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Week 1, July 1 – 5, 2024

Sunday, June 30th

18:30 – 20:30 **Registration mixer with refreshments**
11th floor, Gamow Tower Common Room

Monday, July 1st

8:30 – 9:00 **Organizers**
Welcome and School Introduction

9:00 – 10:30 **W. Jacobs**
Biomolecular Condensates

10:30 – 11:00 Coffee break – questions / interaction with speaker

11:00 – 12:30 **M. Deserno**
Membrane Elasticity and Thermodynamics

12:30 – 13:45 Lunch

14:00 – 15:30 **P. Bassereau**
Protein self-organization

15:30 – 17:00 **Participant Introductions**

18:30 – 18:55 **Poster Blurbs I**
Duane G130

19:00 – 22:00 **Poster Session I**
11th Floor Commons Room, Gamow Tower

Tuesday, July 2nd

9:00 – 10:30 **W. Jacobs**
Biomolecular Condensates

10:30 – 11:00 Coffee break

11:00 – 12:30 **M. Deserno**
Membrane Elasticity and Thermodynamics

12:30 – 13:45 Lunch

14:00 – 15:30 **P. Bassereau**
Protein self-organization

18:00 – 20:30 **Dessert on Flagstaff Mountain**
Busses leave south of C4C at 6pm

Self-Organizing Matter July 1 – July 26, 2024

Detailed Schedule All lectures are in Duane Physics Room G130

Wednesday, July 3rd

| | |
|---------------|---|
| 9:00 – 10:30 | W. Jacobs <i>Biomolecular Condensates</i> |
| 10:30 – 11:00 | Coffee break |
| 11:00 – 12:30 | M. Das <i>Mechanical transitions in cells and tissues</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | E. Matsumoto <i>Geometry of shape change</i> |
| 15:30 – 15:45 | Break |
| 15:45 – 17:15 | Problem solving session – A. Saric |

Thursday, July 4th

| | |
|---------------|---|
| 9:00 – 10:30 | M. Das <i>Mechanical transitions in cells and tissues</i> |
| 10:30 – 11:00 | Coffee break |
| 11:00 – 12:30 | M. Deserno <i>Membrane Elasticity and Thermodynamics</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | E. Matsumoto <i>Geometry of shape change</i> |

Friday, July 5th

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|---------------|---|
| 9:00 – 10:30 | E. Matsumoto <i>Geometry of shape change</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | M. Das <i>Mechanical transitions in cells and tissues</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | Problem solving / What have we learned this week? – A. Saric |

Week 2, July 8 – 12, 2024

Monday, July 8th

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|---------------|--|
| 9:00 – 10:30 | M.C. Marchetti <i>Dense active matter</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | N. Mitchell <i>Mechanics of morphogenesis</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | D. Zwicker <i>Chemically active droplets</i> |
| 18:30 – 18:55 | Poster Blurbs II <i>Duane G130</i> |
| 19:00 – 22:00 | Poster Session II <i>11th Floor Commons Room, Gamow Tower</i> |

Tuesday, July 9th

| | |
|---------------|---|
| 9:00 – 10:30 | M.C. Marchetti <i>Dense active matter</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | N. Mitchell <i>Mechanics of morphogenesis</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | D. Zwicker <i>Chemically active droplets</i> |
| 19:00 – 21:30 | Catered dinner <i>11th Floor Commons Room, Gamow Tower</i> |

Self-Organizing Matter July 1 – July 26, 2024

Detailed Schedule All lectures are in Duane Physics Room G130

Wednesday, July 10th

| | |
|---------------|--|
| 9:00 – 10:30 | D. Zwicker <i>Chemically active droplets</i> |
| 10:30 – 11:00 | Coffee break |
| 11:00 – 12:30 | N. Mitchell <i>Mechanics of morphogenesis</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | K. Wan <i>Out-of-equilibrium dynamics and organization of active filaments</i> |
| 15:30 – 15:45 | Break |
| 15:45 – 17:15 | Problem solving session – M. Gardel |

Thursday, July 11th

| | |
|---------------|--|
| 9:00 – 10:30 | M.C. Marchetti <i>Dense active matter</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | K. Wan <i>Out-of-equilibrium dynamics and organization of active filaments</i> |
| 12:30 – 13:45 | Lunch |

Friday, July 12th

| | |
|---------------|--|
| 9:00 – 10:30 | K. Wan <i>Out-of-equilibrium dynamics and organization of active filaments</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | M. Gardel <i>Active & Adaptive matter of Adherent Cells</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | Problem solving / What have we learned this week? – M. Gardel |

Sunday, July 14th

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|---------------|--|
| 19:00 – 20:30 | M. Prakash <i>Mechanical intelligence: origins and evolution of complex behavior in non-neuronal systems</i> |
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Week 3, July 15 – 19, 2024

Monday, July 15th

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|---------------|---|
| 9:00 – 10:30 | U. Schwarz <i>Active contractility of adherent cells</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | M. Manning <i>Emergent mechanical properties of biological tissues</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | M. Murrell <i>Energetic constraints on biological assembly and motion</i> |
| 19:00 – 20:00 | Public Lecture: M. Prakash <i>Duane Physics G1B20</i> |

Tuesday, July 16th

| | |
|---------------|---|
| 9:00 – 10:30 | U. Schwarz <i>Active contractility of adherent cells</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | M. Manning <i>Emergent mechanical properties of biological tissues</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | M. Murrell <i>Energetic constraints on biological assembly and motion</i> |
| 18:30 – 18:55 | Poster Blurbs III <i>Duane G130</i> |
| 19:00 – 22:00 | Poster Session III <i>11th Floor Commons Room, Gamow Tower</i> |

Wednesday, July 17th

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|---------------|--|
| 9:00 – 10:30 | J. Yeomans <i>Active matter models of mechanobiology</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | M. Manning <i>Emergent mechanical properties of biological tissues</i> |
| 12:30 – 13:45 | Lunch |

Self-Organizing Matter July 1 – July 26, 2024

Detailed Schedule All lectures are in Duane Physics Room G130

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|---------------|---|
| 14:00 – 15:30 | M. Murrell <i>Energetic constraints on biological assembly and motion</i> |
| 15:30 – 15:45 | Break |
| 15:45 – 17:15 | Problem solving session – S. Banerjee |

Thursday, July 18th

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|---------------|--|
| 9:00 – 10:30 | J. Yeomans <i>Active matter models of mechanobiology</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | U. Schwarz <i>Active contractility of adherent cells</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | E. Hannezo <i>Collective cell migration</i> |

Friday, July 19th

| | |
|---------------|---|
| 9:00 – 10:30 | J. Yeomans <i>Active matter models of mechanobiology</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | E. Hannezo <i>Collective cell migration</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | Problem solving / What have we learned this week? – S. Banerjee |

Week 4, July 22 - July 26, 2024

Monday, July 22nd

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|---------------|--|
| 9:00 – 10:30 | Y. Mao <i>Tissue growth, repair and morphogenesis</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | A. Liu <i>Learning metamaterials</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | I. Cohen <i>Viscosity metamaterials, biological tissues and microscopic robots</i> |

Tuesday, July 23rd

| | |
|---------------|--|
| 9:00 – 10:30 | Y. Mao <i>Tissue growth, repair and morphogenesis</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | I. Cohen <i>Viscosity metamaterials, biological tissues and microscopic robots</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | A. Liu <i>Learning metamaterials</i> |

Wednesday, July 24th

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|---------------|---|
| 9:00 – 10:30 | D. Durian <i>Autonomous learning metamaterials</i> |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | V. Vitelli <i>Odd elasticity and Non reciprocal phase transitions</i> |
| 12:30 – 13:45 | Lunch |
| 14:00 – 15:30 | A. Liu <i>Learning metamaterials</i> |
| 15:30 – 15:45 | Break |
| 15:45 – 17:15 | Problem solving session – E. Dufresne |

Self-Organizing Matter July 1 – July 26, 2024

Detailed Schedule All lectures are in Duane Physics Room G130

Thursday, July 25th

9:00 – 10:30

D. Durian

Autonomous learning metamaterials

10:30 – 11:00

Coffee Break

11:00 – 12:30

V. Vitelli

Odd elasticity and Non reciprocal phase transitions

12:30 – 13:45

Lunch

14:00 – 15:30

I. Cohen

Viscosity metamaterials, biological tissues and microscopic robots

Friday, July 26th

9:00 – 10:30

D. Durian

Autonomous learning metamaterials

10:30 – 11:00

Coffee Break

11:00 – 12:30

V. Vitelli

Odd elasticity and Non reciprocal phase transitions

12:30 – 13:45

Lunch

14:00 – 15:00

What have we learned this month? – E. Dufresne