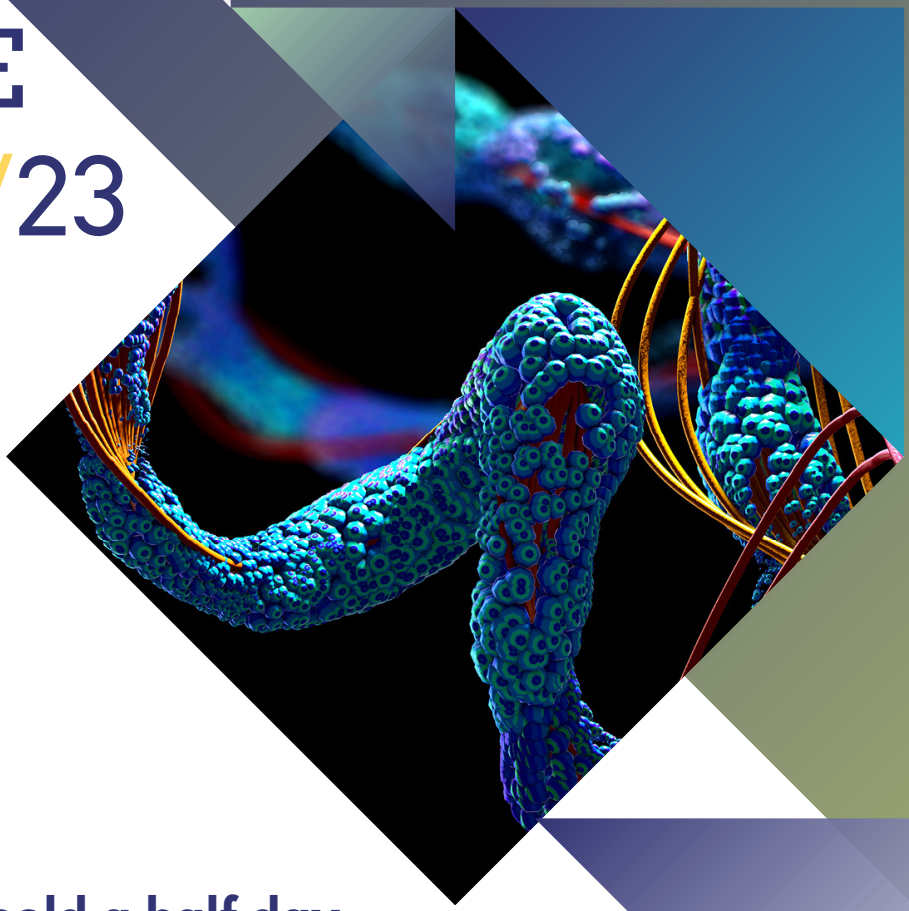
Technion Human Health Initiative

Structural Biology

SAVE THE DATE 5/9/23

10:00-13:00



We wish to hold a half day,
Technion wide discussion on this direction
with the intention of outlining this vision and
the community committed to it.
This meeting will take place on
5/9/23 at 9:00-13:00
Emerson building, 1st floor
(Seminar room - Garini Lab).
If you are interested in taking part in this initiative,
please reply to this mail Thhi@technion.ac.il
Hope to see you there....

Prof. Noam Ziv
On behalf of the Council for science and engineering of biology and medicine

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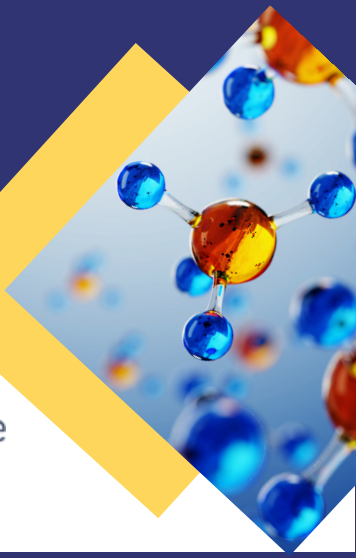
Structural biology is the field of study focusing on the structural analysis of living material – materials formed by, maintained, modified and degraded by living organisms – with the aim of understanding and manipulating their biological functions. Given their wonderous properties, structural biology has become a foundational tier in practically every field of research that involves biological materials – life science, medicine, biochemistry, biotechnology, food engineering, material discovery and environmental sciences, to name a few. Moreover, it will undoubtedly become an essential tier in developments involving engineering, manipulation and sensing, such as new protein design, nanotechnology-associated sequencing approaches, hybrid electronics, synthetic biology and more.
Unfortunately, the Technion is lagging far behind and is nowhere near to where it should and could be. Although the Technion founded the Technion Center for Structural Biology (TCSB) more than a decade ago, the Technion lacks basic facilities for CryoEM based resolution of biological molecules and complexes.
Perhaps more worrisome, the Technion is missing the revolution in computational structural biology, largely related to the dramatic foray of AI into this field.
Furthermore, computational approaches, AI based and others, are transforming chemistry in general, and here too, the Technion is far behind. This is particularly unfortunate given the strength of AI research at the Technion in other domains.
In July 2022 the Faculty of Chemistry hosted a meeting on this topic (summary attached). While some progress was made (a quite detailed plan for purchasing a cryo-EM system including a new location, a position offered to a senior investigator as a potential leader), at the end, most of our efforts came to naught. A major reason is a hesitance of Technion management to invest considerably in this field due to uncertainties regarding the user base, long-term, collective vision and the willingness of academic units to commit to this vision (manifest as, e.g. recruitment of excellent investigators in this field).
My belief is that the development and presentation of a coherent vision shared by several faculties including those most strongly involved in AI and computational fields, associated with a commitment to realizing this vision, is the only way to make headway. As mentioned above, the interested parties should come from diverse research fields, many of which were mentioned above.

Prof. Noam Ziv



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