

CONTENTS

Guest Lecturers 6

Student Papers 7 – 99

Algorithmic Self-Assembly of Circuits 7

Michael deLorimier, Alexandre Mathy, Dustin Reishus, Rolfe Schmidt, Bilal Shaw, and Lin Chin Wong

Artificial Life Through Evolutionary Computation 14

Bryan Blumenkopf and Ashley Holtgraver

A Living Game of Life 19

Mike Blain and Kim Mizuno

Exploiting Shortcuts in Fixed Wire Programmable Network 24

Helia Naeimi

How Common is Turing-Universal Behavior? 30

Ming-Shr Lin, Gaurav Saxena, Viral Shah, and Geoff Wozniak

Learning with Noise: Cellular Automata Approach 42

Yelizaveta Gorstko

On the Designing of Proteins that Target Specific DNA Sequences 51

Mirela Andronescu, Tiberiu Dan Onuta, Yingley Zhao

Quantum Entanglement as a Resource for Quantum Communication 62

Murali Kota

Self-Assembling Nanotube-Based Circuits with Collagen Substrates 70

Sharlene Coleman, David Elihu, Sarah Frost, Todd Hoffenberg, Ziyad Jabaji, David Karig, Elena Losseva, and Don Riggs

Using Biological Systems as an Analog-to-Digital Converter 77

David Lee, Robert Lin, and Yolanda Zhang

Using Gap Junctions as Basic Building Blocks 84

Viral Shah and Swapnika Ramu

Index to Students 100