



**SLMS Research
Coordination Office
Events portfolio 2021**

Symposia

Neuroscience Domain Symposium *[online]*

13.00-16.45 | June 2021

Now in its 12th year, the renowned UCL Neuroscience Symposium is a fantastic opportunity to find out more about the latest neuroscience research at UCL. The symposium was once again held as a half-day online event.

For the first time, we held an online poster and rapid poster presentation session which was attended by 274 people. This showcased research posters from colleagues across the Neuroscience Domain. 50 posters were presented as rapid presentations during the poster session of the symposium. The remaining 61 posters had the option to be displayed online with accompanying video presentations. On the day, the 50 rapid poster presentations were split into 6 virtual rooms in the following themes:

1. Computational Neuroscience and AI
2. Cognition & cognitive dysfunction
3. Disorders of the nervous system: molecular and genetics
4. Disorders of the nervous system: cellular mechanisms
5. Neural circuits and behaviour
6. Sensory motor systems and dysfunction

Each speaker had 20 minutes to present, followed by 5 minutes of Q&A's with the audience. The afternoon keynote speaker had 30 minutes to present, followed by 10 minutes of Q&A.

Keynote Speaker

- Professor Vanessa Ruta, The Rockefeller University

UCL Speakers

- Professor Gareth Barnes, Wellcome Centre for Human Neuroimaging, UCL Queen Square Institute of Neurology
- Professor Caswell Barry, UCL Division of Biosciences
- Dr Sandrine M. Géranton, UCL Division of Biosciences
- Dr Soyong Hong, UK Dementia Research Institute and UCL Queen Square Institute of Neurology

Attendees:

- Nearly 450

NeuroAI Annual Meeting *[online]*

13.00-16.00 | Wednesday 12th May 2021

Academic Lead: Professor Caswell Barry

The last decade has seen phenomenal advances in the field of machine learning (AI). Such is the change that no area of science can afford to ignore it, least of all neuroscience. Crucially, AI shares a common lineage with neuroscience, and provides a means to emulate neural functions and circuits - delivering a normative understanding of the brain and cognition. Equally AI tools provide a means to discover, segment, and track distinct neural and behavioural states - yielding more efficient experiments and accelerating the pace of discovery. In turn, this understanding feeds back into the design of more effective AI architectures and models. Essentially, AI problems posed in neuroscience both require and inspire further advances in AI.

UCL annual NeuroAI event features speakers working across the spectrum of machine learning to neuroscience and aims to foster further collaboration and discussion.

Speakers:

- Professor Alexander Mathis (Ecole Polytechnique Fédérale de Lausanne)
- Professor Claudia Clopath (Imperial College London and Sainsbury Wellcome Centre)

- Professor Daniel Alexander (UCL Computer Science)
- Professor Jennifer Collinger (University of Pittsburgh)

Event programme:

1.00pm – Welcome

1.05pm - 3.20pm – Talks

3.20pm - 3.50pm - Panel discussion

3.50pm - 3.55pm - Closing remarks

Seminars and Workshops

NeuroAI Talk Series *[online]*

14.00-15.00 | Monthly

Academic Lead: Professor Caswell Barry

A series of NeuroAI themed talks organised by the UCL NeuroAI community.

About NeuroAI: The last decade has seen phenomenal advances in the field of machine learning (AI) (e.g. deep learning, reinforcement learning). Such is the change that no area of science can afford to ignore it, least of all neuroscience. Crucially, AI shares a common lineage with neuroscience, and provides a means to emulate neural functions and the circuits supporting them, delivering a normative understanding of the brain and cognition (e.g. Banino et al., 2018; Stringer et al. 2019; Dabney et al., 2020). Equally AI tools provide a means to discover, segment, and track distinct neural and behavioural states (e.g. Mathis et al., 2018; Frey et al., 2019) - yielding more efficient experiments and accelerating the pace of discovery. In turn, this understanding feeds back into the design of more effective AI architectures and models (e.g. Sabour et al., 2017; Stringer et al, 2019, Dabney et al., 2020). Essentially, AI problems posed in neuroscience both require and inspire further advances in AI.

Previous events:

- Wednesday 16th September 2020 - **Professor Michael Bronstein** (Imperial College London)
Talk title - Geometric deep learning on graphs and manifolds
Event recording can be accessed [here](#)
- Wednesday 14th October 2020 - **Dr Aldo Faisal** (Imperial College London)
Talk title - Brains as human-in-the-loop AI systems
Event recording can be accessed [here](#)
- Wednesday 11th November 2020 - **Professor Netta Cohen** (University of Leeds)
Talk title - The brain map of a worm: A multiscale connectome derived from whole-brain volumetric reconstructions
- Wednesday 13th January 2021 - **Benigno Uria** (DeepMind)
Talk title - The Spatial Memory Pipeline: a deep learning model of egocentric to allocentric understanding in mammalian brains
- Wednesday 17th February 2021 - **Daniel Yamins** (Stanford University)
Talk title - Self-Supervised Learning for Neuroscience and Artificial Intelligence
Event recording can be accessed [here](#)
- Wednesday 17th March 2021 - **Kimberly Stachenfeld** (DeepMind)
Talk title - Graph Representation Learning and the Hippocampal-Entorhinal Circuit
- Wednesday 9th June 2021 - **Dr Ida Momennejad** (Microsoft Research NYC)
Talk title- "Toward Human-like RL"
Event recording can be accessed [here](#)
- Wednesday 14th July 2021 - **Alexander Terenin** (Imperial College London)
Talk title- Physically Structured Neural Networks for Smooth and Contact Dynamics
Event recording can be accessed [here](#)
- Wednesday 15th September 2021 - **Professor Michael Milford** (Queensland University of Technology)
Talk title: Spatial and Perceptual Neuroscience Questions a Robotist Would Love to Have Answered
Event recording can be accessed [here](#)
- Wednesday 13th October 2021 – **Dr Rebecca Jackson** (University of Cambridge)
Talk title: 'Reverse-Engineering the Cortical Architecture for Controlled Semantic Cognition'
Event recording can be accessed [here](#)

UCL Bioimaging Interest Group Seminar Series *[online]*

13.00-14.00 | Approximately monthly

Academic Lead: Professor Alison Lloyd

The RCO Events team helped with the initial set-up of the UCL Bioimaging Interest Group and the first few seminars in the series.

Together with the UCL Cancer Domain and the LMCB, a UCL Bioimaging Interest Group was developed. UCL has world-leading imaging facilities, that should allow unprecedented breakthroughs in discovery and translational science. Sharing knowledge, together with the development of joint initiatives and analysis tools should greatly accelerate the discovery process

Initially, the Bioimaging Interest Group Seminars took place virtually, once a month and consisted of two short (~20 min) presentations on topics related to imaging cells and tissues across spatial and temporal scales, and the analysis and curation of the resulting data sets, with an aim to initiate discussions, share expertise and foster collaborations.

Events in 2021:

- Wednesday 31st March
- Friday 14th May
- Friday 18th June
- Friday 16th July

UCL Catalyst Seminar Series in Children and Young People's Mental Health *[online]*

13.00-14.15 | Monthly

Academic Lead: Professor Essi Viding

Children and young people's mental health is an area of considerable societal need and has been the focus of a number of recent research council and charity funding initiatives, it is also one of the UCL Mental Health Research Strategy [priority areas](#). UCL has substantial research strengths, across multiple domains, that can and should be at the forefront of leading innovative, cross-disciplinary work in this area.

The UCL Catalyst seminar series is intended to spark fresh thinking and debate, featuring cutting-edge UCL research relevant for children and young people's mental health and facilitating new connections between scientists working in different disciplines.

Events in 2021:

- Wednesday 3rd February – *launch event: The impact of early adversity of development*
- Wednesday 10th March - *Empty, alone, detached and misunderstood': The importance of loneliness in understanding and improving young people's mental health*
- Wednesday 14th April - *Poverty, Inequality and Children's Mental Health*
- Wednesday 19th May- *The Parental Brain*
- Wednesday 9th June - *Wellcome Trust Mental Health Programme Strategy*
- Wednesday 7th July- *CYP Early Career Researcher event*
- Wednesday 22nd September - *Why Language matters for children and young people's mental health and well-being*
- Wednesday 13th October - *Self-harm in young people: new approaches to intervention*
- Wednesday 10th November - *Understanding the computational mechanisms underlying (mal-)adaptive brain development*
- Wednesday 15th December - *Epistemic Trust and Children and Young People's Mental Health – Roadmap for a cross-discipline research and intervention agenda*