

Program for Wednesday, August 10

1100-1300

- Bohdan Schneider: ELIXIR and Its Communities
- Blake Sweeny: Rfam and RNACentral
- Bohdan Schneider: Annotation of Nucleic Acid Structures at dnatco.datmos.org
- Jiří Černý: Annotation and Validation of Nucleic Acid Structures
- Jakub Svoboda: Plasticity of base pairing observed in the A-form 18-mer DNA structures

ELIXIR & Its Communities: Basic Information



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**Institute of Biotechnology
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Computational Approaches to RNA Structure and Function

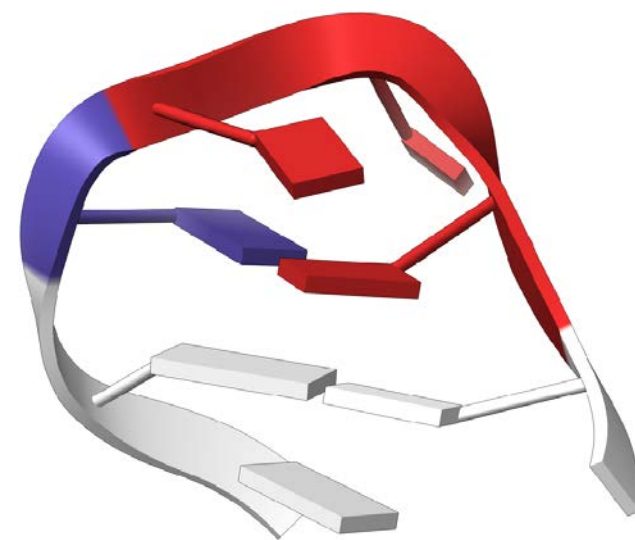
2022-08-10



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ELIXIR <https://elixir-europe.org/>

- ELIXIR is an intergovernmental organization that brings together life science resources from across Europe.
 - ... databases, software tools, training materials, cloud storage, computers.
- The goal: coordinate these resources so that they form a single infrastructure.
- ELIXIR makes it easier for scientists to find and share data, exchange expertise, and agree on best practices.



ELIXIR Has 23 Member States

List of Nodes

The dates show when each country joined ELIXIR. Cyprus is not yet a member of ELIXIR. It is an observer and is working towards full membership (see [How countries join and establish a Node](#)).



 EMBL (June 2013)	 UK (Sept 2013)	 Sweden (Sept 2013)	 Switzerland (Oct 2013)
 Czech Republic (Nov 2013)	 Estonia (Dec 2013)	 Norway (Jan 2014)	 Netherlands (Feb 2014)
 Denmark (Mar 2014)	 Israel (May 2014)	 Portugal (July 2014)	 Finland (Sept 2014)
 France (Oct 2015 as Provisional Member)	 Belgium (Nov 2015)	 Italy (Jan 2016)	 Slovenia (Feb 2016)
 Luxembourg (July 2016)	 Ireland (July 2016)	 Germany (Aug 2016)	 Hungary (Jan 2017)
 Spain (Oct 2017)	 Greece (Feb 2019)	 Cyprus	



Platforms

- ... bring together experts to define the strategy and provide services in a particular area
 - Compute
 - Data
 - Tools
 - Interoperability
 - Training

Communities

- ... bring together scientists who work in a specific domain



3D-BioInfo

Helps to understand the 3D structure of macromolecules like proteins and DNA.



Food and Nutrition

Aims to help us understand the effect of food choices on human health.



Galaxy

Fosters a Galaxy community in Europe, together with Galaxy resources and training.



Intrinsically Disordered Proteins

Develops standards, tools and resources to help identify and characterise IDPs.



Marine Metagenomics

Develops a sustainable metagenomics infrastructure to nurture research and innovation in the marine domain.



Metabolomics

Provides the resources, analysis tools and infrastructure to help metabolite identification.



Microbial Biotechnology

Helps the development of tailor-made microbes and biological systems.



Plant Sciences

Develops an infrastructure to facilitate genotype-phenotype analysis for crop and tree species.



Proteomics

Develops and maintains sustainable proteomics tools and data resources.



Toxicology

Supports the integration of standards, tools and resources to aid toxicology research projects.

3D-Bioinfo

<https://elixir-europe.org/communities/3d-bioinfo>

- Structural bioinformatics: methods and tools to analyze, predict, archive and validate 3D structure data of biomacromolecules
- White paper was published in April 2020
 - ... first effort to create 3D-Bioinfo in the Fall 2017
- 3D-BioInfo Community Annual Meetings:
 - 2021 November 2nd to 4th
 - 2022 November 2nd to 4th
- Webinars

3D-Bioinfo: five activities

The Community is led by a seven-person Executive Committee:



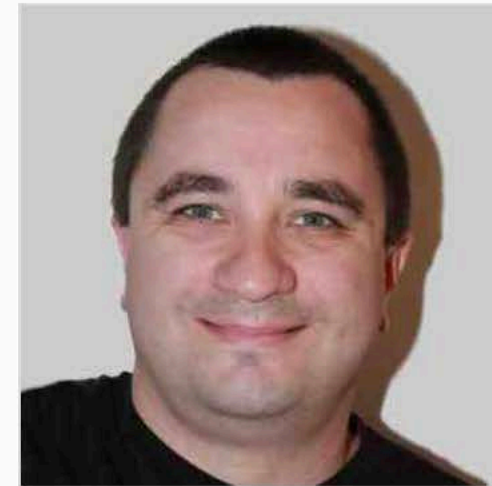
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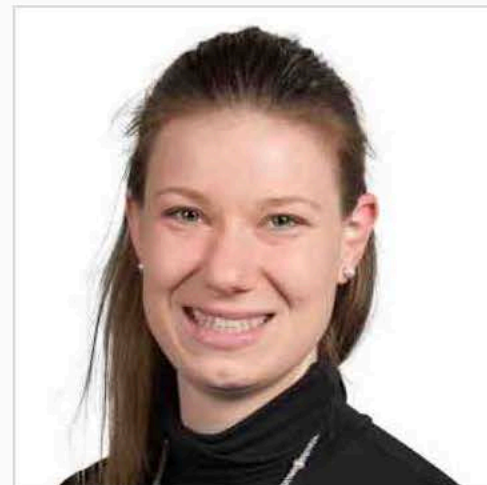
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Katharina Heil
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(Communities Coordinator,
ELIXIR Hub)

- To develop the infrastructure for FAIR structural and functional annotations - Sameer Velankar
- To create open resources for sharing, integrating and benchmarking software tools for modelling the proteome in 3D - Shoshana Wodak
- To help develop models for protein-ligand interactions - Vincent Zoete
- To develop tools to Describe, Analyse, Annotate, and Predict Nucleic Acid Structures - Bohdan Schneider
- To establish a Biostudies database of protein engineering results - Lynne Regan

Executive c. - activities
Steering c. - countries

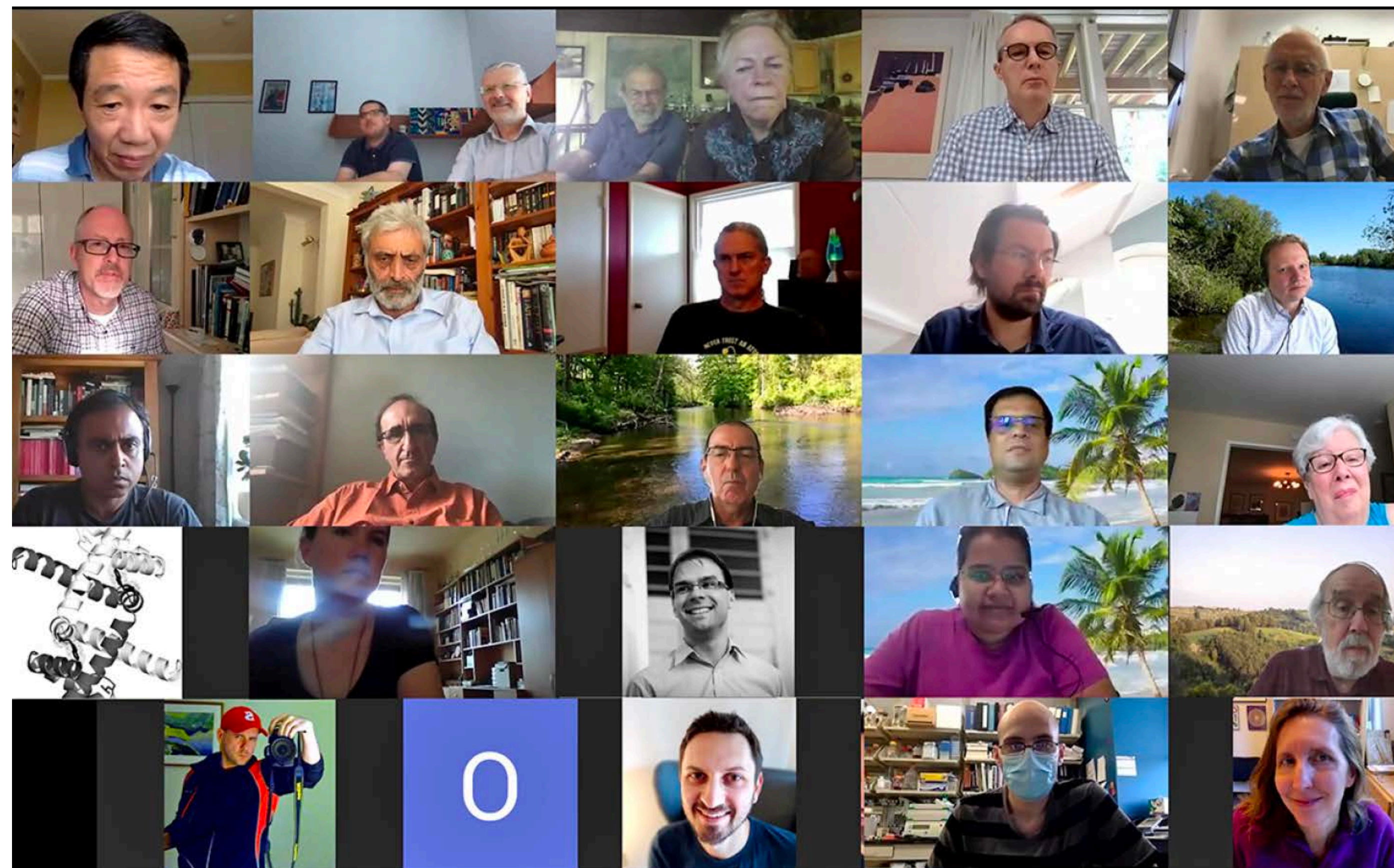
3D-Bioinfo annual conference

- November 2-4, 2022
- Hinxton, EMBL premises (Wellcome Genome Campus, UK)
- Physical presence preferred but zoom link will be provided
- Register:

<https://elixir-europe.org/events/3d-bioinfo-agm-2022>

NA Activity

- NA-VAL: Nucleic Acid VALence geometry workgroup
 - Initiated in 2021 by Helen Berman & Bohdan Schneider
 - Mariusz Jaskolski & Martin Egli, co-leads
- To define and implement a uniform dictionary for nucleic acid valence geometry parameters for use in modeling, refinement and validation systems

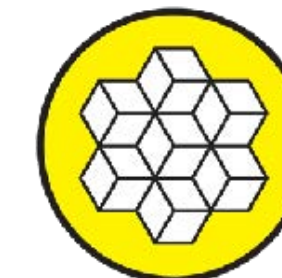


ELIXIR Implementation Plans

- Communities can submit specific projects
- 3D-Info could put together concentrating on RNA research
 - possible support of the RNAPuzzles?



The Czech Academy
of Sciences



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Thank you for your time!



Building the capacity:

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