

**Program Geilo School 2025, 10-20 March**  
**Complex Matter and AI: Connectivity, Information and Adaption**

<b>1<sup>st</sup> Day Monday March 10</b>		
16:00 -18:00	Arrival (approximate)	Participants from Oslo Airport or Oslo Central station to Geilo Station by train or bus. (~3.5 hrs.)
18:00-19:00	Registration	
19:00-20:00	Reception	
20:00-22:00	Dinner	
22.00-22:15	Arne Skjeltnor	Opening
<b>2<sup>nd</sup> Day Tuesday March 11</b>		
08:30-11:30	Philippe Nghe	Could AI solve the origin of life question?
11:30-15:30	Discussions, outdoor activities and lunch	
15:30-17:30	L. Mahadevan (Zoom)	Emergence and adaptation in animal architectures and robotic swarms, and on inverse problems
17:30-18:30	Tutorial, L. Mahadevan (Zoom)	Tutorial group meetings and informal discussions with lecturers
<b>3<sup>rd</sup> Day Wednesday March 12</b>		
08:30-10:30	Andreas Carlson (Seminar)	Harvesting fresh water from fog nets
10:30-11:30	Jonathan Whitlock	Neural coding of navigation, movement and body schema in cortex
11:30-15:30	Discussions, outdoor activities and lunch	
15:30-17:30	Jonathan Whitlock	Neural coding of navigation, movement and body schema in cortex (Ctd.)
17:30-18:30		Tutorial group meetings and informal discussions with lecturers
<b>4<sup>th</sup> Day Thursday March 13</b>		
08:30-11:30	Caetano Miranda	Machine Learning for Materials: How I Learned to Stop Worrying and Love It
11:30-15:30	Discussions, outdoor activities and lunch	
15:30- 17:30	Yuhai Tu (Zoom)	Nonequilibrium Physics in Living Systems: The Energy Cost of Biological Functions
17:30-18:30	Yuhai Tu (Zoom)	Tutorial group meetings and informal discussions with lecturers
<b>5<sup>th</sup> Day Friday March 14</b>		
08:30-10:30	Patrick Tabeling	Lecture 1: New foundation for the physics of wetting Lecture 2: The production of complex nanoparticles with micro/nanofluidics.
10:30-11:30	Matti Knaapila (Seminar)	Ultrastrong ropes and aligned carbon composites
11:30-15:30	Discussions, outdoor activities and lunch	
15:30-18:30	Poster session	Posters left on display until Wedn. March 19.
<b>6<sup>th</sup> Day Saturday March 15</b>		
08:30- 11:30	Nathalie Jurisch-Yaksi	Deciphering the biomechanics and function of fluid flow in the nervous system.
11:30-15:30	Discussions, outdoor activities and lunch	
15:30-16:30	Françoise Brochard-Wyart (Seminar)	Hybrid active inert matter
16:30-17:30	Maria Helena Godinho (Seminar)	Cellulose-Based Liquid Crystalline Networks

17:30-18:30		Tutorial group meetings and informal discussions with lecturers
<b>7<sup>th</sup> Day Sunday March 16</b>		
<i>Free</i>	<i>Excursions or various skiing or hiking events in the mountains</i>	
<b>8<sup>th</sup> Day Monday March 17</b>		
08:30- 11:30	Morten Hjort-Jensen	1) Introduction to discriminative deep learning methods; applications to studies of phase transitions in physical systems. 2) Generative deep learning methods and studies of phase transitions. 3) Deep learning and quantum mechanical many-body problems
11:30-15:30	<i>Discussions, outdoor activities and lunch</i>	
15:30- 17:30	Eberhard Bodenschatz	Cilia driven flow networks and synthoneems
17:30-18:30		<b>Tutorial group meetings and informal discussions with lecturers</b>
<b>9<sup>th</sup> Day Tuesday March 18</b>		
08:30- 09:30	Eberhard Bodenschatz	Cilia driven flow networks and synthoneems (Ctd.)
09:30- 11:30	Claire Wyart	Sensing inner states & building motor strategies: taking a different path on motor control
11:30-15:30	<i>Discussions, outdoor activities and lunch</i>	
15:30- 16:30	Claire Wyart	Sensing inner states & building motor strategies: taking a different path on motor control (Ctd.)
16:30-17:30	Paul Dommersnes (Seminar)	Active solids
17:30-18:30		Tutorial group meetings and informal discussions with lecturers
<b>10<sup>th</sup> Day Wednesday March 19</b>		
08:30- 9:30	Barbara Pacáková (Seminar)	MXenes and AI – from synthesis towards applications
09:30- 10:30	Paul Dommersnes (Seminar)	Probability bridges in physics and learning
10:30- 11:30	Jon Otto Fossum	TBD - Surprise
11:30-15:30	<i>Discussions, outdoor activities and lunch</i>	
15:30-17:30	Jon Otto Fossum	TBD - Surprise (ctd.)
17:30-18:30		Tutorial group meetings and informal discussions with lecturers
19:30	<i>Geilo School Closing Dinner</i>	<i>Geilo Awards, Poster Prizes etc.</i>
<b>11<sup>th</sup> Day Thursday Nov. March 20</b>		
9:00-15:00	<i>Departure (approximate)</i>	<i>Participants from Geilo Station to Oslo Airport or Oslo Central Station by train or bus (~3.5 hrs.)</i>

- Each lecture hour will last for about 50 min including questions and a 10 min break.
- Coffee breaks approximately 10:15-10:30 and 16:15-16:30