

# From the Editors: A New Vision for JERIC

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As the new Editors-in-Chief, we outline our vision for building JERIC to become the premier journal in computing education. Doing so will require *authors* who submit high-quality articles—their “best stuff”, *reviewers* who provide the feedback and guidance to ensure that each article embodies a scholarly approach to teaching and learning while being of practical use to the computing educator, and *readers* who read the articles, critically evaluate and discuss the findings with others, and adapt, adopt, and evaluate these findings in their own classrooms.

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This editorial marks our first as Co-Editors-in-Chief of the *Journal on Educational Resources in Computing (JERIC)* of the Association for Computing Machinery. We are honored to undertake the responsibility for co-editing an ACM journal, particularly one that is devoted to computing education. We are grateful for the work of Lillian “Boots” Cassel and Edward Fox in helping to establish JERIC in 2001 in their roles as the previous Editors-in-Chief.

Since our appointment in July, 2006, we have been making changes to the journal that reflect our vision of this journal and the role that it can fill. The

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purpose of this editorial is to convey this vision and how we plan to operationalize it during our tenure as Co-Editors-in-Chief.

Our vision is for JERIC to be the premier scholarly journal affecting the practice of computing education. The articles will address topics of interest to teaching practitioners; they will be rigorously reviewed based on its published guidelines; and they will be widely read and discussed.

The articles will cover a wide range of topics that reflects the diversity of computing education. This covers traditional computer science and its allied disciplines, including Informatics, Information Science, Human-Centered Computing, Computer Engineering, Software Engineering, and Information Systems. Beyond that, with computing's increasing pervasiveness, computing education also takes place in the context of most other academic disciplines and endeavors. We welcome articles in teaching operating systems, compilers, and other traditional areas of computer science, but we also seek quality manuscripts that address educating the next generation of computing practitioners across the range of computing disciplines.

As the application of computing has become more widespread, there have also been changes in the places in which computing education is occurring. Once restricted to universities in industrialized countries, this education is increasingly offered in high schools (and earlier grades), and in countries that have only recently experienced broad penetration of computers in the home and the workplace. Looking at a broad spectrum of educational practices under a range of constraints will help to illuminate not only general principles that can be transferred across contexts, but also the ways in which computing education must be creatively shaped to the specifics of the settings in which it is practiced.

Common among the articles that will be published in JERIC is our commitment to the scholarship of teaching and learning that each of the articles will embody. Our view of scholarship is informed by characteristics of scholarship described in *Scholarship Assessed* by Glassick, Huber, and Maeroff, by the core principles for undertaking educational research from *Scientific Research in Education* (from the National Research Council), and by principles for educational research articulated by Cronbach and Suppes (*Research for Tomorrow's Schools: Disciplined Inquiry for Education*). Our review criteria were developed from those in the *Journal of Engineering Education*, *Computer Science Education*, and the *International Computing Education Research Conference*. Common among these is that scholarship must address a question or issue of significance, that it is linked to previous relevant research, that the methods of investigation are appropriate to the problem studied, that the results are important, and that the reporting of the research is honest and careful. Additional and distinct scholarly characteristics of a journal on computing education are that the articles have a broad appeal to computing instructors and curriculum designers, provide sufficient details for these educational practitioners to replicate the approaches taken, and establish a clear connection to student learning that occurs in the use of whatever educational approach is described. Details about these expectations can be found at <http://www.acm.org/pubs/jeric/authorGuidelines.html>.

JERIC is, and will remain, a work-in-progress. We are taking steps to actively oversee the review process so that the time from submission to publication is

shortened. Our goal is that this entire process not exceed one year. We are completing the process of forming a new Editorial Board for the journal. Members of this board will be chosen for their expertise in and commitment to computing education, drawn from a diverse set of institutions and subdisciplines. We hope to announce the Board's membership in the near future.

Making JERIC into a premier, scholarly, and influential journal requires three things:

- (1) *authors* who submit high-quality articles—their “best stuff”,
- (2) *reviewers* who provide the necessary feedback and guidance to move the articles from manuscript to finished article, and
- (3) *readers* who read the articles, critically evaluate and discuss the findings with others, and adapt, adopt, and evaluate these findings in their own classrooms.

We need people to participate in all of these roles. We invite prospective authors to contact us with any questions about the appropriateness of JERIC as a publication forum, even at formative stages in the development of the manuscript and the scholarship that it represents. We invite people who are interested in serving as reviewers to email us, including in the message relevant qualifications and areas of expertise. And we invite all of you to read this journal and let us know what you think. We aim to make it worth your while.

#### In This Issue

Although we have jointly served in our role as EIC's since July, 2006, the current issue is the first in which an article appears that has moved through the entire production cycle during our tenure. This article, by David Hendry of the University of Washington, discusses a novel project-based case study that engages students in reasoning about and practicing with relational database and information retrieval system design. The case study, called *History Places*, “asks students to model the information structure of collections of media items, such as photographs and digital recordings, and to enable the operation of user-interface elements for interacting with media”. This case study represents the kind of contextually-rich authentic problem setting that effective teachers provide for their students. By requiring students to draw from their knowledge of human-centered design, data modeling, and the social embedding of specific software artifacts, it demonstrates how case studies can enable students to integrate knowledge across the entire Information Science curriculum.

We are also proud to publish the paper by Wesley Coelho and Gail Murphy of the University of British Columbia, describing *ClassCompass*, a collaborative software design tool that allows for both automated and manual critique of UML-based designs. The automated functionality is provided by a set of programmed critics, based on common errors that students make in generating designs. There are critics based on *structure* (e.g., there is a cycle in association relationships), *naming* (e.g., two classes have the same name), and *metrics* (e.g., a nonmediating class exceeds a constant number of associations). Critics

provide three kinds of feedback to students, simulating human design expertise: specific reference to those parts of the design that violate the critic's rule, the design rationale on which the critique is based, and a suggestion for how to fix the design error. The authors also describe the manual critique functionality, which complements the automated critique in two ways. First, it allows students and the instructor to provide critiques that are semantically-based, in contrast to the syntactically-based automated critiques. And second, it facilitates students to take on the role of critic, essential to their development of design expertise. By combining manual and automated critique, *ClassCompass* provides an environment supportive of student design-learning.

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