

EDITOR  
Jonathan Grudin  
jgrudin@microsoft.com

*Editor's Note: New fields, such as computer science, cognitive science, neuroscience, human-computer interaction, and now information, have multidisciplinary origins. To overcome communication difficulties as they worked to define the field and set priorities, pioneers developed a pidgin language. Soon came a generation of scholars, who staked their careers on the new field, creolizing the language and shaping a coherent framework relatively free of the legacy disciplines. In this article three research faculty members from the Information School of the University of Washington, discuss the tensions and opportunities in this 21st-century discipline that could become the most influential of all.* —Jonathan Grudin

# Reflections on the Future of iSchools from Inspired Junior Faculty

**Jacob O. Wobbrock**

University of Washington | wobbrock@u.washington.edu

**Amy J. Ko**

University of Washington | ajko@u.washington.edu

**Julie A. Kientz**

University of Washington | jkientz@u.washington.edu

Most academic units primarily either “describe things” or “invent things.” They are either Einstein or Edison. Very few are Pasteur, who did both [1]. But as the recent article by Gary Olson and Jonathan Grudin entitled “The Information School Phenomenon” [2] made clear, this is exactly what dozens of emerging information schools (iSchools) across the world propose to do. So what, then, should information school faculty look like? What should the core competency of iSchools be? What is it exactly that iSchools do? What should they do? As three junior faculty at a top-ranked iSchool poised to lead the affectionately termed “iMovement,” we have been discussing these questions since our first days on the job. We all know how vital first impressions are, and we’d like to share a few of our own.

One thing seems clear: It is not enough to answer these questions simply by saying, “We study information.” As an identity statement, this is not going to get the job done outside our privileged walls. For starters, there is no such thing as an informationless field of study, degree, professor, or student. By trying to claim “information” as our own, we may alienate (and mystify) faculty and students from other disciplines. Another problem is that nonacademics regard information as both obvious and confusing—a bad combination. It is obvious in that people have experienced having or lacking information, for example, when

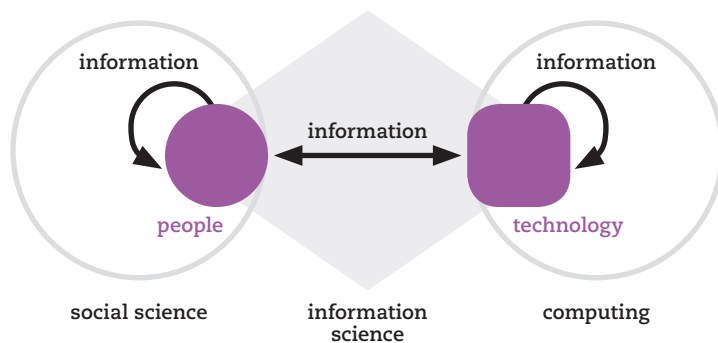
traveling in a foreign country and searching for a meal. It is confusing because information is hard to define and impossible to see, but it is everywhere. While most other academic disciplines—at least those claiming to be part of the sciences—have concrete objects of study in the world, information is simply too everywhere and yet nowhere. It isn’t a mass on a spring, a star, a chemical, a plant, a microbe, a brain, a computer, a political system, or an ancient civilization. Academic information scientists can and should debate what information is, but nonacademics aren’t generally interested in this question—people just want information when and where they need it.

The best identity statement we have devised for iSchools is that they are places “where people and technology meet.” They are places where social scientists study things and technologists invent things. Of course, by “technology” we mean information technology in its most inclusive sense. It may or may not be computerized—books and card catalogs are information technologies. Not all technologies of interest to iSchools will be computerized, but all will convey information.

There is a conspicuous lack of the word “information” in our proposed identity statement. (Heresy, we know, but bear with us.) The adopted slogan of iSchools, “people, technology, information,” identifies information as an object separate from the other two. But to do information justice,

[1] Stokes, D. E. *Pasteur's Quadrant: Basic Science and Technological Innovation*. Washington, D.C.: Brookings Institution Press, 1997.

[2] Olson, G. and Grudin, J. “The Information School Phenomenon.” *Interactions* 16, no. 2 (2009): 15-19.



► Figure 1. Information is not “the third thing”; it moves within and among people and technology. While social science focuses on people and computing focuses on technology, information science can focus on their intersection. To do work at the intersection of people and technology, which are two concrete things, is to unavoidably work on information, which is an abstract thing. It behooves the iMovement to base its identity on concrete things.

it cannot be cited as “a third thing.” Information is not an object of study separate from people and technology. In fact, it is the thing that moves within and between people and technology, making them interesting (see Figure 1). People exchange information with other people and technologies (and by short extension, services); technologies exchange information with other technologies and people. We, including other faculty and students, regularly understand what it means to study people and technology. These are concrete objects in the world. The action occurs where people and technology meet because that is where the information exists. To cite information as a separate, third thing is confusing to others and ourselves, and it betrays the notion that information is the vital currency exchanged among and within people and technology. In our discussions with others, we have discovered that no one is confused about iSchools being places “where people and technology meet,” in force.

What does it mean to work at the intersection of people and technology? To us, it means doing what no other academic units can do—bring together deep social science with deep technology innovation. The outside world understands the idea of people and the idea of technology. But no other academic departments have established their headquarters at the rigorous intersection of the two. We think this goes a long way in solving the identity crisis facing the iMovement.

Some iSchool researchers will predominantly study people. Others will predominantly invent new technologies. But as a whole, the iSchools aren’t just promoting social science, because iSchools also invent new things. Sociology, communication, and STS departments do not [3]. However, iSchools aren’t computer science or engineering departments. iSchools study people,

deeply and rigorously, and most engineers do not. Information schools must both study and invent to define the intersection between people and technology.

Scott Hudson of the Human-Computer Interaction Institute at Carnegie Mellon University points out that the field of HCI produces research from two primary activities. These are “activities of discovery” and “activities of innovation.” The former we will call science; its central purpose is to describe the world—in our case, the human behavioral world. The latter involves design, invention, and engineering, and its primary purpose is to change the world, not describe it. As mentioned at the onset, almost all academic units are either one or the other, with the hard and soft sciences on one hand, and design and engineering programs on the other.

So which of these activities should define iSchools? We strongly answer “both!” But we must admit that this makes iSchools unique on most university campuses. Rarely do activities of discovery and activities of innovation dwell under one roof. The perceptions and values of social scientists differ from those of designers and engineers. What constitutes rigor and achievement in both fields also differs. How both fields view the role of Ph.D. students varies, which has direct implications for how such students are recruited and advised. Both fields seek funding differently. Most iSchools also have faculty from the humanities, and so the challenge grows even larger. The humanities, unlike social science and engineering, may be nonempirical, relying on analytic and interpretive approaches that are exotic if not enigmatic to social scientists and engineers. While those in the humanities strive to publish monographs, social scientists and engineers work in multiauthor lab settings with their Ph.D. students.

One professor, from the library and information science tradition, told me he was warned that for every new Ph.D. advisee he mentored, he would publish one less paper that year. By contrast, engineers, who are dependent upon Ph.D. students to carry out the long slog of “building stuff,” say exactly the opposite. Faculty from the humanities and social sciences think engineers lack theory and scholarly approaches to their work, while engineers and designers feel that one must intervene in the world, not just describe it, to make an impact. All points have some merit, constituting

[3] Science, technology, and society (STS) programs exist at many major research universities. They are typically “social studies of technology” endeavors that do not invent new technologies.

a more complicated version of “the two cultures” concern expressed by C.P. Snow in the 1950s [4]. Snow’s concerns are now intensified by the premise of iSchools as a combination of even more than two cultures.

The questions for the iMovement are ones of identity and community. How shall such diverse traditions be brought together to define scholarship where people and technology meet? It is difficult to conceive that methodologically, these camps can converge, or even that they should. From epistemology to pragmatics, they are simply too different. But in their difference lies their strength, because when iSchools devote themselves to the rigorous study of people and technology, and to the invention of new technologies, different methods and viewpoints will make outcomes stronger.

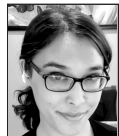
For iSchools to thrive under these differences, we must adopt what Michael Eisenberg, dean emeritus of the University of Washington’s Information School, calls “the big tent.” The big tent is large enough for all traditions, unified by work at the intersection of people and technology. Having a big tent means that all iSchools must fight the temptation to have an abundance of rules, regulations, procedures, policies, permissions, and processes—either for faculty or for students. For age-old disciplines with established ways, such things can be neutral at best (we’ll refrain from ever calling them positive). But for a big tent to exist, rules and policies cannot be tolerated, because by their very nature they are restrictive. And by restricting what professors, researchers, and students can do—even if only in logistical terms—the big tent is shrunk to a small tent of generalizations ill-suited for pioneering work from different academic cultures. For iSchools to succeed, they must be recognized as one of the “loosest” units on campus, identified by the high-quality work they produce—the discoveries they make and the technologies they invent—not by the procedures they implement or the rules they codify. In fact, it is incumbent on iSchool faculty and students to produce unsalable work precisely because the work is developed from multiple cultures. Our peers must produce for an alarming array of achievements: the creation of books, journal articles, conference papers, design portfolios, and powerful software capable of helping humans make sense of seas

of data. Our technologies must be deep, deployable, usable, and useful. To achieve all of this will require a very big tent.

As we reflect on the iMovement, we are grateful to be in such a pioneering endeavor. We sense an urgent enthusiasm for defining the iMovement, and we can already see the explosive effect of assembling a diverse faculty working at the intersection of people and technology. If we are to overcome the challenges, we must name them. Information schools must be places where people and technology meet; where descriptive science and creative invention both occur (note to deans: the latter requires lab space!); where social scientists, engineers, and those from the humanities reinforce each other’s work; and where rules and policies stay at a conscientious minimum for the sake of the big tent. These things can and must happen for the iMovement to flourish with an unmistakable, original identity.



**ABOUT THE AUTHORS** Jacob O. Wobbrock is an assistant professor in the Information School and an adjunct assistant professor in the department of computer science and engineering at the University of Washington. His field of research is human-computer interaction, specifically human performance, input techniques, accessible computing, and mobile computing. Many of his contributions are in text entry, target acquisition, and gesture, often for people with disabilities or for mobile users on the go. He directs the AIM Research Group (<http://depts.washington.edu/aimgroup>).



Amy J. Ko is an assistant professor at the Information School and an adjunct assistant professor in the department of computer science and engineering at the University of Washington. Her research interests include human and cooperative aspects of software engineering, human-computer interaction, end-user programming, and computer-supported collaborative work. Her contributions are in helping both software users and software developers debug and understand software behavior.



Julie A. Kientz is an assistant professor in the Information School and the department of human centered design and engineering at the University of Washington. Her field of research is human-computer interaction, specifically in applications of computing in relation to health and education. She has recently focused on designing and evaluating technology for autism, families with young children, and individuals with sleep disorders. She directs the Computing for Healthy Living and Learning Lab (<http://depts.washington.edu/chilllab>).

[4] Snow, C.P. *The Two Cultures and the Scientific Revolution*. London: Cambridge University Press, 1959.