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TALKS

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About these abstracts

Abstracts submitted to the Congress are **not peer-reviewed**. In addition, abstracts are published as submitted and are **not copyedited** prior to publication.
We are unable to make corrections of any kind to the abstracts once they are published.

Indexing

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* The Abstract number begins with the letters PL, S, ShT, SpT or SS or and can be found atop each abstract's title in the PDF file.

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Tuesday 2 July

17:00–19:00, Red Room

From Passive Students to Active Learners: Reimagining Education with Student-Centred Tools and Unlocking Engagement in the Digital

SS-02-1
Enhancing learning through student-centered teaching methods

S. Petchey
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Student-centered teaching is a pivotal strategy for enhancing learning outcomes and fostering a more inclusive and responsive educational environment. But what does this kind of teaching look like? And how can we learn to teach in this manner? The presentation and workshop will introduce structured tools that facilitate student-centered teaching by helping us adequately consider student prior knowledge and recognize what makes certain content difficult to learn. Participants will gain insights into creating and using powerful analogies that engage students and facilitate their understanding of complex subjects. In addition, the session will provide strategies to promote conceptual change, equipping educators to guide students in revising misconceptions and building an accurate knowledge base.

SS-02-2
Design a learning community to catalyze active learning

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Because of today's interconnected social landscape, the application of technology-enabled education has become widely recognized. Surprisingly, the primary challenge of digital teaching and learning lies in its social dimension. The current methods of digital instruction have resulted in diminished student–faculty interactions due to the absence of non-visual cues and a longer response time for inquiries. Moreover, the reduced physical connections among peers have hindered collaborative learning and raised concerns about students' mental well-being. There is mounting evidence indicating that students from different socioeconomic backgrounds are disproportionately affected, exacerbating educational inequalities. In this context, we propose a framework to build learning communities with the thoughtful utilization of popular digital platforms as a simple and cost-effective method.

SPEED TALKS

Sunday 30 June
13:10–13:30, Silver Room

Advanced Methods of Structural Biology

SpT-01-4
How to self assemble: oligomeric structures of septin complexes and sub-complexes from *Ciona intestinalis*

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Over recent years much has been learnt about septin filament assembly and the specific interfaces that must spontaneously form in order to correctly build oligomers, filaments and higher-order assemblies. The latter seem to be essential for the vast majority of septin functions in membrane remodeling, bacterial entrapment and barrier formation. Most of this information has derived from mammalian systems although much of our current understanding appears to be transferable to other species, including schistosomes, fruit flies and fungi. In the current work we investigate the structures of septin complexes and sub-complexes from the sea squirt *Ciona intestinalis*, an interesting model system possessing only one member of each of the four animal septin subgroups (SEPT2, SEPT6, SEPT7 and SEPT9), thereby eliminating the redundancy seen in many species. We obtained single-particle cryo-EM structures for the octameric, hexameric and central tetrameric particles at 9, 3.3 and 2.7 Å, respectively. This has enabled us to better understand the features of the inter-subunit interfaces, essential for spontaneous assembly. In the upper part of the G-interface we rationalize the need for an Asx residue within switch II based on its unusual φ/ψ angles and in the lower part, the cluster of intercalated aromatic residues which has been largely unappreciated until now. At the NC-interface we fully describe the Hook-Loop region for this first time. This appears to be essential for each subunit to embrace its neighbor, thereby, together with a polybasic helix ($\alpha 0$), lending stability to the NC-interface and determining inter-subunit separation. Taken together, this study gives novel insights into the assembly of the septin oligomers, which is an elegant example of subtle molecular recognition. This work was supported by FAPESP through grants 2020/02897-1, 2021/08158-9, 2018/20209-5, 2023/06866-1.