

## CONTENTS

PREFACE	v
ORGANIZING COMMITTEES	vii
The Grid as a “Ba” for Biomedical Knowledge Creation <i>A. Konagaya</i>	1
Cyberinfrastructure for the Biological Sciences (CIBIO) <i>J. C. Wooley</i>	11
Upcoming Standards for Data Analysis in Bioinformatics <i>M. Senger, T. Oinn and P. Rice</i>	22
Parallel and Pipelined Database Transfer in a Grid Environment for Bioinformatics <i>K. Satou, S. Tsuji, Y. Nakashima and A. Konagaya</i>	32
Controlling the Chaos: Developing Post-Genomic Grid Infrastructures <i>R. Sinnott and M. Bayer</i>	50
Do Grid Technologies Help Life Sciences? Lessons Learnt from the BioGrid Project in Japan <i>S. Date, K. Fujikawa, H. Matsuda, H. Nakamura and S. Shimojo</i>	65
A Framework for Biological Analysis on the Grid <i>T. Okumura, S. Date, Y. Takenaka and H. Matsuda</i>	79
An Architectural Design of Open Genome Services <i>R. Umetsu, S. Ohki, A. Fukuzaki, A. Konagaya, D. Shinbara, M. Saito, K. Watanabe, T. Kitagawa and T. Hoshino</i>	87
Maximizing Computational Capacity of Computational Biochemistry Applications: The Nuts and Bolts <i>T. Moreland and C. J. K. Tan</i>	99
Solutions for Grid Computing in Life Sciences <i>U. Meier</i>	111

Streamlining Drug Discovery Research by Leveraging Grid Workflow Manager	121
<i>A. Ghosh, A. Chakrabarti, R. A. Dheepak and S. Ali</i>	
MolWorks+G: Integrated Platform for the Acceleration of Molecular Design by Grid Computing	134
<i>F. Konishi, T. Yagi and A. Konagaya</i>	
Proteome Analysis Using iGAP in Gfarm	142
<i>W. W. Li, P. W. Arzberger, C. L. Yeo, L. Ang, O. Tatebe, S. Sekiguchi, K. Jeong, S. Hwang, S. Date and J.-H. Kwak</i>	
GEMSTONE: Grid Enabled Molecular Science Through Online Networked Environments	155
<i>K. Baldrige, K. Bhatia, B. Stearn, J. P. Greenberg, S. Mock, S. Krishnan, W. Sudholt, A. Bowen, C. Amoreira and Y. Potier</i>	
Application-Level QoS Support for a Medical Grid Infrastructure	176
<i>S. Benkner, G. Engelbrecht, I. Brandic, R. Schmidt and S. E. Middleton</i>	
Large-Scale Simulation and Prediction of HLA-Epitope Complex Structures	189
<i>A. E. H. Png, T. S. Tan and K. W. Choo</i>	
Construction of Complex Networks Using Mega Process GA and Grid MP	197
<i>Y. Hanada, T. Hiroyasu and M. Miki</i>	
Adapting the Perceptron for Non-Linear Problems in Protein Classification	212
<i>M. W. K. Chew, R. Abdullah and R. A. Salam</i>	
Process Integration for Bio-Manufacturing Grid	220
<i>Z. Q. Shen, H. M. Lee, C. Y. Miao, M. Sakharkar, R. Gay and T. W. Tan</i>	