

Preface

This volume contains the papers accepted for presentation at **BIOT-05**, *The 2nd Symposium on Bioinformatics and Biotechnology: A Community and Academic Forum* held on 20th – 21st of October in Colorado Springs, Colorado. BIOT-05 is a part of the state-wide Governor Bill Owens inspired “Advanced Colorado Tech Week” being celebrated around Colorado during the week of 17-21st October, 2005. October 20th is devoted to an SBIR/STTR workshop in the context of Biotechnology and Bioinformatics. The afternoon of the first day is also bringing together educators, students and community members to discuss the introduction of Biotechnology and Bioinformatics in the K-12 curriculum. The second day is devoted to scientific and technical presentations that have been carefully reviewed or invited. The bulk of the proceedings contain the papers presented on the second day.

Biotechnology is starting to have a major impact on society. Innovative drugs have come to the marketplace attempting to cure and control diseases that afflict us. Products of food biotechnology have created seeds and plants that produce tastier and healthier food with fewer environmental impacts. With the completion of sequencing of the human genome, bioinformatics and the related field of computational biology are also playing very important roles in science, technology, and society. Huge amounts of information are being produced continually by gene-sequencing experiments, combinatorial chemistry synthesis, gene-expression investigations and proteomics studies. Research and development in bioinformatics attempt to distill useful information from mountains of data. Bioinformatics is a result of convergence of biology and computing. Impacts of bioinformatics are being felt in many areas such as the discovery of new genes responsible for diseases, design and development of new drugs, and the study of origins of life in terms of phylogenetic trees.

In organizing this symposium, we have several objectives. First, we want to create a platform where researchers in biotechnology and bioinformatics can share their research with other academicians, individuals from industry, as well as interested individuals from the community at large. We want to organize a small, integrated and high-quality symposium where individuals such as biologists, computer scientists, mathematicians, lawyers, and social scientists can come together and learn from each other. Second, we want to create a tradition whereby we can continue to have such a symposium every year in a beautiful part of the country where we want to foster research and development in biotechnology and bioinformatics. For this purpose, we have already tentatively scheduled an extended two-day symposium next year in August. There are no biotechnology and bioinformatics symposiums or conferences of note in the Rocky Mountain area and we will like our symposium to grow and become nationally recognized. We also want to reach out internationally.

This is our second effort and we are quite pleased at the results. We were able to put together a Program Committee with about 40 members from around the nation including the University of Pennsylvania, Rice University, Louisiana State, Harvard University, University of Colorado, University of California at Santa Barbara, and Georgia State University. We were also lucky to get several individuals from local as well as national companies on the Program Committee. We also have international participants from Russia, Japan, Taiwan, Canada and India on the Program Committee. We received 30 papers from around the US, Canada, India and Russia. Due to the fact that we have only one day for the symposium, and we did not want to break into parallel sessions so that attendees are exposed to interdisciplinary presentations, we were able to accept only 12 out of 25 papers for presentation, giving us an acceptance rate of about 40%. It is to be noted that selected papers from the BIOT-04 symposium will be soon published as a special issue of the Journal of Bioinformatics Research and Applications (IJBRA). Thanks to Dr. Yi Pan, a Program Committee member who also happens to be the Editor-in-Chief of IJBRA.

I would like to thank all the members of the Program Committee, every author who submitted papers and abstracts, everyone who is attending this symposium, and everyone who has a poster or is giving an oral presentation. It is wonderful to have you all here. We are grateful to the Colorado Institute for Technology Transfer and Implementation (CITTI) for helping organize this symposium and the University of Colorado at Colorado Springs for providing us with the computing, office and other facilities. We are also very thankful to the SAP, Inc.; Holme, Roberts and Owen; Sparks Willson; the University of Colorado Bioenergetics Institute; the University of Colorado Center for Biotechnology and Bioinformatics; and Newellink, Inc., for their sponsorship. Finally, my thanks are to Jeff Rogers of Colorado Springs, Colorado, who designed the cover for us. It is a reproduction of the famous “The Thinker” by Rodin side by side with a human cell. It represents the nature of the topic with which the participants in BIOT-05 are intimately acquainted.

Welcome to BIOT-05 and our fair City of Colorado Springs. We are hoping to put together BIOT-06 outside of Colorado. We have had requests from Atlanta, Georgia and Salt Lake City, Utah. We will keep you posted.

Jugal Kalita (jkalita@uccs.edu, <http://www.cs.uccs.edu/~kalita>)

On Behalf of BIOT-05 Program Committee

Department of Computer Science, University of Colorado at Colorado Springs, 1420 Austin Bluffs Parkway

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