

ASTE sponsored session - Using Web GIS and iPads for Socio-Environmental Science Investigations

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Presentation Summary

This session presents a series of Socio-Environmental Science Investigations (SESI) we developed via a design partnership with urban high school science teachers. SESI are based on the pedagogical frameworks of place-based education, socio-scientific issues-based instruction, and citizen science. The learning activities focus on local investigations and problems, utilizing fieldwork with GPS-enabled iPads to gather data surrounding the school. Student-gathered data are shared in the classroom for analysis with interactive Web GIS maps using ArcGIS Online. During our session, we will present the Urban Heat Island and the Trees and Ecological Services investigations. Session attendees will learn how ArcGIS Online (free for schools) can be used for socio-environmental science investigations. We will highlight how to use Web GIS to promote geospatial thinking and reasoning skills. Session attendees will be introduced to our instructional materials, assessments, and teacher support materials. We will also discuss how to take advantage of local learning contexts and community resources to help students understand important environmental science issues in their community.

SESI investigations at <http://ei.lehigh.edu/eli/sesi> (Website in development)

Papers available at <http://ei.lehigh.edu/eli/research/pubs.html>

Getting Started with ArcGIS Online Resources

- Free ArcGIS.com Account
<https://www.arcgis.com/home/createaccount.html>
ESRI ArcGIS online (organizational account) is free for K-12 schools
- Request an ArcGIS for Schools Bundle Account
<http://www.esri.com/industries/education/software-bundle>
- Organize Your Organization
 - Roles, permissions how users can view and edit and share your layers and maps
 - Groups, typically classes or some collection of users that will share data
 - Users, can be invited from a spreadsheet (students) with users, emails, roles and groups (ESRI provides a template for creating and importing your users)
 - ESRI Documentation
 - <https://doc.arcgis.com/en/arcgis-online/administer/manage-members.htm>

- Ready to Make Maps, Get started with ESRI Documentation
 - <https://doc.arcgis.com/en/arcgis-online/get-started/online-quick-exercises.htm>
- Collecting data (Collector App) The app is free but requires organization account on arcgis.com.
 - Create map with an editable layer.
 - <https://doc.arcgis.com/en/collector/windows/create-maps/create-and-share-a-collector-map.htm>
 - Create a feature layer
 - <https://doc.arcgis.com/en/arcgis-online/reference/feature-layers.htm>

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