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**University of California
Los Angeles**

***Embracing
Diversity in
the Learning
Sciences***

Edited by

Yasmin B. Kafai
William A. Sandoval
Noel Enyedy
Althea Scott Nixon
Francisco Herrera

International Conference of the Learning Sciences

ICLS 2004

**Embracing Diversity
in the Learning Sciences**

PROCEEDINGS

Edited by

Yasmin B. Kafai
William A. Sandoval
Noel Enyedy
Althea Scott Nixon
Francisco Herrera

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PREFACE

More than a decade has passed since the First International Conference of the Learning Sciences (ICLS) held at Northwestern University in 1991. The conference has now become an established meeting place for researchers every two years. This year's conference is the first under the official sponsorship of the newly established International Society of the Learning Sciences (ISLS).

The theme of our conference is "Embracing Diversity in the Learning Sciences". As a field, the learning sciences have always drawn from a diverse set of disciplines to study learning in an increasingly diverse array of settings. Psychology, cognitive science, anthropology, and artificial intelligence have all contributed to the development of methodologies to study learning in schools, museums, and organizations. As the field grows, however, it increasingly recognizes the challenges to studying and changing learning environments across levels in complex social systems. This demands attention to new kinds of diversity in who, what, and how we study; and to the issues such diversity raises to developing coherent accounts of how learning occurs and can be supported in a multitude of social contexts, ranging from schools to families, and across levels of formal schooling from pre-school through higher education. The papers in these conference proceedings responded to the call.

This conference has received generous support from several organizations. At the University of California, Los Angeles, the Dean of the Graduate School of Education & Information Studies as well as several centers on campus (CENS, CDI, CRESST, DiME, ACCORD) contributed funds. The Center for Scholarly Technologies at the University of Southern California provided the online registration system. The ICLS 2004 Doctoral Consortium and the Junior Faculty Fellowships were supported by a grant from the National Science Foundation.

Many other individuals from our own institution and from universities around the world have contributed their time, advice, and energy to make this conference happen. We thank in particular the members of the doctoral consortium committee — Annemarie Palincsar, Tim Koschmann, Mike Rose and Cynthia Ching — and the chairs of our workshop section — Brian Foley and Sherry Hsi. Our team of graduate students deserves special recognition for their efforts many months before the conference in designing and maintaining the website, organizing the review process, and preparing conference events and schedules. Finally past conference chairs, the ISLS conference committee, and Janet Kolodner were always available for consultation.

We hope that this conference will spark new ideas, expand our community, and broaden our discussions within the learning sciences.

Yasmin B. Kafai
William A. Sandoval
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The learning sciences have drawn from a diverse set of disciplines to study learning in an increasingly diverse array of settings. As the field grows, however, it increasingly recognizes the challenges to studying and changing learning environments across levels in complex social systems. This demands attention to new kinds of diversity in who, what, and how we study and to the issues such diversity raises to developing coherent accounts of how learning occurs and can be supported in a multitude of social contexts, ranging from schools to families, and across levels of formal schooling from pre-school through higher education.

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