PROGRAM
CPLC SUMMER SCHOOL 2013

Sunday July 14 – ARRIVAL

Monday July 15 – Basic Training Day 1

8:00 – 8:40 am Registration and Continental Breakfast (Hallway outside Loomis 144)
8:40 – 9:00 am Welcome – Jaya Yodh, Director of Education and Outreach (Loomis 144)
9:00 – 10:00 am Taekjip Ha
Lecture 1: Introduction to the CPLC, smFRET, & SiMPull (Loomis 144)
10:00 – 11:00 am Danielle Chandler
Lecture 2: VMD and the computational microscope (Loomis 144)
11:00 – 11:30 am Photo Shoot (Outside Loomis Courtyard)
11:30 – 1:15 pm Lunch (provided) & Poster Session (Physics Interaction Room, Loomis 204)
1:15 – 6:30 pm MINI-COURSES: OPTICS, VMD, & MATLAB
(refer to individual schedules – courses are taught in 2.5 hour blocks from 1:15 - 3:45 pm & 4:00 – 6:30 pm)
I. VMD (Beckman 3rd Floor - Schulten Innovation Courtyard II)
II. OPTICS (Ha Lab Station Loomis 108B & Selvin Lab Station Loomis 363)
III. MATLAB (Loomis 257)
Beginner 1:15 – 3:45 pm; Intermediate 4:00 – 6:30 pm

7:00 – 9:00 pm Opening Reception, The Bread Company
706 South Goodwin Avenue, Urbana, IL 61801

Tuesday July 16 – Basic Training Day 2

8:30 – 9:30 am Yann Chemla
Lecture 3: Optical Traps: Molecules to Cells (Loomis 144)
9:30 – 10:00 am Coffee Break (Hallway Outside Loomis 144)
10:00 - 11:00 am Alek Aksimentiev
Lecture 4: Computational Microscopy of Biomolecular Systems (Loomis 144)
11:00 am - 12:00 pm Piyush Labhsetwar
Lecture 5: Stochastic simulations of cellular processes: From single cells to colonies (Loomis 144)
12:00 – 1:15 pm Lunch (provided) & Poster Session (Physics Interaction Room, Loomis 204)

1:15 – 6:30 pm MINI-COURSES: OPTICS, VMD, & LABVIEW
(refer to individual schedules – courses are taught in 2.5 hour blocks from 1:00 - 3:30 pm and 3:45 – 6:15 pm)
I. VMD (Beckman 3rd Floor - Schulten Innovation Courtyard II)
II. OPTICS (Ha Lab Station Loomis 108B & Selvin Lab Station Loomis 363)
IV. LABVIEW (Loomis 257)

6:30 – 7:15 pm Dinner (on your own)

7:15 – 9:45 pm MINI-COURSE (OPTICS)
II. OPTICS (Ha Lab Station Loomis 108B & Selvin Lab Station Loomis 363)

Wednesday July 17 – Advanced Module Day 1

8:00 am- Evening Advanced Modules in Assigned Labs (refer to individual module handouts)

<table>
<thead>
<tr>
<th>Advanced Module</th>
<th>Faculty Lab(s)</th>
<th>Building &amp; Room</th>
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<tbody>
<tr>
<td>A. Computational Analysis of Cellular Structures and Processes</td>
<td>Schulten, Luthey-Schulten, &amp; Aksimentiev</td>
<td>Beckman 3rd Flr - Schulten Innovation Courtyard II</td>
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<tr>
<td>B. Eigenfish: neural dynamics of fish locomotion</td>
<td>Gruebele &amp; Chemla</td>
<td>Loomis 118 (enter thru 128)</td>
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<td>C. Following the fate of individual viral genomes within the infected cell</td>
<td>Golding</td>
<td>Loomis 393</td>
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<td>D. Intracellular Diffusion and Nucleoid Organization</td>
<td>Kuhlman</td>
<td>Loomis 393</td>
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<tr>
<td>E. Membrane Dynamics in Living Fruit Fly Embryos</td>
<td>Sokac</td>
<td>IGB 121</td>
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<tr>
<td>F. Optical trapping &amp; fluorescence imaging of individual swimming cells</td>
<td>Golding &amp; Chemla</td>
<td>Loomis 128</td>
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<tr>
<td>G. Optical trapping – single-molecule force spectroscopy of protein-DNA interaction</td>
<td>Chemla</td>
<td>Loomis 128</td>
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<tr>
<td>H. SiMPull: Single-Molecule Pull-Down</td>
<td>Ha</td>
<td>Loomis 108</td>
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<tr>
<td>I. Single-Molecule Fiona</td>
<td>Selvin</td>
<td>Loomis 364</td>
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<tr>
<td>J. Single-Molecule FRET</td>
<td>Ha &amp; Myong</td>
<td>Loomis 108 &amp; DCL 1230</td>
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<tr>
<td>K. Super-Resolution Fluorescence Microscopy</td>
<td>Ha</td>
<td>Loomis 108</td>
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8:30 – 9:30 am Paul Selvin (Loomis 144)
Lecture 6: Super-Accuracy & Super-Resolution via Fluorescence Microscopy
9:30 – 10:30 am Anna Sokac
Lecture 7: Membrane Dynamics in Living Fruit Fly Embryos (Loomis 144)

Thursday July 18 – Advanced Module Day 2

8:00 am - Evening Advanced Modules in Assigned Labs (refer to individual module handouts)

8:30 – 9:30 am Martin Gruebele
Lecture 8: Eigenfish: neural dynamics of fish locomotion (Loomis 144)

9:30 – 10:30 am Ido Golding
Lecture 9: A quantitative narrative for the living cell: From precise measurements to general principles

Friday July 19 – Advanced Module Day 3

8:00 am - Evening Advanced Modules in Assigned Labs (refer to individual module handouts)

8:30 – 9:30 am Aaron Hoskins
Lecture 10: Tagging and Labeling Methods for Single Molecule Studies in vivo and in vitro (Loomis 144)

9:30 – 10:30 am Tom Kuhlman
Lecture 11: Intracellular Diffusion and Nucleoid Organization (Loomis 144)

Saturday July 20 – Advanced Module Day 4

8:00 – 11:30 am Advanced Modules in Assigned Labs (refer to individual module handouts)

11:30 am – 12:30 pm Student Presentations (refer to separate schedule) (Loomis 144)

12:30 – 1:00 pm Lunch (provided) & fill out student evaluations (Hallway Outside Loomis 144)

1:00 – 3:05 pm Student Presentations (continued) (Loomis 144)

3:05 – 3:35 pm Coffee Break (Hallway Outside Loomis 144)

3:35 – 4:45 pm Student Presentations (continued) (Loomis 144)

7:00 pm Dinner party at home of Taekjip Ha
1703 Byrnebruk Dr. Champaign, IL 61822

Sunday July 21 – DEPARTURE