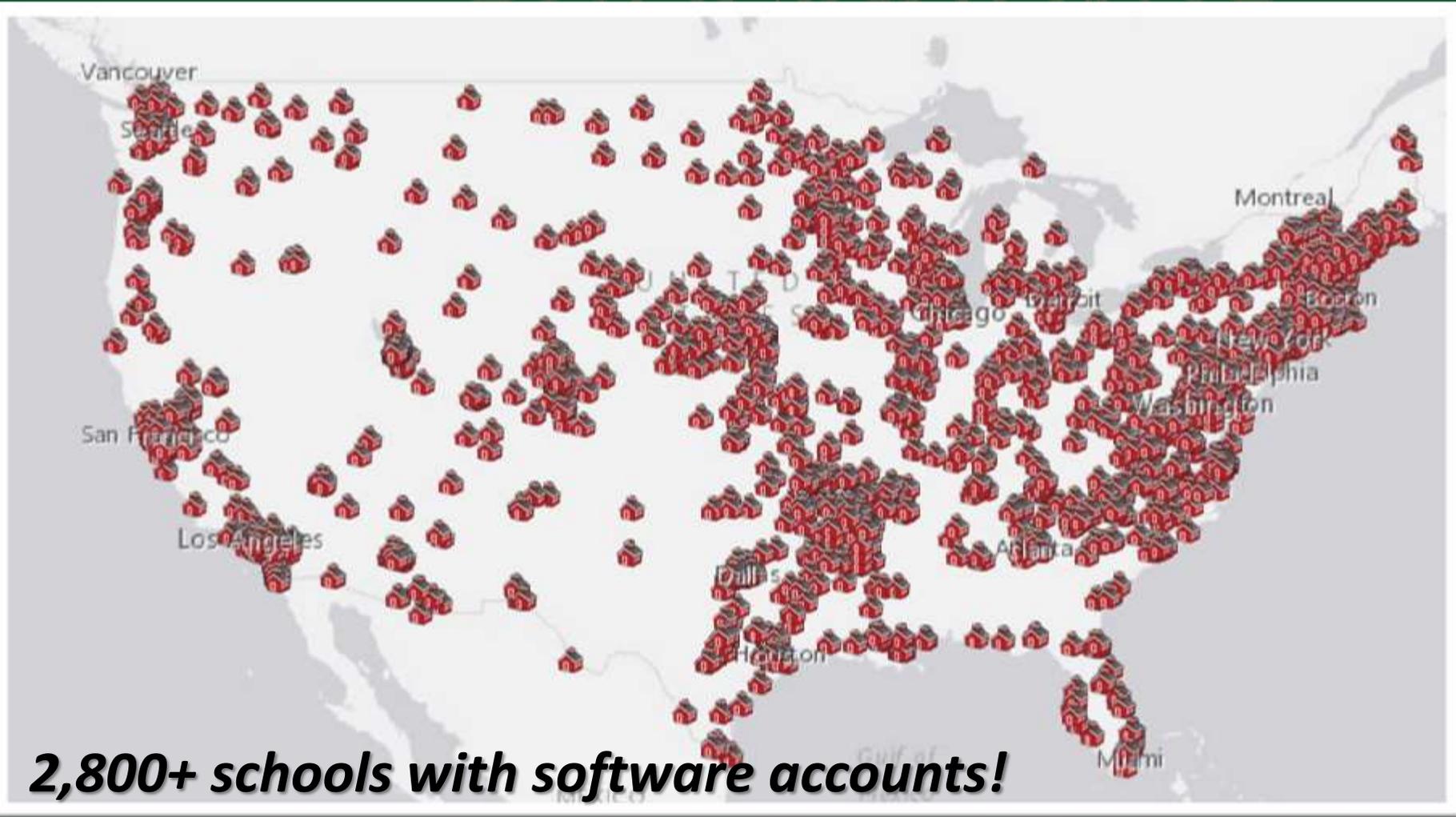
GIS can benefit ALL classrooms. When recruiting a new school to the program, be prepared to explain the concept of GIS and what it has to offer to educational settings. GIS is not just for certain grade levels or subject areas; it has application potential throughout all schools and classrooms! You may draw from your own personal experiences and knowledgebase, but also be sure to review the materials developed specifically for educators available [here](#).



- Educators requesting help
- Local schools
- Youth groups: Girl Scouts, Boy Scouts, 4-H, Boys & Girls Clubs of America
- **Use your social network!**

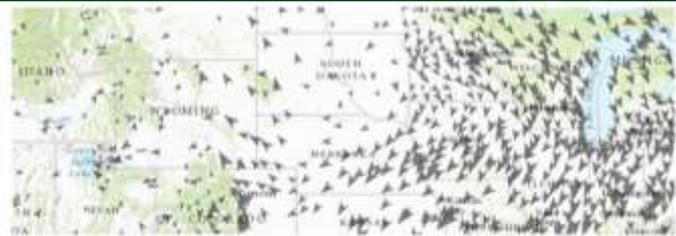
www.geomentors.net/connect

Current Schools Map



Are your local schools participating?

Curated Collection of Resources



GeoMentor Training Materials

To help you prepare for GeoMentor volunteer opportunities, we've collected and curated information and materials that may prove useful to you and your K-12 school collaborators. Browse the links below to find background information about ArcGIS Online (AGO), AGO materials developed specifically for educators, free online AGO courses and activities that may be incorporated directly into classrooms, as well as information to guide you through different types of GeoMentoring engagements. We will continue to post more materials; if you have any resources you would like to suggest, please share them with us at geomentors@aaag.org.

Previous experience with ArcGIS Online is not required. The resources below help you quickly gain basic skills that will make you an asset to K-12 classrooms. To learn how to access ArcGIS Online, click on 'About ArcGIS Online' below, or go here.

- [About ArcGIS Online](#)
- [ArcGIS Online Training for Educators](#)
- [ArcGIS Online: Available Courses, Lessons, and Activities](#)
- [Training Materials for Different Engagement Types](#)
- [Data Sources and Learning Resources](#)

Questions? Email geomentors@aaag.org

Topography and our national heritage

Target audience – Earth Science, grades 6-8 Time required – 15 minutes

Activity Interpret the landscape using topographic maps of well-known national parks.

Science Standards MS-ESS2-4 – Develop a model to describe unobservable mechanisms.

Learning Outcomes

- Students will interpret landform features within topographic maps.
- Students will determine distances and scale from the map.
- Students will predict implications of landforms for health and safety in outdoor recreation.

Map URL: <http://earth.k12.ca.us/earthscience/engr/>

Engage

How did Yosemite inspire the institution of the National Park System?

1. Investigate the park that shows on the map.
2. Why is it important to indicate three areas on national parks? (An wilderness area, many agricultural and rural areas, and the national parks, for use and education, and for recreation to global citizens. These areas are critical to the environment.)
3. What do the brown lines tell you about the topography? (They represent elevation.)
4. What do the blue lines represent? (They represent water.)
5. What type of climate is most likely on the map? (Cold, since the elevation shows high mountain peaks.)

Explore

What do the brown topographic lines tell us about the landscape?

1. Use the landmarks to locate the Half Dome.
2. Why do you have a steep trail to ascend? (The trail is in a different elevation, and it is a different elevation.)
3. Half Dome is a large and steep-sided hill without a snow-covered top.
4. What points do you have on the map? (The map shows the Half Dome, and it is a different elevation.)

Explain

When you get to the edge, what does it look like?

1. Answer to the 3D Explorer tool.
2. What is the pattern of top lines for very steep areas like this cliff? (They are close parallel lines.)

Language and religion

Audience – High school human geography Time required – 15 minutes

Activity Students will explore patterns of cultural diffusion through linguistic and religious data.

APAC Benchmarks Unit 3, A2: Diffusion of cultural patterns; Unit 3, B2: Religion and sacred spaces; Unit 3, B1: Language and communications

Learning Outcomes • Students will be able to analyze diffusion patterns of languages and religions to see correlations between the two.

Map URL: <http://world.k12.ca.us/humanGeography/>

Ask

How do linguistic patterns affect the spread of religion?

1. Cultural diffusion is the spreading of cultural traits from one group to another.
2. How does cultural diffusion affect the spread of religion? (How would language or religion help the other to spread? Language allows a religion spread more easily to speakers of similar languages. Religion often led to the use of a particular language, the spread of a religion will spread the use of that language. Both can help their language and religion to a new area.)
3. What are some factors that would help the spread of a religion? (Common language, common culture, common territory, common religion.)

Acquire

What geographic patterns exist in language and religion?

1. Look at the religious map.
2. What is common about the distribution of religion? (Religion often follows the lines of latitude, but linguistic boundaries often follow the lines of longitude.)
3. Look at the Language Features of the World map.
4. What is common about the linguistic patterns around the world? (Latin is the most widely spoken language family, also, more widely spoken languages tend to be in the same language family.)

Explore

How do patterns of religion vary?

Create a map

Learn how to use the built-in map viewer in ArcGIS Online to create maps.

Recorded Nov 19, 2015 Views: 5223 Views: 1118 Night Mode: ON

Published Nov 19, 2015 Views: 1118

SkillBuilder Activities for ArcGIS Online in Education

Make maps, analyze data, learn content, build capacity for community, college, and career

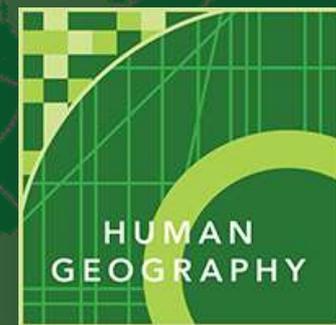
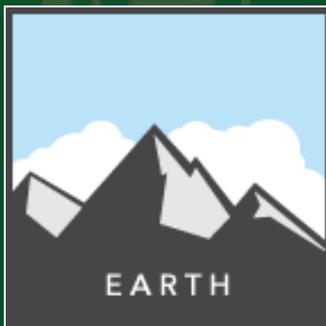
- Level One: Explorer, using ArcGIS Online without sign-in
- Set One: Definitions
 - Set Two: Practical skills
- Level Two: Cartographer, using an ArcGIS Online public account
- Set Three: Expand the universe
 - Set Four: Add map content
 - Set Five: Begin analysis
 - Set Six: Access map data from other software
 - Set Seven: Finding help
- Level Three: Geospatial, using an ArcGIS Online Organization account
- Set Eight: Expand the basics
 - Set Nine: Expand the analysis
 - Set Ten: Go pro

Skills, activities, resources, and challenges to help teachers and students build capacity in GIS to explore the world, understand the community, and solve problems using ArcGIS Online

GeoInquiries

- 15-minute activities designed for a single computer/projector classroom arrangement.
- No installation, fees, or logins are necessary to use these materials and software.

Any teacher can use a GeoInquiry, regardless of their prior experience with digital mapping tools.



<http://edcommunity.esri.com/Resources/Collections/geoinquiries>

GeoMentor Case Studies

- **Chuck**: Arizona; **K-5th grades**; Outdoor learning
- **Rob**: California; **2nd-5th grades**; Geography Awareness Week lessons
- **Nicole**: Delaware; **5th Grade**; GIS Day Careers Event
- **Lisa**: South Carolina; **6-12th Grade Teachers**; GIS Workshop
- **Lindsay**: Florida; **Grades 9-11**; AP Human Geography



www.geomentors.net/review/case_studies

GeoMentor Case Studies



“Working as a Geomenter has been an amazing experience. The kids just love using the technology and love solving problems. It’s the same reason I love GIS.”

- Chuck, Arizona

“My experience encouraged me in my day-to-day work. It reminded me of how fun GIS can be, and how it can be applied to almost everything you do daily.”

- Diana, California

Join Online GeoMentor Communities



 **Student Society Geog**
@WU_SSG

Following

geomentoring Macomb Senior High School students in IL thanks to @Esri and @AAGGeoMentors #ConnectED initiative!



 **Megan A. Gall**
@DocGallJr

Follow

Joined in National Mentor Month by volunteering with @AAGGeoMentors! I am stoked to teach some kids about #GIS, #maps, and #geography.

 **Bethany Hall**
@bhall1821

Follow

@AAGGeoMentors my daughter came home after her first day of AP Human Geography & told me I was on the map! Cool!

www.geomentors.net/communicate

Monthly Newsletter and GM Spotlight



In This Issue

- Monthly Mentor Challenge
- GeoMentor Spotlight
- GeoMentors at the AAG Annual Meeting
- Featured Resource

Current
GeoMentor
Count:
1,000



Current
School
Count:
2,730



Questions?

Contact program staff at
geomentors@aag.org

February 2016 www.geomentors.net Vol. 2, No. 2

2016 is moving right along! Stay connected with the GeoMentors community by tackling our monthly challenge and checking out the GeoMentor spotlight and Featured Resources. Attending the AAG Annual Meeting in San Francisco? Review our program activities and consider volunteering your time at the GeoMentors space and/or sharing your story at our GeoMentors session! Questions? Email us at geomentors@aag.org!

Monthly Mentor Challenge

Now in our 2nd year of the re-energized GeoMentors program, we want to keep improving our work to enhance our community's impact on K-12 education. This month we challenge you to:

Suggest one way, big or small, that we can improve the GeoMentors program

Have a suggested resource or website amendment? Maybe a bit of advice to pass on to other volunteers? Let us know! Contact us via [email](mailto:geomentors@aag.org), [Twitter](#), [Facebook](#), or our [online feedback form](#). We appreciate your insight!

GeoMentor Spotlight

Each month we feature a GeoMentor volunteer to showcase the wonderful talent available in our community to assist K-12 schools.

Name: Mavei Johnson

Position(s)/Affiliation(s):
Biologist, National Park Service

What was your favorite class in K-12? Anatomy

How did you first learn about and/or use GIS? I took a course during my last semester at the University of Colorado, but by



March 2016 GeoMentor Spotlight

Rheannon Hart, USGS

Position/Affiliation: U.S. Geological Survey Lower Mississippi-Gulf Water Science Center

What was your favorite class in K-12? My favorite class in school was always science class. Biology, chemistry, earth science, etc., and each year. I looked forward to participating in the science fair.

How did you first learn about and/or use GIS? My first experience with GIS was at the USGS. I started with the USGS as a student working on my Bachelor's degree in geology and one of my first tasks was to digitize the state geologic map for use in a groundwater-flow model. Being able to bring a paper map to "life" was extremely fascinating, and from that moment, I was hooked.



Name one thing you love about GIS and/or geography (I know, just one!): My favorite thing about GIS is the problem solving. I love having these separate, but geographically similar data sets and needing to conduct some sort of geospatial analyses in order to answer a specific question. I love having to figure out which tools within the program and the order of the steps that will get me to that answer.

January 2016 GeoMentor Spotlight

Brian King - GIS Analyst / Archeologist

Position/Affiliation: GIS Analyst V / Archeologist at Freese and Nichols, Inc. Austin, Texas. Staff Grader at the Pennsylvania State University, Dutton e-Education Institute, World Campus. Past-President URISA Texas (2012-2015); present Vice-President URISA Texas (2016), National Information Security, Geospatial Technologies Consortium (NISGTC), Board Member, since 2015.

What was your favorite class in K-12? History

How did you first learn about and/or use GIS? I started using GIS while working in Cultural Resource Management (CRM). I used ArcGIS to depict archeological site boundaries and the location of shovel tests and testhole trench excavations across the site. A lot of my field data was collected using a Trimble GPS unit and I used a GIS for mapping. I enjoyed GIS so much that I earned a master degree from Pennsylvania State University.

Name one thing you love about GIS and/or geography (I know, just one!): A GIS allows people to spatially organize large datasets, visually view complex issues, and ask questions that lead to wise decision making.



www.geomentors.net/communicate

Gain Service and Outreach Experience



GIS Certification Institute

From an Educator:

“I have gotten in touch with a Geo-Mentor, who actually got me in touch with another guy also, so I actually have TWO mentors now! They are great and have already been helpful when I told them I needed help using ArcGIS in my AP HUG and AP World History classes. In fact, one of them told me his kids will be going to the high school where I teach! **Thank you so much for providing this service for educators like me who want to use ArcGIS more in my classes but aren't very familiar with how it works.**”

From a GeoMentor:



Tammy S.
@Golden__Mean



 Follow

Love the concept! Great opportunity to be THAT person who gets a kid excited about #geography.
#GIS #learning

Register as a GeoMentor today!

www.geomentors.net/participate



Twitter: @AAGGeoMentors



Email: geomentors@aag.org

www.geomentors.net



*Come by the GeoMentors space
to get your name badge ribbon!*