

NPEE2021

Protein Engineering and Evolution Unit

Program

Nov 15th
Program Day 1

Chair: Paola Laurino (Opening and AM) / Stefano Pascarelli (PM)

Opening 9:00 to 9:10 (JST)

9:10-9:50am **Shelley Copley** University of Colorado (USA)Title: *Evolution of novel metabolic pathways*

10mins QAs

10:00-10:40am **Janine Copp** The University of British Columbia (Canada)Title: *Adventures in sequence-function space: unravelling the cryptic connections of large multifunctional enzyme superfamilies*

10mins QAs

(10mins break)

11:00-11:15am Short talk **Elsie Dunkley** Victoria University of Wellington (New Zealand)Title: *Enzyme Evolution in the Context of Cellular Metabolism*

5mins QAs

11:20-11:35am Short talk **Saacnicteh Toledo Patino** OIST (Japan)Title: *"Lost and Found". InDels mediating cofactor specificity switch in Rossmann proteins*

5mins QAs

(The Second Session)

4:00-4:40pm **Nobuyasu Koga** Research Center of Integrative Molecular Systems, Institute for Molecular Science (Japan)Title: *Exploration of novel protein structures by de novo design*

10mins QAs

4:50-5:30pm **Ruchi Anand** Department of Chemistry, IIT Bombay (India)Title: *Molecular Tunnels in Enzyme Systems*

10mins QAs

5:40-5:55pm Short talk **Madhuri Gade** OIST (Japan)Title: *Substrate dynamics contribute to enzymatic specificity in human and bacterial methionine adenosyltransferases*

5mins QAs

6:00-6:15pm Short talk **Rory Crean** Uppsala University (Sweden)Title: *Unravelling the Roles of Loop dynamics and Chemistry in Protein Tyrosine Phosphatase catalysis*

5mins QAs



Nov 16th Program Day 2



Chair: Dan Kozome (AM) / Madhuri Gade (PM)

9:00-9:40am **Sergio Peisajovich** Illumina (USA)

Title: *Protein engineering, the engine behind the genomics revolution*

10mins QAs

9:50-10:30am **Colin Jackson** ANU (Australia)

Title: *Structural and dynamic basis for evolutionary bifurcations in enzyme families*

10mins QAs

(10mins break)

10:50-11:05am Short talk **Joseph Bravo** University of Minnesota (USA)

Title: *Alteration of the Specificity of a Quorum Quenching Lactonase using Rational Design*

5mins QAs

11:10-11:25am Short talk **Sota Yagi** RIKEN Center for Biosystems Dynamics Research (Japan)

Title: *Reconstruction of the core fold of RNA polymerase with seven amino acid types*

5mins QAs

(The Second Session)

4:00-4:40pm **Tomoaki Matsuura** Earth-Life Science Institute (ELSI) Tokyo Institute of Technology (Japan)

Title: *In vitro directed evolution of membrane proteins using ribosome and liposome display*

10mins QAs

4:50-5:30pm **Klara Hlouchova** Charles university (Czech Republic)

Title: *Proteins from early alphabets: how could they do it?*

10mins QAs

5:40-5:55pm Short talk **Adèle Dramé-Maigné** Université PSL (France)

Title: *Molecular programs and droplet compartmentalization as self-selection tools for directed evolution of enzymes*

5mins QAs

6:00-6:15pm Short talk **Pratik Vyas** Weizmann Institute of Science (Israel)

Title: *On the evolutionary origins of P-loop NTPases*

5mins QAs



Nov 17th Program Day 3

Chair: Saacnicteh Toledo Patino (PM) / Paola Laurino (Closing)

4:00-4:40pm **Birte Hoecker** Bayreuth University (Germany)

Title: *Evolution of proteins from subdomain-sized fragments*

10mins QAs

4:50-5:30pm **Vikram Alva** MPI for Developmental Biology (Germany)

Title: *Repetition as a key force in the emergence of novel proteins*

10mins QAs

5:40-5:55pm

short talk **Franziska Sendker** MPI for Terrestrial Microbiology (Germany)

Title: *Discovery of a naturally evolved fractal-like protein complex*

5mins QAs

6.00pm Closing remarks