FIRST ANNUAL MPP WORKSHOP SCHEDULE, JANUARY 8-10, 2009

Thursday, January 8, 2009

6:30pm-8:00pm Hors d'oeuvres

8:00pm-9:30pm Introduction (Winfree) and Keynote talk (Cardelli)

Luca Cardelli: "Molecules as Automata"

Friday, January 9, 2009

9:00am-10:30am Three talks on Feedback & Design (each 20 min + 10 min Q/A)

Richard Murray: "Design of biomolecular feedback systems"
Domitilla Del Vecchio: "Modular Cell Biology: Retroactivity and Insulation"
Eric Klavins: "Designing, debugging, and evolving biochemical systems"

10:30am-11:00am Break / posters

11:00am-12:30pm Three talks on Devices & Systems (each 20 +10 min Q/A)

Masami Hagiya: "Molecular programming in Japan"
Josh Bishop: "An improved autonomous DNA nanomotor"
Harry Choi: "Multiplexed in situ amplification for bioimaging via triggered self-assembly"

12:30pm-4:00pm Lunch and afternoon free

4:00pm-6:00pm Four talks on Hybridization Cascades (each 20 +10 min Q/A)

Georg Seelig: "DNA logic circuits"
Dave Zhang: "Toehold exchange and DNA strand displacement kinetics"
Lulu Qian: "A simple DNA gate motif for synthesizing large-scale circuits"
Kevin Oishi: "Approximating linear systems with DNA reactions"

6:00pm-7:30pm Poster session with appetizers

7:30pm-9:00pm Dinner

9:00pm-9:30pm Discussion: Interfaces with biology, chemistry, materials

9:30pm-10:00pm Discussion: Theoretical challenges for molecular programming

Saturday, January 10, 2009

9:00am-10:30am Three talks on Design & Analysis (each 20 +10 min Q/A)

Niles Pierce: "Algorithmic ingredients for the compilation of dynamic nucleic acid systems"
Victor Beck: "Coarse-grained kinetic analysis of dilute solutions of interacting nucleic acid strands"
Anne Condon: "New energy parameters for RNA secondary structure prediction"

10:30am-11:00am Break / posters

11:00am-12:30pm Three talks on Stochastics (each 20 + 10 min Q/A)

Shuki Bruck: "Stochastic circuits"
Daniel Wilhelm: "Synthesis of stochastic circuits"
Marc Riedel: "Synthesizing sequential stochastic computation with biochemistry"

12:30pm-1:30pm Lunch

1:30pm-3:00pm Three talks on Geometrical Structures (each 20 + 10 min Q/A)

William Shih: "Self-assembly of DNA into nanoscale three-dimensional shapes"
Paul Rothemund: "Beyond Watson and Crick: programming self-assembly using geometry-based binding interactions"
Erik Winfree: "Toward molecular programming with spatial and temporal organization"

3:00pm-3:30pm Discussion: Challenges to scaling up synthetic systems

3:30pm ----> Free to disperse or stay for ad-hoc brainstorming sessions