The future of the physics of life workshop,
AMOLF, Amsterdam, 16-17 June 2022

List of posters

Poster session I: Thursday 16 June, 12:00-14:00

1. Fotios **Avgidis** (AMOLF): *Parallel and orthogonal components of gene regulation enable sensory preference modulation under population-size homeostasis of E. coli chemoreceptors*

2. Nils **Becker** (German Cancer Research Center (DKFZ) Heidelberg): *Decoding of digital inflammatory signals by membrane receptors*

3. Mareike **Berger** (AMOLF): *Robust replication initiation from coupled homeostatic mechanisms*

4. Rossana **Bettoni** (Université libre de Bruxelles): *Cell geometry controls neural induction in early ascidian embryogenesis*

5. Patrick **Binder** (German Cancer Research Center (DKFZ) Heidelberg and Heidelberg University*): Sequential resource-sharing facilitates rapid replication of Plasmodium falciparum in erythrocytes*

6. Matteo **Bisardi** (ENS): *Modeling Sequence-Space Exploration and Emergence of Epistatic Signals in Protein Evolution*

7. Corentin **Bisot** (AMOLF): *Imaging the dynamics of symbiotic network architecture reveals a traveling-wave foraging strategy for trade*

8. Tom **Brandstätter** (Brodersz group/Department of physics and astronomy VU Amsterdam): *Curvature induces active velocity waves in rotating spherical tissues*

9. Mehmet **Can Ucar** (IST Austria): *Guidance and optimization in branching morphogenesis*

10. Pablo **Casani-Galdon** (Pompeu Fabra University): *Dynamics of cell-fate decision making in the early embryo*

11. Xiaowen **Chen** (LPENS, CNRS): *Generalized Glauber dynamics for inference problems in biology*

12. Antonio **Carlos Costa** (Ecole Normale Superieure Paris): *The multiple scales of behavior through a fluctuating landscape picture*

13. Michael **Coughlan** (Wageningen University and Research): *Growing neural networks: using deep neural networks to investigate functional changes during brain development*

14. Sophie **de Buyl** (Vrije Universiteit Brussel): *Stochastic logistic models with maximal capacity reproduce experimental time series of microbial communities*

15. Daan **de Groot** (Biozentrum at University of Basel): *Coupling phenotype stability to growth-rate overcomes limitations of bet-hedging strategies*

16. Léone **Debarge** (Institut Pasteur): *A phase transition between an homogeneous state and a phase separated state of chromatin's environment enables the transcription regulation*

17. Rossana **Droghetti** (IFOM - Firc institute for molecular oncology): *A mechanistic theory of bacterial resource allocation out of steady state*

18. Tim **Dullweber** (European Molecular Biology Laboratory Heidelberg & University Heidelberg): *Non-linear dynamics in contact-based pattern formation*

19. Pascal **Ender** (AMOLF): *Visualizing the dynamics of enteroendocrine cell differentiation in intestinal organoids*

20. Radek **Erban** (Mathematical Institute, University of Oxford*): Multiscale Methods for Modelling Intracellular Processes with Single-Molecule Detail*

21. Johannes **Flommersfeld** (Vrije Universiteit Amsterdam): *Understanding the migrating dynamics of cells in 3D confinement*

22. Leah **Friedman** (Institut Pasteur, Physics of Biological Function (Thomas Gregor)): *Pseudo-embryos as a novel quantitative mammalian model*

23. Natawan **Gadjisade** (Institute for Biological Physics / University of Cologne): *Drug interactions between translation and transcription inhibitors*

24. Tatyana **Gavrilchenko** (Flatiron Institute, The Simons Foundation): *Quantitative analysis of Drosophila terminal cells reveals dynamic regimes of branched network growth*

25. Florian **Goirand** (Technical University of Munich): *Statistical modelling of cerebral blood flow and transport in microvascular networks*

26. Isabella **Graf** (Yale University): *Sensitive thermometry with TRP channels through self-tuning to a bifurcation point*

27. Janni **Harju** (Vrije Universiteit Amsterdam): *What can we learn from Hi-C maps about chromosome organization?*

28. Jacqueline **Janssen** (Max Planck Institute for the Physics of Complex Systems Dresden): *Droplet size distribution function in active emulsions*

29. Jordan **Juritz** (Imperial College London): *Minimal mechanism for cyclic templating of length-controlled copolymers under isothermal conditions*

30. Deepti **Kannan** (Massachusetts Institute of Technology): *Correlated activity guides polymer folding consistent with genome organization*

31. Björn **Kscheschinski** (Biozentrum Basel): *Inferring growth and GFP production rates from noisy single cell measurements*

32. Sudarshana **Laha** (Max Planck Institute for the Physics of Complex Systems): *Biochemical processes in phase-separated systems*

33. Daan **Mulder** (AMOLF): *The cost of gathering information in finite time*

Poster session II: Thursday June 16, 16:00-18:00

1. Alessandra **Lucchetti** (University of Copenhagen): *p53 oscillatory dynamics optimizes DNA repair efficiency by regulating foci formation*

2. Iuri **Macocco** (SISSA, Trieste): *Towards an intrinsic dimension estimator for genomics sequences*

3. Leonardo **Mancini** (University of Cambridge, Cavendish lab): *Growth-rate dependent bacterial response to the cell wall targeting antibiotic mecillinam*

4. Andrea **Mazzolini** (Laboratoire de Physique, École normale supérieure (LPENS) Paris): *Inspecting the co-evolutionary interaction between the HIV and the Immune system through genetic turnover*

5. Felix J. **Meigel** (Max Planck Institute for the Physics of Complex Systems, Dresden, Germany): *The interplay between organelle and molecular dynamics enables timing of cellular decisions*

6. Matthijs **Meijers** (University of Cologne): *Vaccination shapes evolutionary trajectories in SARS-CoV-2 evolution*

7. Melody **Merle** (Physics of Biological Functions - Institut Pasteur): *Reproducibility in mammalian pseudo-embryos*

8. Barthelemy **Meynard** (Sorbonne University): *Predicting interacting protein sequences using transformers*

9. Fatemeh **Mirzapour** (Technical University of Munich): *Flow and Remodeling of the Microvasculature*

10. Anne-Lena **Moor** (Max Planck Institute for Molecular Cell Biology): *Quantifying Dynamic Information Transfer in Stochastic Biochemical Networks*

11. Roberto **Moran-Tovar** (University of Cologne, Institute for Biological Physics): *On pathogen-immune recognition dynamics*

12. Francesco **Moro** (Vrije Universiteit Amsterdam): *Modelling microbial community in a dynamic environment*

13. Arghyadip **Mukherjee** (QBio initiative, École Normale Supérieure): *Control of oogenesis via nonlinear hydraulics*

14. Loreto **Oyarte Galvez** (AMOLF / VU): *Tracking trade across symbiotic networks: Arbuscular Mycorrhizal Fungi*

15. Mindy **Perkins** (European Molecular Biology Laboratory, Heidelberg): *An autoregulatory latch in the developing embryo commits cells to binary fates*

16. Benjamin **Qureshi** (Imperial College London): *A Universal Method for Analysing Copolymerisation*

17. Manuel **Reinhardt** (AMOLF): *Computing the Information Flow Through Complex Systems*

18. Alda **Sabalic** (Universitat Pompeu Fabra): *Virus-cytokine co-propagation in mammalian cell tissues*

19. Fernando **Santos** (Department of Anatomy and Neurosciences - Multiscale Neuroscience division): *Emergence of High order Hubs in the Human Connectome*

20. Lisa **Schick** (Technical University Munich): *Function of Morphodynamics in Foraging Physarum polycephalum*

21. Nico **Schramma** (Van der Waals-Zeeman Institute, Insitute of Physics / University of Amsterdam): *Light-Dependent Self-Organization in Plant Cells*

22. Aditya **Sengar** (Imperial College London): *Coarse-grained modeing of strand displacement reactions using oxDNA*

23. Willem Kasper **Spoelstra** (AMOLF (TU Delft Graduate School)): *Laser microsurgery of small intestinal organoids*

24. Age **Tjalma** (AMOLF): *Not all bits are equally predictive, nor costly*

25. Gabriel **Torregrosa** Cortés (Universitat Pompeu Fabra): *Mechanochemical symmetry breaking in gastruloids*

26. Benjamin **Towbin** (Institute of Cell Biology, University of Bern): *Coupling of growth rate and developmental tempo reduces body size heterogeneity in C. elegans*

27. Evan **Usher** (University of Oxford): *A Theoretical Analysis and Computational Treatment of Sinusoidal Interference in HS-AFM Data*

28. Maria Sol **Vidal Saez** (Universitat Pompeu Fabra): *Context-dependent decision making in C. elegans*

29. Daan **Vorselen** (University of Washington): *Phosphatidylserine-mediated phagocytosis involves target recognition by TREM2, CD14 and integrin αMβ2 and target fragmentation by actin protrusions*

30. Gauthier **Weissbart** (Max-Planck-Institute for Plant Breeding Research): *Cellular organization in the leaf epidermis*

31. Steffen **Werner** (Wageningen University): *Functional modules from variable genes: Leveraging percolation to analyze noisy, high-dimensional data*

32. Longfu **Xu** (Vrije Universiteit Amsterdam): *Grab, Manipulate and Watch Single DNA Molecule ReplicationSingle DNA Molecule Replication*

33. Alex Chen Yi **Zhang**: (SISSA (International School for Advanced Studies), Trieste, Italy): *Bayesian inference on a 3D polymer model for epigenetic data*