Geoscience Papers of the Future

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EarthCube Building Block

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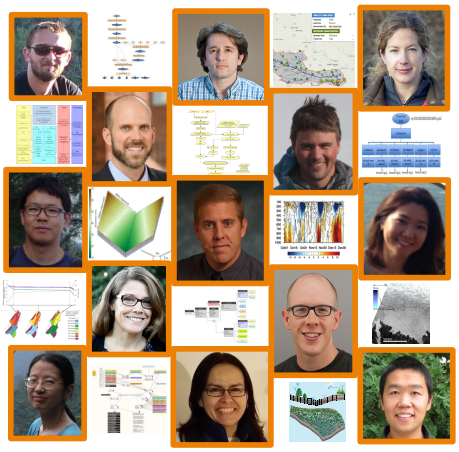
Goals

As part of the EarthCube GeoSoft project for software stewardship in geosciences, **train a cohort of early career researchers on digital scholarship**

- Each writes a paper with open publication and citation of all data, software, workflow, and provenance using unique identifiers and proper metadata
- A joint paper co-authored by all participants discussing challenging issues, best practices, and benefits to geoscientists for different areas and methodologies



Outcomes

- A Special Issue of the AGU Earth and Space Sciences journal that will include all GPFs from this activity
  - Editors: Chris Duffy, Scott Peckham, Cedric David, and Karan Venayagamoorthy

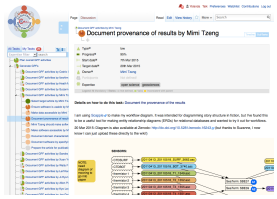
Earth and Space Science
AN OPEN ACCESS AGU JOURNAL

- Special Issue will be widely advertised by AGU calling for contributions from the community
- Training sessions will be given at ESIP Summer Meeting, AGU, and can be done for other events

Effort Required

- 2-4 hours a week for 4 months in Spring 2015
  - 2-day face-to-face meeting (Feb) preceded by 2 preparatory telecons (Dec-Jan) followed by biweekly calls (March-May)
  - Most of the work planned at a face-to-face meeting, with about 2 hours of work per week after that

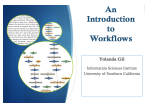
Tracking the Work: the Organic Data Science Semantic Wiki



Training

Topics included:

- Make data accessible in a public repository and with a DOI/PURL
- Document the provenance of the results
- Document the data analysis workflow
- Make software accessible in a public repository and with a DOI/PURL
- Make software executable by others
- Document software by specifying general metadata
- Document domain metadata to describe the software
- Prepare the article for publication and cite data, software, workflow, and provenance



Author	Area	Type of paper
David	Hydrology modeling	Reproduce prior publication
Demir	Hydrology sensor network	New contribution
Fulweiler	Biogeochemistry in marine ecology	New contribution
Goodall	Hydrology visualization	New contribution
Karlstrom	Volcanic vent clustering	New contribution
Lee	Regional climate model evaluation	Reproduce prior publication
Mills	Geochemistry, marine microbiology	New contribution
Oh	Tropical meteorology	Reproduce prior publication
Pierce	Multi-Criteria Spatial Decision Support Energy-Water-Mineral Case	New contribution and extend prior publication
Pope	Glaciology	Reproduce prior publication
Tzeng	Ocean fisheries	Reproduce and extend prior publication
Villamizar	River ecohydrology	New contribution
Yu	Hydrologic modeling	Reproduce prior publication

Challenge: Overcoming Barriers for Software Sharing

- "Noone would use my code if I shared it"
- "My code is really bad"
- "My code is not ready to be shared"
- "Sharing my software will take a lot of time"
- "I won't get anything out of sharing my software"
- "I've shared software before, bad things happened"
- "I work for the government"
- "I want to commercialize my software"
- "I don't want anyone to commercialize my software"
- "I don't know where to start!"