ABSTRACT
Twelve scholars based at information programs worldwide have recently participated in research that asks: How is the concept of information visualized in my community and beyond? The study employed an arts-informed, visual methodology and the draw-and-write technique to stimulate local and global conversations about the pictorial nature of information in society. The work has generated new insights into information as a visual phenomenon and generated an archive of “iSquare” images to be used for information research, education, and practice. As a contribution to the conference theme of “Impact on Society,” this panel introduces the project, describes its technical infrastructure, highlights emerging social scientific and artistic outcomes, and reports cross-cultural discoveries. The multimedia and interactive session will include in-person presentations, short videos from collaborators overseas, an expert discussant, dialogue with the audience, and an art exhibition.

Keywords
Information, information theory, arts-informed visual research, draw-and-write technique, iSquares

INTRODUCTION
In an encyclopedia article on information, Bates (2010) surveys more than two dozen conceptions. Invariably, these conceptions are products of the philosophical analytic paradigm; manifest as texts; and reflect a North American or European point-of-view. The work at hand offers an alternative conception of information that emerges from arts-informed methodology (Cole & Knowles, 2008); manifests as images (Prosser & Loxley, 2008); and is culturally multi-perspective.

The study builds upon the iSquare research program (Hartel, 2014a, 2014b, 2014c, www.ISquares.info), which utilizes the draw-and-write technique (Pridmore & Bendelow, 1995). As an empirical research design, data collection is performed by an instructor in a classroom setting and with students as research subjects. Participants are given a 4” by 4” piece of paper and asked to express their understanding of information in the form of a drawing, as shown in Figure 1. On the back side of the same paper they are prompted to “say a few words about your drawing.” The data gathering protocol takes less than 10 minutes and generates a compact piece of visual and textual data coined an “iSquare.”

INTERNATIONAL COLLABORATION
To explore the variety in visual conceptions of information, iSquares were collected from graduate students at twelve information studies programs worldwide. The locations, shown in Figure 2, were chosen by the primary investigator for their geographic distribution and availability.

Figure 1. A student participates in the data-gathering exercise.

Figure 2. The participating research sites are marked in red. (Note: France is missing from the map and will be added to the final version.)

At each information school a scholar and/or doctoral student implemented the data gathering protocol. The respondents were enrolled graduate student and ranged in
age from 20-55 (27 mean); they were 57% female and 43% male. In seven cases the exercise was conducted in English, and at four sites it was presented in another first language. The international team members who conducted data collection are listed below:

- AUSTRALIA, Dr. Leonie Ellis, Faculty of Science, Engineering and Technology, University of Tasmania
- BRAZIL, Mr. Lucas Almeida and Ms. Adriana Carla Silva de Oliveira, Program in Information Science, Federal University of Paraba
- CANADA, Dr. Jenna Hartel and Team, Faculty of Information, University of Toronto
- CROATIA, Dr. Sanjica Tanackovic, Department of Information Sciences, University J. J. Strossmayer
- ENGLAND, Dr. Andrew Cox and Ms. Melanie Benson, Information School, University of Sheffield
- FINLAND, Dr. Isto Huuilla, Information Studies, School of Business and Economics, Åbo Akademi University
- FRANCE, Dr. Fidelia Ibekwe-SanJuan, School of Communication and Journalism, Aix-Marseille University
- GHANA, Dr. Perpetua Dadzie, Department of Information Studies, University of Ghana
- IRAN, Ms. Zohreh Dehghani Champiri, Medical Informatics Department, Isfahan University of Medical Sciences
- MALAYSIA, Ms. Zohreh Dehghani Champiri, Faculty of Computer Science and Information Technology, University of Malaya
- RUSSIA, Dr. Galina Olzoeva, Department of Library and Information Resources, The East Siberian Academy of Culture and Arts
- TAIWAN, Dr. Tien-I Tsai, Department of Library and Information Science, National Taiwan University

DATA MANAGEMENT/TECHNICAL INFRASTRUCTURE
Completed iSquares were returned to the Faculty of Information, University of Toronto in late 2014. Sites contributed between 18-62 (mean 39) iSquares for a total corpus of 464. Two research assistants in Toronto then managed the large visual data set. Systematically, each drawing was: photocopied on both sides to preserve the original; assigned a unique identification code; and scanned as an individual JPEG file. Then, the text response on the back side was rendered machine readable on a spreadsheet. The digital image and text files were kept securely in Google Drive. To allow easy access by international team members, the JPEGs were also uploaded to a password protected website that enabled the artful display of the entire iSquare corpus’ front and back sides.

DATA ANALYSIS
Motivated by the question: How is the concept of information visualized in my community and beyond? the distributed team performed a descriptive content analysis (Neuendorf, 2002, 53-54). A descriptive content analysis has as its goal a numerically based summary of a chosen message set. To that end, Skype-based discussions occurred with team members to articulate a multi-perspective coding framework, composed of variables and values to be counted across the corpus. The variables and values reflected local and universal dimensions of information salient to information science, such as: humanity and sociality, information behaviors, information representation and organization, information and communication technologies, print artifacts, settings, metaphors and motifs. Using the coding framework, team members then spent many hours viewing and coding the iSquares, one at a time.

Figure 3. A sample of international iSquares subjected to descriptive content analysis during spring 2015.

EMERGENT OUTCOMES
As of late April, descriptive content analysis is still underway, making it premature to report findings in this proposal. Already, though, the research points to a new understanding of information as a visual phenomenon. Further, the descriptive content analysis characterizes major dimensions associated with information, such as: the presence (or absence) of human beings, types of information behavior, varieties of information representation and organization, prevalent information and communication technologies, associated print artifacts, common settings for information, as well as the pictorial metaphors invoked for information. The findings will be fully realized by November 2015 and shared for the first time at the Annual Meeting.

This project has outcomes beyond the descriptive content analysis. Each team has an opportunity to perform different kinds of analysis on their local data set. For example, Dr. Tien-I Tsai of National Taiwan University has conducted a thematic analysis (Guest, 2012), of iSquares from Taiwan and the paper is currently in review for the Annual Meeting.

EXHIBITION
As an arts-informed study, the deliverables also take the form of artwork. For the conference in St. Louis, we propose an on-site exhibition to display the 464 international iSquares. Sponsored by SIG-III, the exhibition will be launched at their celebrated International Reception. The international iSquares will also be mounted as a permanent online exhibition and shared with audiences everywhere.

PANEL AGENDA
The panel includes live presentations from the Toronto-based research team as well as six pre-recorded 3-minute videos from contributors in Brazil, France, Finland, Iran/Malaysia, Russia, and Taiwan. The formal presentations will conclude with the remarks of an expert discussant, Dr. Toni Carbo. A spacious 30 minutes will remain for a free-flowing exchange with the audience.
Zohreh Dehghani Champiri (video participant)
Zohreh Dehghani (B.Sc., M.Sc.) is senior lecturer at the Medical Informatics Department, Isfahan University of Medical Sciences in Isfahan, Iran, and a research assistant at the Faculty of Computer Science and Information Technology, University of Malaya. She collected iSquares in Iran and Malaysia.

Galina Olzoeva (video participant)
Dr. Galina Olzoeva is a professor of librarianship at the Department of Library and Information Resources, at the East Siberian Academy of Culture and Arts in Ulan-Ude, Russia. She collected iSquares in Russia.

Tien-I Tsai (video participant)
Dr. Tien-I Tsai is an assistant professor at the Department of Library and Information Science, National Taiwan University. She collected iSquares in Taiwan.

REferences