# Linking Humans to Data: Designing an Enterprise Architecture for EarthCube **[1]**

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**Abstract:**
National Science Foundation (NSF)'s EarthCube is a strategic initiative towards a grand enterprise that holistically incorporates different geoscience research domains. The EarthCube as envisioned by NSF is a community-guided cyberinfrastructure (NSF 2011). The design of EarthCube enterprise architecture (EA) offers a vision to harmonize processes between the operations of EarthCube and its information technology foundation, the geospatial cyberinfrastructure. (Yang et al. 2010). We envision these processes as linking humans to data. We report here on fundamental ideas that would ultimately materialize as a conceptual design of EarthCube EA.

EarthCube can be viewed as a meta-science that seeks to advance knowledge of the Earth through cross-disciplinary connections made using conventional domain-based earth science research. In order to build capacity that enables crossing disciplinary chasms, a key step would be to identify the cornerstones of the envisioned enterprise architecture. Human and data inputs are the two key factors to the success of EarthCube (NSF 2011), based upon which three hypotheses have been made: 1) cross disciplinary collaboration has to be achieved through data sharing; 2) disciplinary differences need to be articulated and captured in both computer and human understandable formats; 3) human intervention is crucial for crossing the disciplinary chasms.

We have selected the Federal Enterprise Architecture Framework (FEAF, CIO Council 2013) as the baseline for the envisioned EarthCube EA, noting that the FEAF's deficiencies can be improved upon with inputs from three other popular EA frameworks. This presentation reports the latest on the conceptual design of an enterprise architecture in support of EarthCube.

References

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**Author(s):**

**Name:** Chen Xu [5]
**Organization(s):** George Mason University [6]

**Name:** chaowei yang [7]
**Organization(s):** GMU [8]
**Email:** cyang3@gmu.edu [9]

**Name:** Carol Meyer [10]
**Organization(s):** Foundation [11]
**Email:** carolbmeyer@esipfed.org [12]

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