2nd IDPfun2 and IDP2Biomed Conference

Advancing the Frontier of Intrinsically Disordered Proteins: From Conformational Dynamics to Clinical Relevance

11-13 November 2025 || Padua, Italy

The second IDPfun2 Conference will take place in Padua, Italy, from November 11 to 13, 2025. Building on the success of the 1st IDPfun2 Conference in Buenos Aires, this event will once again bring together leading scientists from Europe and Latin America to strengthen international collaboration in the study of intrinsically disordered proteins (IDPs). This edition titled "*Advancing the Frontier of Intrinsically Disordered Proteins: From Conformational Dynamics to Clinical Relevance"* will focus on IDPs dynamic behavior, highlighting their functional versatility and involvement in disease mechanisms. The Conference will offer deeper insights into novel technologies and tools for studying IDPs therapeutic targeting strategies, emerging biophysical techniques, and the role of IDPs in evolution and adaptation.
This event is jointly organized by the IDPfun2 and the IDP2Biomed consortia.

Venue: Aula Magna "A. Lepschy" - Maps, First Floor, DEI/D building
Via Giovanni Gradenigo, 6B - 35131 Padova PD

Event Website https://idpfun.eu/event/2nd-IIC25/

Agenda

Tuesday, 11 November 2025 | 14:30 - 17:30 CET	
Venue: Aula Magna "A. Lepschy", First Floor, DEI/D (Maps) *Zoom link:*	
14:00	Registration

14:30 - 14:40	Welcome note - Silvio Tosatto (UNIPD) and Zsuzsanna Dosztanyi
Chair: Dosztanyi Zsuzsanna, Silvio Tosatto	
14:40 - 15:10	Michele Vendruscolo (UCAM) - *AlphaFold Prediction of Structural Ensembles of Disordered Proteins*
15:10 - 15:40	Nathalie Sibille (CNRS) - *Functional Disorder in the Regulation of GPCR-Mediated Cellular Signaling*
15:40 - 15:55	Richard Hornyak (ELTE) - *Benchmarking Computational Methods to Characterize the Conformational Ensembles of Intrinsically Disordered Proteins*
15:55 - 16:30	***Coffee break + Group picture***
16:30 - 17:00	Mihaly Kovacs (ELTE) - *Functional adaptations of single-stranded DNA binding (SSB) proteins to bacterial, eukaryotic nuclear, cytoplasmic, and mitochondrial roles: disordered segments and phase transitions*
Chair: Macarena Algañaras, Péter Ecsédi	
17:00 - 17:30	**ESR symposium: 5' Flash talks** Heli Magali Garcia Alvarez (UNSAM) - *Integrating Experimental and Computational Data to Refine Ensemble Representations of IDPs* Hamidreza Ghafouri (UNIPD) - *Experimentally Refined Conformational Ensembles of Intrinsically Disordered Proteins from SAXS Data* Laure Carriere (CNRS) - *Generative models for the design of intrinsically disordered proteins based on conditioned pLMs* Lara Balcone (UNQ) - *A comprehensive dataset of disorder flexible linker regions: integrating structural and disorder annotations* János Pálinkás (ELTE) - *A methionine switch and an intrinsically disordered segment mediate redox-dependent condensation by the stress response factor hSSB1*
18:30 -	***Welcome cocktail at Caffè Pedrocchi (Maps)***

Wednesday, 12 November 2025 | 09:00 - 17:30 CET	
Venue: Aula Magna "A. Lepschy", First Floor, DEI/D (Maps) *Zoom link:*	
09:00 - 9:10	Welcome note
Chair: Miguel Andrade, Maria Leticia Ferrelli	
9:10 - 09:40	Gabor Erdos (ELTE) - *Zero-Shot Prediction of Thermodynamic Properties of Proteins*

09:40 - 10:10	Juan Cortes (CNRS) - *Conformational ensembles of domain-linker-domain proteins: How close are we to accurate and reliable predictions?*
10:10 - 10:25	Silvina Fornasari (UNQ) - *Disordered–Structured Domain Interactions Drive the Evolutionary and Functional Landscape of HSPB1*
10:25 - 11:00	***Coffee break***
Chair: Nathalie Sibille, Gustavo Parisi	
11:00 - 11:30	Salvador Ventura (UAB) - *AggrescanAI: Deep Learning-Based Prediction of Aggregation-Prone Regions Using Contextualized Embeddings*.
11:30 - 11:45	Maria Leticia Ferrelli (UNLP) - *An Expanded Cross-Beta-DB, the Naturally Occurring Amyloid Fibril Database, Enables More Robust Benchmarking of Amyloid Fibril Prediction*
11:45 - 12:00	Eliot Ragueneau (EMBL-EBI) - *New Reactome Pathway Browser - visualising IDPs in context*
Chair: Gonzalo Zapata, Ximena Aixa Castro Naser	
12:00 - 12:30	**ESR symposium: 5' Flash Talks** Victor Ariel Bravo (UNQ) - *The Interplay of Hfq Chaperone-Mediated RNA-RNA Interactions and Liquid-Liquid Phase Separation: The Role of Intrinsically Disordered Regions in Adaptive Regulation* Macarena Algañaras (UNLP) - *Topology-Driven Pathway Analysis in Reactome: Expanding Tools for IDP Research* Lara Abad (UNIPD) - *Von Hippel-Lindau (VHL) Tumor Suppressor Amyloidogenesis: From Physiological Stress Response to Cancer Development* Péter Ecsédi (ELTE) - *Exploring the contribution of liquid-liquid phase separation propensity of E. coli single-stranded DNA-binding (SSB) protein to genome stability and stress survival*
12:30 - 14:00	***Lunch break -*** *Boschetti (Maps)*
Chair: Juan Cortes, Silvina Fornasari	
14:00 - 14:30	Miguel Andrade (JGU) - *Low complexity regions within disordered protein sequences: function, structure and evolution*
14: 30 - 14:45	Norbert Deutsch (ELTE) - *Variant Effect Predictors in Intrinsically Disordered Regions are Systematically Biased*
14:45 - 15:00	Maria Cristina Aspromonte (UNIPD) - *Functional studies of intrinsically disordered proteins and regions (IDPs/IDRs), as well as of amino acid variations in IDPs/IDRs implicated in disease.*
Chair: Ariel Bravo, Eric Schumbera	

15:00 - 15:45	**ESR symposium: 5' Flash Talks** Gonzalo Zapata (UNLP) - *Evolutionary Dynamics of Intrinsically Disordered Regions in Conserved Genes Across the Tree of Life* Abril Pagnutti (UNLP) -*A comprehensive analysis of intrinsically disordered proteins in a model prokaryote harboring replicons of varying sizes and ancestries* Tamas Szaniszlo (ELTE) -*Expanding the Role of LC8: A Central Player in the Ciliary-Centrosomal System* Marianna Bussolino (UNIPD) - *Recombinant expression and purification of pVHL isoforms in E. coli for in vitro screening of small molecules*
15:45 - 16:15	***Coffee break***
Chair: Dosztanyi Zsuzsanna	
16:15 - 16:45	Alexander Monzon (UNIPD) - *Towards a critical assessment for IDP conformational ensembles*
Chair: Carlos Pintado Grima, Macarena Algañaras	
16: 45 - 17:30	**ESR symposium: 5' Flash Talks** Eric Schumbera (JGU) - *Computational investigation of RG-motifs in disordered regions* Santiago Rodriguez (CNRS) - *Deciphering the Structural and Functional Roles of Poly-Alanine Repeats: Insights from the Combined Application of NMR and Molecular Simulations* Dorka Aszódy (ELTE) - *SLiM-mediated interactions connect LC8 to PML nuclear bodies* Ximena Aixa Castro Naser (UNIPD) - *The Intrinsically Disordered Proteins Ontology (IDPO): Updates, Expansion, and Integration for FAIR Data* Sebastian Pujalte Ojeda (UCAM) - *Multi-state Protein Design with DynamicMPNN*
19:30 -	***Social dinner*** *- Pizzeria Eremitani (Maps)*

Thursday, 13 November 2025 | 09:00 - 12:30 CET	
Venue: Aula Magna "A. Lepschy", First Floor, DEI/D (Maps) *Zoom link:*	
09:00 - 9:10	Welcome note
Chair: Maria Cristina Aspromonte, Wim Vranken	

9:10 - 09:40	David Flores Solis (DZNE) +- *Driving forces of RNA Pol-II CTD phase separation*
09:40 - 10:10	Gustavo Parisi (UNQ) - *Transposable Element Insertions Contribute to the Emergence of Protein Disorder during Primate Evolution*
10:10 - 10:25	Paula Florencia Nuñez (UNSAM) - *Conformational buffering in intrinsically disordered proteins: a scalable computational pipeline for proteome-wide analysis*
10:30 - 11:00	***Coffee break***
Chair: Gustavo Parisi, Gabor Erdos	
11:00 - 11:30	Wim Vranken (VUB) - *In-solution protein dynamics and conformational heterogeneity are not well captured computationally*
11:30 - 11:45	Carlos Pintado Grima (UAB) - *Persistent interactions between natural peptides and full-length α-synuclein fibrils revealed by molecular dynamics simulations*
11:45 - 12:00	Valentin Gonay (CNRS) - *An Embedding-Based Method for the Prediction of LLPS Driver Proteins*
12:00 - 12:10	*Closing remarks*

Organizing Committee

Silvio Tosatto (University of Padova, Italy)
Carlo Ferrari (University of Padova, Italy)
Maria Cristina Aspromonte (University of Padova, Italy)
Diana Battistella (University of Padova, Italy)

Organizing Institution

Università degli Studi di Padova

Patronage

Dipartimento di Scienze Biomediche

Dipartimento di Ingegneria dell'Informazione

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