2011 Boulder Summer School

Hydrodynamics

Detailed Schedule

All lectures are in **Duane Physics Room G125**

Week 1, July 4-8 - Introduction to Fluid Mechanics

Tuesday, July 5th

8:30 - 9:00	**Leo Radzihovsky**
	Welcome and Introductions
9:00 - 10:30	**Michael Brenner**
	Intro to Fluid Mechanics
11:00 - 12:30	**Detlef Lohse**
	Bubble Puzzles
14:30 - 16:00	**Student Introductions**

Wednesday, July 6th

9:00 - 10:30	**Michael Brenner**
	Intro to fluid mechanics, continued
11:00 - 12:30	**Kate Stebe**
	Surfactants and Marangoni Effects
14:30 - 16:00	**Laurette Tuckerman**
	Hydrodynamic Instabilities
19:00 - 21:30	**Poster Session I**
	11th Floor Commons Room

Thursday, July 7th

9:00 - 10:30	**Laurette Tuckerman**
	Pattern Formation
11:00 - 12:30	**Detlef Lohse**
	Thermal Convection (turbulence)
14:30 - 16:00	**David Quere**
	Capillarity and Wetting
19:00 - 20:00	**Michael Brenner**
	Public Lecture - Science and Cooking - Room G1B20

Friday, July 8th

9:00 - 10:30	**Kate Stebe**
	Capillary interactions between particles
11:00 - 12:30	**David Quere**
	Capillarity and Wetting
14:30 - 16:00	**Nigel Goldenfeld**
	Drag on Moving Bodies and the Renormalization Group
18:00 - 19:00	**BBQ**
	Sewall Hall

Week 2, July 11-15 - Turbulence

Monday, July 11th

9:00 - 10:30 **Dan Lathrop**
What is turbulence

11:00 - 12:30 **Nigel Goldenfeld**
Introduction to turbulence (statistical theory)

14:30 - 16:00 **Bruno Eckhardt**
Turbulent transition

19:00 - 20:30 **Research talks**

Tuesday, July 12th

11:00 - 12:30 **Annick Pouquet**
How many types of turbulence are there?

14:30 - 16:00 **Nigel Goldenfeld**
Theoretical advances in the statistical theory of turbulence

Wednesday, July 13th

9:00 - 10:30 **Greg Voth**
Mixing I

11:00 - 12:30 **Dan Lathrop**
Turbulence experimental intro I

14:30 - 16:00 **Bruno Eckhardt**
Advances in turbulent transition

19:00 - 21:30 **Poster Session II**
11th Floor Commons Room

Thursday, July 14th

9:00 - 10:30 **Greg Voth**
Experimental advances in the statistical theory of turbulence

11:00 - 12:30 **Annick Pouquet**
Spectra of turbulence and turbulent transition

14:30 - 16:00 **Greg Voth**
Turbulent mixing II

Friday, July 15th

9:00 - 10:30 **Bruno Eckhardt**
Advances in turbulent transition

11:00 - 12:30 **Dan lathrop**
MHD turbulence and the dynamo problem

18:00 - 19:00 **BBQ**
Sewall Hall

Week 3, July 18-22 - Active Matter and Biofluid Dynamics I

Monday, July 18th

9:00 - 10:30 **Heinrich Jaeger**
Intro to active matter

11:00 - 12:30 **Peko Hosoi**
Intro to biofluid dynamics (Low Reynolds number)

14:30 - 16:00 **JF Joanny**
Active matter with biological molecules I

19:00 - 20:30 **Research Talks**

Tuesday, July 19th

9:00 - 10:30 **Jerry Gollub**
Biological active matter I

11:00 - 12:30 **JF Joanny**
Active matter with biological molecules II

14:30 - 16:00 **Heinrich Jaeger**
Granular Matter I

Wednesday, July 20th

9:00 - 10:30 **Jerry Gollub**
Biological active matter II

11:00 - 12:30 **JF Joanny**
Active matter with biological molecules III

14:30 - 16:00 **Ayusman Sen**
Introduction to Synthetic Active Matter

19:00 - 21:30 **Poster Session III**
11th Floor Commons Room

Thursday, July 21st

9:00 - 10:30 **Heinrich Jaeger**
Granular Matter II

11:00 - 12:30 **Peko Hosoi**
Bio-inspired robotics (swimming, crawling and digging)

14:30 - 16:00 **Ayusman Sen**
Powering Active Particle and Fluid Motion

19:00 - 20:00 **Peko Hosoi**
Public Lecture - Room G1B20

Friday, July 22nd

9:00 - 10:30 **Ayusman Sen**
Collective Behavior of Autonomous Nano/Microbots

18:00 - 19:00 **BBQ**
Sewall Hall

Week 4, July 25-29 - Active Matter and Biofluid Dynamics II

Monday, July 25th

9:00 - 10:30 **Mike Shelley**
Intro to biofluid dynamics (all Reynolds numbers)

11:00 - 12:30 **Peter Palffy-Muhory**
Amazing things with liquid crystals I

14:30 - 16:00 **Dan Goldman**
Swimming in Sand I

19:00 - 20:30 **Research talks**

Tuesday, July 26th

9:00 - 10:30 **Lisa Fauci**
Amazing simulations I

11:00 - 12:30 **Peter Palffy-Muhory**
Amazing things with liquid crystals II

14:30 - 16:00 **Dan Goldman**
Swimming in Sand II

Wednesday, July 27th

9:00 - 10:30 **Lisa Fauci**
Amazing simulations III

11:00 - 12:30 **Peter Palffy-Muhory**
Amazing things with liquid crystals III

14:30 - 16:00 **Dan Goldman**
Swimming in Sand III

Thursday, July 28st

9:00 - 10:30 **Lisa Fauci**
Amazing simulations III

11:00 - 12:30 **Mike Shelley**
More active matter and wrap-up

Friday, July 29nd

18:00 - 19:00 **BBQ**
Sewall Hall