Are we doing the right research in biomedical and health informatics and are we doing it right?

Some thought-provoking and critical proposals to encourage scientific debate on the nature of good research in medical informatics

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Abstract. This panel intents to focus on two main questions. (1) What are highly original and relevant research fields for biomedical and health informatics, which are not adequately addressed by current medical informatics research? (2) Which methodological or technical approaches are not sufficiently used for trying to solve highly original and relevant research questions in our field, which aims to contribute to high-quality, efficient health care and to quality of life on the one hand and to progress in science on the other?

Keywords. Biomedical informatics, health informatics, medical informatics, research.

Introduction

Medical informatics, or biomedical and health informatics, has become an established scientific discipline (e.g. [1] - [5]). Through its international and national associations (as, e.g., documented in [6], [7]), and through its scientific conferences, journals and periodicals (e.g. [8]) researchers have been communicating their research results and
contributing to scientific progress for more than five decades. By, hopefully, maintaining high scientific and ethical standards in research and in reviewing and selecting research papers for publication, they thereby share new knowledge, mainly by presenting original research articles and systematic reviews on a wide range of research topics.

Medical informatics, or biomedical and health informatics, has a clear objective. As a discipline, "concerned with the systematic organization, representation, and analysis of data, information and knowledge in biomedicine and health care" it "aims to contribute to high-quality, efficient health care and to quality of life on the one hand and to progress in science on the other" ([9]).

In all disciplines there is a certain inertia in well-established research areas (for major research areas in medical informatics see e.g. [10]) to persist even as they suffer from diminishing impact. Likewise, there is frequently a tendency for researchers of a discipline to hold on to well-known research methodologies rather than adopting new methodological or technical approaches that may contribute more effectively to research outcomes and advance collective and interdisciplinary understanding (see e.g. [11], [12]). These observations prompt a number of questions that this panel will raise and address.

Questions

This panel proposes to discuss the following questions:

1. What are highly original and relevant research fields for biomedical and health informatics, which are, from each panelist’s viewpoint, not adequately addressed by current medical informatics research?
2. Which methodological or technical approaches are, from each panelist’s viewpoint, insufficiently used in trying to solve highly original and relevant research questions in our field?
3. Do we know about or can we guess at reasons for the above?
4. What could be consequences of change for research strategies?
5. What could be consequences of change on the knowledge and skills that have to be included in educational programs and courses in biomedical and health informatics (e.g. [13], [14])?
Focus of Discussion for the Speakers

The moderator (R.H.) has invited panelists who are leaders in our field with strong scientific backgrounds and experience with the international scope of our community. The present list of panelists may grow as plans of prospective invitees for attending MIE 2015 are confirmed.

The panel will be organized as follows:
- The moderator will first ask each panelist to comment on these questions.
- Then we propose to interact intensely with the audience in this debate, seeking their feedback and suggestions.

Impact of this Panel, Sustainability

Similar panels are planned to be organized at other conferences. It is our hope that in this panel some critical and provocative thoughts will be presented and discussed in order to contribute to the scientific debate on the nature of good research in biomedical and health informatics and its impact on the future of our field.

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