

2023 BIOPHYSICS SUMMER SCHOOL

BIOLOGICAL PHYSICS: SOFT LIVING MATTER

5-11 August, 2023 - Xenia, Rethymno

Thank you for your interest. Registration is closed.

EVENT SCHEDULE

Lectures, hand-on workshops, and mingling events.
You will need to bring your laptop for the computational workshops .

Days 1 & 2

Days 3 & 4

Days 5 & 6

Day 7

Day 1 - Sat., Aug 5th

09:00 am
- 1 pm

Registration at Xenia

Registration, room setup, please have lunch before the sessions start.

01:00 pm



Welcome and Useful info *Organizers*

01:15 pm



Introduction to Biophysics. Historical note and Fundamentals. Role of theory and experiment *Eleni Katifori*

02:30 PM



Swimming at low Reynolds numbers *Arnold Mathijssen*

03:45 AM



Ice-breaker I: 2 min presentations of all participants

04:45 PM



Coffee break *Courtesy of Sampson bakery*

05:00 PM



The main players: Introduction to DNA and RNA biophysics *Alexandros Georgakilas*

Day 2 - Sun., Aug 6th

09:10 AM  **DNA damage and repair: from detection to biological importance.** *Alexandros Georgakilas*


10:25 AM  **Non-equilibrium diffusion in biology** *Arnold Mathijssen*


11:40 AM  **Coffee break.** *Courtesy of Sampson bakery*

12:00 PM  **Ice-breaker II: 2 min presentations of all participants**

01:15 PM  **Lunch / Visit Fortezza (castle) break**

03:00 pm  **The main players: Introduction to the cell and the cytoskeleton.** *Dimitris Vavylonis*


04:10 PM  **Workshop: Python tutorial on computational biophysics** *Arnold Mathijssen and Eleni Katifori*

06:30 PM  **Poster session**

Day 3 - Mon., Aug 7th


09:10 am  **Lipid membrane structure and function: two-dimensional flow and diffusion** *Aurelia Honerkamp-Smith*

10:30 am  **(continued) The main players: Introduction to the cell and the cytoskeleton.** *Dimitris Vavylonis*

11:40 AM  **Coffee break** *Courtesy of Sampson bakery*









12:00 PM  **Introduction to single particle tracking for protein design and deciphering cell entry pathways.** *Nikos Hatzakis*

01:30 PM  **Lunch / Archaeological museum break**

03:15 PM  **Active matter and collective motion** *Arnold Mathijssen*

04:30 PM  **The main players: Protein order and disorder** *Emmanouela Filippidi*








Day 4 - Tue., Aug. 8th

- 9:10 AM  **Protein structural dynamics: understanding and tuning metabolic controls.** *Nikos Hatzakis*
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- 10:25 AM  **Biophysical tools to decode protein structural dynamics and comprehend protein function at the molecular level** *George Gouridis*
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- 11:40 AM  **Coffee break.** *Courtesy of Sampson bakery*
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- 12:00 AM  **Liquid-liquid phase separation** *Emmanouela Filippidi*
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- 01:15 PM  **Lunch break**
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- 03:30 PM  **Single molecule and machine learning to understand and control biological responses.** *Nikos Hatzakis*
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- 04:45 pm  **Biophysics of the cytoskeleton** *Dimitris Vavylonis*
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- 06:00 PM  **Book the speaker session**

Day 5 - Wed., Aug 9th

- 09:15 am  **Lateral transport of lipids and proteins in membranes** *Aurelia Honerkamp-Smith*
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- 10:25 AM  **How do physical and evolutionary laws determine the biophysical properties of proteins?** *George Gouridis*
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- 11:40 AM  **Coffee break** *Courtesy of Sampson bakery*
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- 12:00 PM  **Biological flow networks - Part I** *Eleni Katifori*
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- 01:15 PM  **Lunch break**
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- 03:30 PM  **Workshop: Modeling with LAMMPS - Part I (Theory/Background/ Basic running)** *Dimitris Vavylonis*

Day 6 - Thurs., Aug 10th

- 09:15 AM  **Biological flow networks - Part II** *Eleni Katifori*
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- 10:30 am  **Modeling of cell division and motility** *Dimitris Vavylonis*
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- 11:40 am  **Coffee break** *Courtesy of Sampson bakery*
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- 12:00 pm  **Multi-level studies of Developmental Morphogenesis: from Biophysics to EvoDevo** *Tassos Pavlopoulos*
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- 01:15 pm  **Lunch break**
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- 03:00 PM  **What can CHARMM-GUI do for you?** *Wonpil Im*
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- 05:00 PM  **Panel: Q&A, research opportunities in biophysics, resources, discussion**

Day 7 - Fri., Aug 11th

- 09:15-12:30 PM  **Workshop: Molecular Dynamics - Modeling with LAMMPS - Part II** *Dimitris Vavylonis*
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- 12:30 PM  **Feedback session**