



# ELIXIR-GREECE

Babis Savakis

ELIXIR-GREECE kick-off meeting  
NHRF, Athens 18 May 2018



[www.elixir-greece.org](http://www.elixir-greece.org)

# ELIXIR Membership

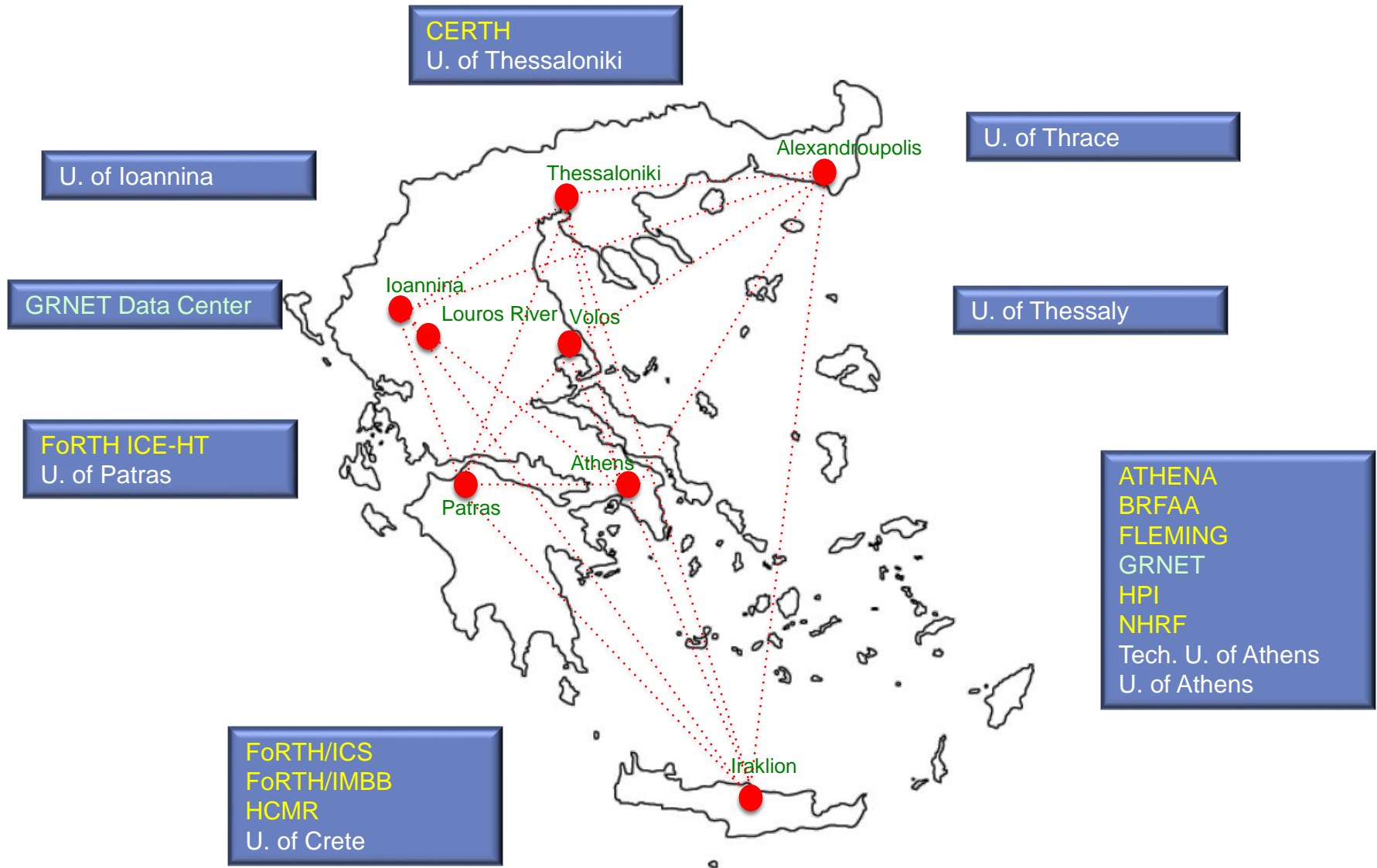
## ELIXIR Members



## ELIXIR Observers



# ELIXIR-Greece



# ELIXIR-Greece Network

- **National network**
  - Part of the National Roadmap for RIs
  - Secure storage of and access to very large datasets
  - Provide computational power for data analysis
  - Integrate available tools
  - Training
- Aristotle University of Thessaloniki
  - Democritus University of Thrace
  - University of Athens
  - National Technical University of Athens
  - University of Crete
  - University of Ioannina
  - University of Patras
  - University of Thessaly
  - **BSRC "Alexander Fleming" (Coordinator)**
  - **Athena Research and Innovation Center**
  - Biomedical Research Foundation of the Academy of Athens
  - Centre for Research & Technology Hellas
  - **Foundation for Research and Technology Hellas**
  - Hellenic Center for Marine Research
  - Hellenic Pasteur Institute
  - National Hellenic Research Foundation
  - **Greek Research and Technology Network**
  - Hellenic Society for Computational Biology and Bioinformatics
  - Hellenic Bioinformatics

# ELIXIR-Greece in the National Roadmap

- National network
- Part of the National Roadmap for RIs
- Secure storage of and access to very large datasets
- Provide computational power for data analysis
- Integrate available tools
- Training

## Annex I - National Roadmap RIs

Social Sciences and Humanities				
No	Acronym	Title	ESFRI relation	RIS3 & societal relevance
1.	CESSRI *	Greek Research Infrastructure for Social Sciences	CESSDA, ESS	Evidence base for RIS3, skills, demographic change
2.	GR-SHARE-ERIC *	Greece in SHARE-ERIC	SHARE	Health & Ageing
3.	APOLLONIS *	Greek Infrastructure for Digital Arts, Humanities and Language Research and Innovation	CLARIN, DARIAH	Culture, Tourism, ICT
e-infrastructures				
No	Acronym	Title	ESFRI relation	RIS3 & societal relevance
4.	HELIX *	National Digital Infrastructures for Research	PRACE	ICT
5.	ELIXIR-GR	Managing and analyzing biological data	ELIXIR	Health, ICT
Energy				
No	Acronym	Title	ESFRI relation	RIS3 & societal relevance
6.	PROMETHEUS	A Research Infrastructure for the Integrated Energy Chain	ECCSEL / EU-SOLARIS	Energy, Environment & Sustainable Development
7.	FUVEP	Centre of Excellence for Future Vehicle Environmental Performance		Energy, Environment & Sustainable Development,

# ELIXIR-Greece and data

- National network
- Part of the National Roadmap for RIs
- **Secure storage of and access to very large datasets**
- Provide computational power for data analysis
- Integrate available tools
- Training
- Optimize the existing data **capacity** to meet rising demand
- Build a distributed infrastructure that enables full data **integration**, making the best use of Greece's collective capacity
- Establish universal **principles** for optimizing the use of existing data capacity - for example assessing which data should be stored and made available to users
- Present a transparent **single interface** to a distributed infrastructure.

# ELIXIR-Greece compute

- National network
- Part of the National Roadmap for RIs
- Secure storage of and access to very large datasets
- Provide computational power for data analysis
- Integrate available tools
- Training
- Enhance the **capacity** of the existing compute infrastructure to meet the rising demand
- Maintain **integration** - no matter where the data is distributed
- Make the most **efficient use** of the collective capacity across Europe as it expands

## Node services (supported by the Structural Funds grant)

- **Compute:**

Computational resources (>1000 cores, 1PB disks, >1PB tape library) will be provided in a 'Green' Datacenter at the Louros river by GRNET (national e-Infrastructure providing high-quality international/national networking/computational services)





# ELIXIR-Greece tools

- National network
- Part of the National Roadmap for RIs
- Secure storage of and access to very large datasets
- Provide computational power for data analysis
- **Integrate available tools**
- Training
- **Tool discovery** - ELIXIR users will be able to find, download and deploy the most appropriate tool as quickly as possible.
- **Ease of use** - tools will be usable by as wide a range of life scientists as possible, without the need for specialized knowledge or IT skills.
- **Benchmarking** - often, several tools perform equivalent functions. ELIXIR's users will have access to the results of systematic benchmarking to help them select the most appropriate tool.
- **Interoperability** - bioinformatics tools are seldom used in isolation. The means will be provided to link them together in useful ways without the need for specialized knowledge or IT skills.

# ELIXIR-Greece training

- National network
  - Part of the National Roadmap for RIs
  - Secure storage of and access to very large datasets
  - Provide computational power for data analysis
  - Integrate available tools
  - **Training**
- **Training activities** tailored mainly to the needs of researchers, students and technicians.
  - Specialized **training workshops** for users in the services sector, be it public or private
  - Participation in “train the **researcher**”, “train the **developer**” and “train the **trainer**” activities of **ELIXIR-EUROPE**

# Node services (supported by the Structural Funds grant)

## •Databases:

BRIDEdb, DGP, FINDbase, LncBase, MESBL GC-MS, MjCyc, mirGEN, OMPdb, OpenAIRE, PICKLE, TCGA-Prognostic-Model-Collection, NGS-metadata-DB

## •Tools:

ACT, AMYLPRED2, NGStool, CHRONOS, DEsubs, GprotPRED, GWA R, LifeWatchGreece/MicroCT vLab, METAGEN, metaseqR, M-IOLITE DIANA-microT, DIANA-microTSS, DIANA-mirExTra, DIANA-mirPath, MagicMatch/Biolayout/CAST/RAGE/MCL, PCASNPs, Translational molecular analysis platform, POTAMOS, PRED-TMBB, SweeD, SymCurve, VariantRanker

## •Training:

15 courses, among these:  
Bioinformatics workflow management with Galaxy, NGS data analysis,  
Prediction of protein structure and function,  
Computational resources for membrane proteins,  
Meta-analysis of OMICs data, Biocuration and specialized protein databases,  
Systematic exploratory metagenomic analysis with Galaxy,  
Computer aided drug design and pharmacophore elucidation,  
On line tutorial for ncRNA research

# Node services (supported by the Structural Funds grant)

## •Databases:

BRIDEdb, DGP, FINDbase, LncBase, MESBL GC-MS, MjCyc, mirGEN, OMPdb, OpenAIRE, PICKLE, TCGA-Prognostic-Model-Collection, NGS-metadata-DB

## •Tools:

ACT, AMYLPRED2, NGStool, CHRONOS, DEsubs, GprotPRED, GWA R, LifeWatchGreece/MicroCT vLab, METAGEN, metaseqR, M-IOLITE DIANA-microT, DIANA-microTSS, DIANA-mirExTra, DIANA-mirPath, MagicMatch/Biobioinformatics/CAST/RAGE/MCL, PCASNPs, Translational molecular analysis platform, POTAMOS, PRED-TMBB, SweeD, SymCurve, VariantRanker

## •Training:

15 courses, among these:

Bioinformatics workflow management with Galaxy, NGS data analysis, Prediction of protein structure and function, Computational resources for membrane proteins, Meta-analysis of OMICs data, Biocuration and specialized protein databases, Systematic exploratory metagenomic analysis with Galaxy, Computer aided drug design and pharmacophore elucidation, On line tutorial for ncRNA research

<http://bio.tools> Discovery portal of key bioinformatics resources world-wide

# Pilot actions (supported by the Structural Funds grant)

## Data dependent exploration of marine biology (coordinator: HCMR)

- environmental sequencing, zooplankton community DNA barcoding and meta-barcoding,
- aquaculture fish species genomics ,
- population genomics of marine organisms.

## Computational metabolomics & protein interactomics (coordinator: FORTH)

- standardized repositories of metabolomic data from various biological systems,
- standardized integration of metabolomic with proteomic and transcriptomic data repositories,
- combined reconstruction and analysis of metabolic and protein interaction networks,
- target identification and validation via a systems-level multi-layer strategy

## NonCodingRNA biomarker identification (coordinator: UTH)

- high Throughput Functional Annotation of Epigenetic and Transcriptional Regulators,
- construction of molecular signatures,
- elucidation of Regulatory Networks in Homeostasis and Malignancy

## Pathogen metagenomics (coordinator: HPI)

- infectious diseases diagnosis support,
- outbreak and transmission pattern monitoring,
- targeted vaccine development support,
- determination of pathogen-specific mechanisms of antimicrobial resistance

# ELIXIR-GREECE Scientific Advisory Board

- **Alfonso Valencia** Spanish National Cancer Research Centre
- **Alex Stamatakis** Heidelberg Institute for Theoretical Studies
- **Ioannis Xenarios** University of Lausanne
- **Guy Cochrane** European Bioinformatics Institute
- **Nikos Kyrpidis** Joint Genome Institute, US Department of Energy

# ELIXIR-GREECE Funding

Structural Funds Grant for Research Infrastructures:  
ELIXIR-GR - Hellenic Research Infrastructure for Life  
Sciences Data

4 Mi€ for 3 years

Ends December 2020



# Get involved – keep in touch



## ***Informed*: ELIXIR eNewsletter**

Dear reader,

Welcome to the spring 2015 edition of *Informed*, the ELIXIR eNewsletter.

ELIXIR's mission is to build a sustainable European infrastructure for biological information, supporting life science research and its translation to medicine and the environment, the bio-industries and society. *Informed* provides you with the latest news and updates on developments within the ELIXIR initiative. I hope you enjoy reading.

Dr Niklas Blomberg  
ELIXIR Director



[www.elixir-greece.org](http://www.elixir-greece.org)

[@elixir\\_greece](https://twitter.com/elixir_greece)

Sign up at:

<https://www.elixir-europe.org/news>

