The Expanding Informatics Community: Blessing or Curse?

In their introductory comments to the 2001 ACMI Symposium published in this issue, Friedman, Ozbolt, and Masys note that the current fast-moving and turbulent times seem to be both a blessing and curse for biomedical informatics. Never before have so many modifiers appeared next to the term “informatics,” as collaborations spread out into an ever-widening array of professional and consumer medical/clinical/health fields. Their example of “public health informatics” is only one of dozens of examples that they could have chosen, in which an additional level of informatics specialization has occurred in the health sciences. Adding to the sense of expanding roles and opportunities, informatics teams play an essential role in strategic market needs analysis and in product design, development, and deployment within the clinical and biomedical commercial sectors. None of these features were prevalent in the informatics landscape less than 5 years ago.

From the published report, it appears that the initial concern of the conference organizers was how to prevent the field of informatics from fractionating into such small subsegments that nothing remains as a core shared culture that binds and unifies all informatics practitioners and investigators. From there, the conference seems to have both embraced the widening scope of informatics and created an overall four-part superstructure in which to place the rapidly expanding disparate pieces together. Thus, although the primary data look scattered, the ACMI conference attendees seemed to find four “clusters” in which to organize the overarching themes for widely disparate biomedical informatics activities.

Before commenting on some of the organizing themes that form the major contribution from the conference, I first would like to add a personal perspective on the underlying uneasy sense of “culture lost” or perhaps more appropriate “culture diluted” that motivated the conference initially.

The strength of any interdisciplinary activity is also its biggest weakness. Informatics professionals and practitioners bring to the table a highly unique blend of clinical, technical, and methodological skills and assumptions. A blending of the computer scientist, the engineer, the health policy maker, the clinical setting, and the evaluation scientist all went into making the unique beast of the informatician of earlier years. Today we need to add a dash of the molecular biologist, a pinch of the geneticist, a smidgen of the image scientist, and a sprinkle of the cognitive psychologist, and the list keeps growing. I frequently describe my role as analogous to a “United Nations translator,” facilitating communication and understanding between clinician-speak and techno-speak. I often would see first-hand that when such a role was missing, serious misunderstandings and lost collaboration ensued. I believe the proliferation of additional informatics groupings validates the growing recognition of the success and contribution from such an integrative approach.

However, I also have experienced directly the less settling side of being “jack of all trades, master of none” in both academic and commercial settings. Being neither the subspecialty domain expert and nor the professional software developer places the informatics professional in the position of being most able to see what needs to be done but least able to actually make it happen without significant contributions from others. Not one of the many projects to which I contributed significantly could have been accomplished without the extensive collaboration of others. It is still difficult to articulate precisely what component in a
large project I specifically “owned” rather than “facilitated,” and yet I am certain that my direct participation enabled a set of activities to occur successfully that otherwise would not have happened. Thus, in both academic and commercial settings, it is often difficult to claim the science or claim the engineering (depending on which of the two you are seeking to claim). But none of these issues of professional angst should be unfamiliar or uncomfortable to any professional who seeks to live in the middle of an interdisciplinary field. It is all part of the informatics blessing and curse—the “culture” of informatics that Friedman et al. are concerned may be “dissolved into the cultures of these expanding work settings.”

To turn to some of the organizing themes proposed by the conference attendees, here is a brief set of comments:

- **Genome-enabled science and health care.** Friedman states: “With a small number of exceptions, the community of scientists traditionally associated with medical informatics has not played a significant role in the work of structural genomics.” I would have constructed this statement differently: “With an extremely small number of exceptions, the community of scientists traditionally associated with structural genomics have not viewed informatics collaborators as more than providing IT infrastructure support so that the ‘real scientists’ such as computational biologists can perform the ‘real science’ more effectively.” The Symposium urges “the group historically identified with AMIA and ACM…to take aggressive steps to build collaborations with the communities of biologists who are extending their own expertise to include computational methods.” I wonder what it would take for both communities to meet halfway and still feel that they each bring unique skills to the collaboration.

- **System-mindedness and error reduction.** The Symposium participants call for additional multi-institutional evaluations of the effects of “real-time decision support and long-term learning from clinical data for quality improvement.” Although I do not disagree with the need for additional, well-designed, generalizable studies, it is interesting to wonder aloud why other technologies that have had far less prior research and have shown far less impact have nonetheless been widely adopted into clinical practice. This lack of adoption, despite strong preliminary evidence, also applies to the poor penetration of NIH consensus panel guidelines and protocols into routine clinical practice. Why are technologies with far less supporting data adopted rapidly while these technologies languish? My personal opinion is that systems-oriented technologies result in indirect cost avoidance rather than in direct cost savings or, better yet, new revenue streams. It is impossible to prove “what would have happened but didn’t” (prevention/cost avoidance); it is much easier to convince others of “what was happening but isn’t anymore” (intervention/cost reduction). Thus, the technologies of decision-support and error reduction are very tough sells to clinical thought leaders, health system board of directors, and corporate funders. Unfortunately, most of what we do is of the former ilk.

- **Moving beyond the guild mentality.** Of the four agendas, this one struck me as the boldest and the most naïve simultaneously. This agenda seeks to use informatics-enabled information access to break down the existing “guild mentality that views health professional practitioners as an estate externalized from general society and responsible more to its own norms and values than to society as a whole.” (For a moment, I thought Friedman et al. switched to describing lawyers and politicians.) Breaking down professional identities or “guilds” is a very different agenda from creating and supporting an informed, participatory patient/decision maker. Any guild, including the health professionals, is an extremely effective “barrier to entry” for excluding non-guild members, and is thus is a powerful means for creating a controlled shortage of skills that are “owned” and “certified” by the guild. Reducing these barriers effectively dilutes the exclusivity that guild members have over non-guild members. This potential reduction of the barrier to entry by non-guild members represents a significant economic threat if guild members are valued for the membership in an exclusive “club.” It is extremely difficult to imagine a scenario in which a professional organization would willingly surrender its “right” to determine membership criteria and hence guild exclusivity without stiff (as in, to-the-last-breathing-member) resistance. To do so would effectively surrender members’ hard-earned special privileges that come from “paying the price” of becoming a guild member.

Can the consumerism and personal activism implied by this agenda overcome this resistance in the health professions? One statistic—that health-related Web sites consistently are the most-often
visited URLs—suggests perhaps so. The experience of medscape.com, drkoop.com, and a large number of less-visible defunct or moribund consumer-health related electronic resources suggests otherwise—at least not in a commercially sustainable model.

The topic of the 2001 ACMI Symposium is timely. The concerns about “a field…that could…differentiate itself into oblivion” and the need to “reverse the trend to hyper-differentiation and replace it with a renewed integration” are real and are important. By proposing four action agendas, the Symposium participants emphasize some opportunities at the expense of others. This side effect is necessary for achieving focus. All successful enterprises must decide what is “core” and what is “not core” so as to preserve what is essential.

What seems to be most missing from the Symposium is a common understanding what makes informatics types so “special” compared with others. What do we as a group bring to the table irrespective of the adjective placed before the word “informatics?” In what way do we “think differently” from our collaborators and how can we make that difference appreciated, acknowledged, and valued quite apart from the domain knowledge in which we chose to apply our expertise? These are questions that both AMIA and ACMI have examined and discussed in the past. It seems that the rapidly growing depth and breadth of our field requires another look at those common themes that define our unique culture and that will endure no matter what changes occur within the field.

I congratulate the 2001 ACMI Symposium organizers for attacking this difficult issue “head-on.” Hearing directly from the readers about their thoughts on “What makes informatics researchers and investigators unique?” would be a fascinating exercise. I invite readers to send their responses directly to the JAMIA editor.—MICHAEL G. KAHN, MD, PhD

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