

## Program for *Materials and the Imagination*

### **Monday the 3<sup>rd</sup>**

5:00 – 7:00 Registration at the Aspen Center for Physics

*Dinner on your own*

### **Tuesday the 4<sup>th</sup>**

*Morning* (Chair: Leo Radzihovsky)

8:30 - 9:20 Michael Brenner, "The Mechanism of a Splash"

9:20 - 10:10 William Irvine, "Colloidal crystals on curved surfaces: Pleats and fractionalization"

10:25 - 11:15 Erwin Frey, "Minimal premises for the evolution of stable cooperation in structured populations"

*Lunch on your own*

*Afternoon* (Chair: Vincenzo Vitelli)

4:30 - 5:20 Anatoli Polkovnikov, "Universal dynamics in thermally isolated driven systems"

5:20 - 5:50 Thomas Butler, "Suppression of long range inhibitory connections in the visual cortex stabilizes normal visual cortex function"

6:10 - 6:40 Anna Melbinger, "Evolutionary Dynamics in Growing Populations"

6:40 - 7:10 Guangnan Meng, "Phase transitions (of colloidal particles) on curved surfaces"

*Dinner on your own*

### **Wednesday the 5<sup>th</sup>**

*Morning* (Chair: Jonathan Selinger)

8:00 - 8:50 Greg Grason, "Geometric Non-linearities in Filamentous Assemblies: Twist, Frustration and Topological Defects"

8:50 - 9:40 Kate Stebe, "Oriented assembly of microparticles by capillarity"

10:00 - 10:30 Rebecca Christianson, "Bees and Biofilms: interdisciplinary research with undergraduates"

10:30 - 11:20 Paul Chaikin, "Self-Replication without Life"

*Lunch on your own*

1:30 - 3:45 Poster Session in Smart Hall

4:30 Meet the Physicists Session (Brenner and Liu) at WHEELER OPERA HOUSE

5:30 Public Lecture, David Nelson, "Gene Surfing and Survival of the Luckiest" at WHEELER OPERA HOUSE (Introduction by Andrea Liu, General Member of ACP)

*Dinner on your own*

### **Thursday the 6<sup>th</sup>**

*Morning* (Chair: Eleni Katifori)

8:00 - 8:50 Andrea Liu, "The physics of motility in cells: a tale of two tails"

8:50 - 9:40 Cristina Marchetti, "Active Fluids: from Microscopics to Hydrodynamics"

10:00 - 10:30 Jorn Dunkel, "Noise limits the hydrodynamic horizon of bacteria"

10:30 - 11:00 Kai Sun, "Emerging conformal symmetry and zero-energy edge modes in isostatic lattices"

*Lunch on your own*

*Afternoon* (Chair: Subir Sachdev)

4:30 - 5:20 Eduardo Fradkin, "Electronic Liquid Crystal Phases in Strongly Correlated Systems"

5:40 - 6:30 Vladimir Hinkov, "Superconductivity and competing order in correlated-electron materials"

6:30 - 7:20 Nicolas Doiron-Leyraud, "Broken rotational symmetry in high-Tc superconductors"

*Conference Banquet*

### **Friday the 7th**

*Morning* (Chair: Thomas Halsey)

8:00 - 8:50 Eun-Ah Kim, "Electronic nematic and smectic phenomena in high Tc superconductors"

8:50 - 9:40 Mehran Kardar, "Entropic force of a polymer attached to a conical tip"

10:00 - 10:30 Doron Gazit, "The structure of Graphene: statistical mechanics of an electronic crystalline membrane"

10:30 - 11:20 David Weitz, "Active Diffusion and Non-linearities in Cells: Molecular Motors Mix it Up"

*Lunch on your own*

*Afternoon* (Chair: Randy Kamien)

5:00 - 5:50 Sharon Glotzer, "Some Assembly Required"

5:50 - 6:20 Xiaoming Mao, "Criticality and isostaticity in fiber networks"

6:40 - 7:30 L Mahadevan, "Simple aspects of growth and form"

*Dinner on your own*

### **Saturday the 8th (all day session)**

8:40 - 9:30 Françoise Brochard

9:30 - 10:20 Curtis Callan

10:40 - 11:30 Bertrand Halperin

11:30 - 12:20 Stanislas Leibler

*Lunch at the Center*

2:00 - 2:50 Tom Lubensky

2:50 - 3:40 Robert Meyer

4:00 - 4:50 Wim van Saarloos

4:50 - 5:40 Paul Steinhardt

6:30 *Birthday Reception and Banquet*