**Craft societally relevant curriculum:**

**Use the following guiding concepts to identify a societally-relevant course or program activity tied to the InTeGrate Rubric & the Sustainability Improves Student Learning Guiding Concepts (Established Effective Criteria). Please choose at least 4. At home you should also consider how these will be measured in your courses.**

**1) Provide local connection (SISL)**

**2) Address Grand Challenges/Nationally Urgent Issues (InTeGrate)**

**3) Authentic data (InTeGrate)**

**4) Systems thinking (InTeGrate)**

**5) Geoscientific habits (InTeGrate) (e.g. spatial thinking, temporal reasoning, developing converging lines of evidence)**

**6) Interdisciplinary thinking (InTeGrate/SISL)**

**7) Proactive (SISL)**

**8) Collaboration (between students, with others, InTeGrate/SISL)**

**Examples from the Earth Educator’s Rendezvous**

**Example 1: Angie**

1) **Provide local connection** (SISL) – Natural Disasters: Flooding. Most students are from Texas, and many are from the 4 major metropolis areas (Houston, DFW, San Antonio, Austin) or areas nearby; all of which have experienced damaging floods within the last 4 years. Students will work in groups to come up with natural and anthropogenic factors that they think may have contributed to flooding in an area. As a class we will discuss these factors and as a class consider ways to reduce loss of life and property.

2) **Address Grand Challenges/Nationally Urgent Issues** (InTeGrate) – Climate Change. Again, most students are form Texas, and climate change has direct impacts on coastal communities, agriculture, water resources, severe weather, etc. This project will involve…

3) **Authentic data (InTeGrate)** – Climate Change cont. – Students will gather data from Texas Coastal Ocean Observation Network (TCOON) and Texas Natural Resources Information System (TNRIS) about coastal conditions. They will also gather data from the USGS about stream flow, record flood events, and recent flood events.

4) **Interdisciplinary thinking (InTeGrate/SISL)** – Fracking. Students will evaluate the pros and cons of fracking using multiple perspectives: energy, environmental, economic, employment, social/community, geological/seismic, hydrological, etc.

**Example 2:Joe**

 creating a “process of hydraulic fracturing” animation

**1) Local Connection** Marcellus / Utica Sh - unconventional shale gas

2) **Grand Challenge** “fracking” - energy resource extraction

**3) Authentic Data\***  results from primary literature

4) **Systems thinking** geo - hydro - atmo - bio

**5) Geoscientific Habits** directional drilling, hydraulic fracturing, fluid flow, gw, surface water

6) **Interdisciplinary Thinking** graphic design / animation + geology + environment

7) **Proactive** more accurate representation of process for outreach / awareness

8) **Collaboration** art prof + geol prof (but could be class project for students also)

**Example 3: Monica**

**1) Authentic data**- work on a short/small research project using data from USGS on earthquakes

**2) Interdisciplinary system**- incorporate aspects from different subjects into one project

**3) Systems thinking**- create projects that don’t have an answer, but multiple outcomes as things in the system change

**4) Geoscientific habits**- practice field note-taking, reading, researching

**Example 4: Michelle Selvans (topic: fracking regulations):**

**1) local connection:** HS teacher collecting water quality baseline data (or local agency with similar data)

**2) Grand Challenge:** fracking and fracking regulations

**3) authentic data:** use local water quality data; consider what you might find if there was contamination due to fracking (knowing what to look for down the line to monitor water quality)

**4) collaboration:** teams of students doing data analysis, partnering with HS teacher/HS students, partnering with local community group with interests in water quality

Resources Sarah will add to the workshop page:

* Links to societally relevant spatial figures that can be looked at collectively (e.g. the example of food security: census data, food desert/access maps, toxic release inventory (EPA), USGS soil lead map, soi erosion
* 8 Block Model of Collaboration
* Tips on approaching new potential collaborators: find mutual agendas, look at the missions of the organizations you approach, consider the goals of others & see what fits there are with your broader impacts, exposure is often mutually important.