The iSamples Research Coordination Network (RCN) aims to better connect samples with digital data infrastructure, with the goal to create exciting new opportunities to discover, share, and re-use physical samples and the data derived by their study, and allow previously impossible linking and integration of sample-based observations across data systems and the scientific literature. Ultimately, improved digital management and access to samples will advance scientific discovery, productivity, effectiveness, and efficiency.

### Socialization

Socialization is the process that builds, grows, and fosters the iSamples community. It aims to facilitate communication and collaboration to converge on a vision of the Internet of Samples, relevant practices and standards, and related physical infrastructure for samples. The tools used for socialization include surveys, workshops, and outreach events.

The iSamples Kick-Off Workshop was held at UT Austin in Jan. 2015. More than 50 participants, of which more than 1/3 were early career scientists, met to define a shared vision of success for iSamples, determine the appropriate governance structure, and form working groups. The workshop led to the formation of 5 working groups (see panel ‘Best Practices’).

A virtual field trip and a tour of the BEG Core Research Center (photo) helped to complement and reinforce dialogue and learning on physical samples.

### Knowledge Creation

Knowledge creation is intended to enhance broad awareness and access of existing resources that will advance the Internet of Samples in the Earth Sciences, such as registry services of the IGSN e.V., metadata standards such as Darwin Core, and repository policies for sample access and sharing. It will allow evaluation of existing practices, tools, and technologies, help identify and articulate needs and challenges of physical samples in CI, and support implementation of best practices.

### iSamples Stakeholder Alignment Survey

**lead: Joel Cutcher-Gershenfeld**

More than 280 individuals completed the iSamples Stakeholder Alignment Survey that was developed with the help of Waymark Systems to assess attitudes and behaviors with respect to discovery, access, sharing, analysis, and curation of physical samples. The survey results show that the community considers sample preservation and sharing relevant for their science, but difficult to achieve. The complete results of the survey are available at http://earthcube.org/workspace/ismamples/isamples-survey.

Z-flower™ technology is used to visualize survey results. Each hexagon is an individual response, where green is a positive response, yellow is neutral, and red is negative.

### Best Practices

The iSamples RCN aims to identify, develop, and build consensus around best practices and standards for sample registration, identification, citation, and metadata through working groups, engagement and education of early career scientists, and collaboration with other national and international organizations and initiatives.

**Working Groups**

Five Working Groups were established at the iSamples Kick-off workshop in January 2015:

- **WG1: Metadata & identifiers**
- **WG2: User stories & scientific requirements (including policies for sample sharing)**
- **WG3: Communication, training, & education**
- **WG4: Architecture & workflows**
- **WG5: Physical infrastructure (including digitization of collections and sample rescue)**

### Transformation of Sample and Data Practices by Early Career Scientists

**lead: Benjamin Halliet**

The iSamples RCN engages early career and graduate student scientists to transform data and sample management and sharing practices. A group of early career scientists is developing tutorials for teaching and mentoring future geoscientists with the overarching goal to prevent production of “dark data”, and “dark samples” in future research endeavors by educating early career scientists in proper sample/data stewardship.

iSamples hosted an Early Career Forum at AGU (2014) jointly with the C4P RCN that brought together 60+ young scientists who discussed samples as part of their research.

### Engagement with International Initiatives

iSamples will participate in international initiatives that aim to advance best practices and digital data infrastructure for samples, including the IGSN e.V., the CODATA Task Group for Physical Samples in the Digital Era, SciColl, COOPEUS, COPDESS, and others.

### Upcoming Events

- **iSamples Breakout Session at EarthCube All-Hands Meeting, May 29th, 8:30 AM, Fitzgerald A.**
- **Workshop at the Joint Conference on Digital Libraries (JCDL), Knoxville, TN, June 21-25th, 2015.**
- **iSamples Session at the ESIP Summer Meeting, Monterey, CA, July 14-17th, 2015.**

Check out the iSamples website: http://earthcube.org/group/isamples