



The European Research Infrastructure Consortium for structural biology research

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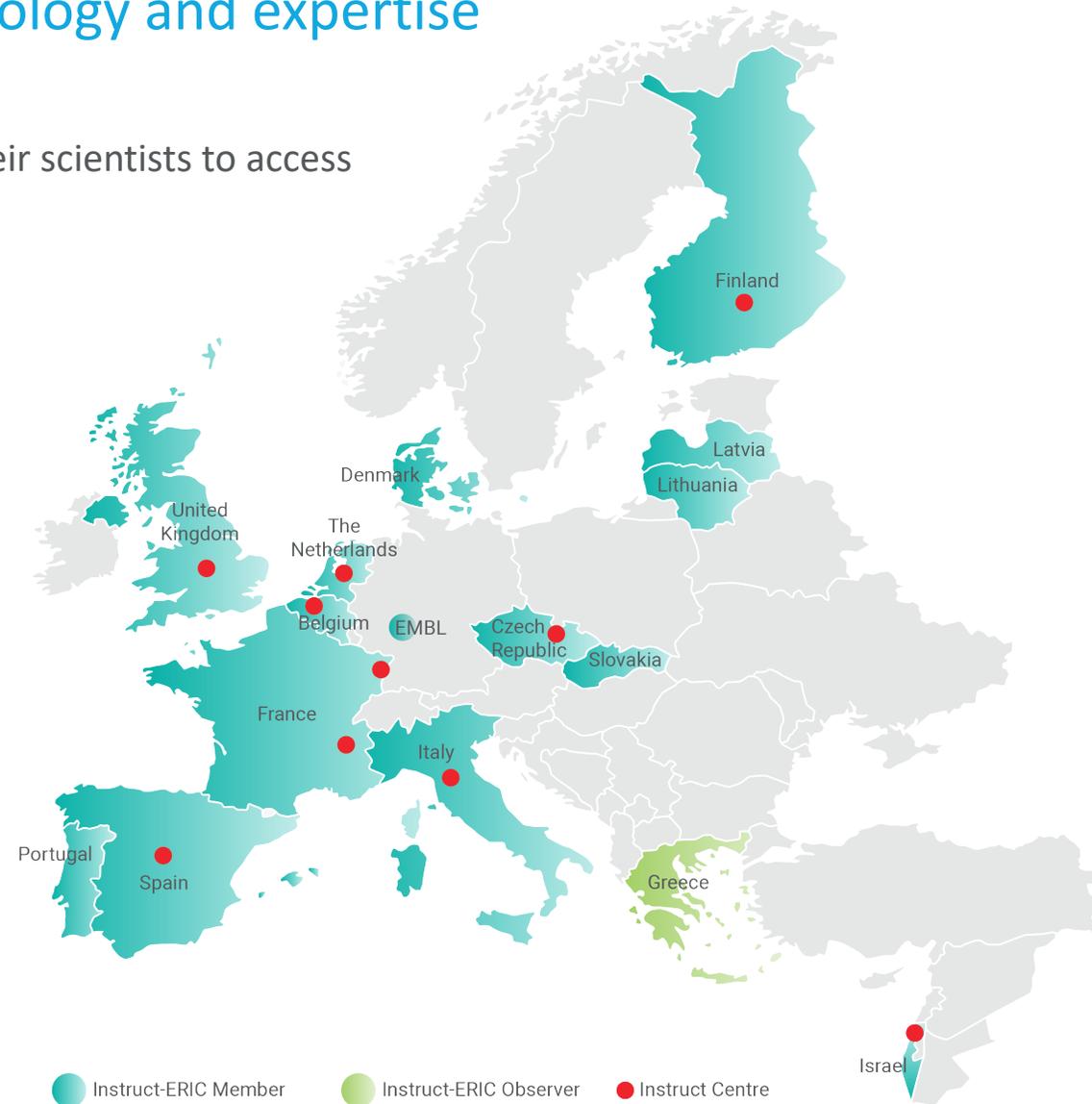


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Instruct-ERIC is the single point of access to technology and expertise for structural biology research.

Instruct has 15 Members that each pay an annual subscription to allow their scientists to access the range of services that are available through Instruct.

Instruct has over 10.000 registered users.



The Instruct consortium comprises **ten Instruct Centres** that offer access to 23 facilities across Europe.



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Proposals are subject to **peer review**, with accepted proposals allocated **funds** to support the work, and a time frame is agreed with the host Instruct Centre.

Research visits



Periodically, Instruct publishes a call for small-scale pilot research projects in integrated structural biology. Instruct awards **fund researchers to obtain preliminary data** that might lead to a grant from a major funder.



R&D funding

Training



Instruct offers training in a range of core and emerging methods, including **hands-on workshops** delivered by international experts.



Internships

The Instruct Internship Programme **funds research visits** of 3 to 6 months to an Instruct Centre in Europe.





Research visits

Technology Catalogue

Instruct offers access to **over 75 different services**, from sample preparation to biomolecular and 3D structural analyses.

Instruct's extensive service catalogue encourages a **multidisciplinary approach** to structural biology research.



sample preparation

- crystallisation
 - macromolecular crystallisation
 - membrane protein crystallisation
- nanobody discovery
 - in vitro
 - E. coli (isotope labelling)
 - insect cells
 - mammalian cells
- protein production
 - library-based screening
 - membrane protein production
 - automated molecular biology



biomolecular analysis

- imaging
 - confocal microscopy
 - video microscopy
 - flow-cytometry
- mass spectrometry
 - native MS
 - proteomic MS
- molecular biophysics
 - differential scanning calorimetry
 - differential scanning fluorescence
 - microscale thermophoresis
 - thermal shift assay
 - analytical ultracentrifugation
 - surface plasmon resonance
 - isothermal calorimetry
 - fluorescence spectroscopy
 - circular dichroism
 - microscale thermophoresis
 - dynamic light scattering
 - SEC-MALLS



3D structural analysis

- electron microscopy
 - cryo-EM
 - SEM
 - TEM
 - image processing
- magnetic resonance
 - EPR
 - solid state NMR
 - solution NMR
 - relaxometry
- X-ray techniques
 - bio-SAXS
 - X-ray diffraction

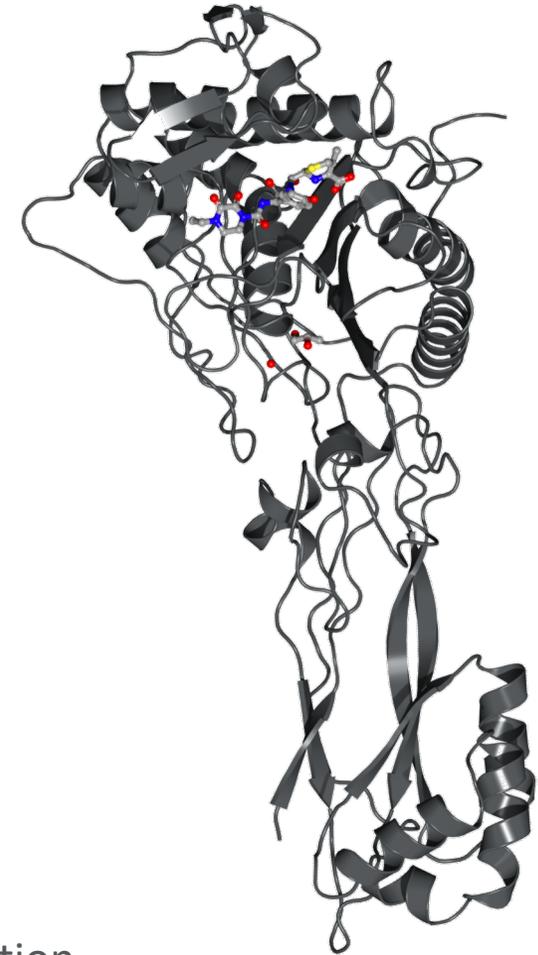


Instruct-ERIC publications library

What do we need:

1. Identifying and collating Instruct-ERIC acknowledged publications
2. Mine the publications' metadata for
 - Projects
 - Countries/Regions
 - Funders
 - Collaborators
3. Linking Instruct-ERIC publications to entries in data repositories (e.g. PDB)

→ All information will be used for reporting, communication and service optimisation.



1. Identifying and collating Instruct-ERIC acknowledged publications – The current strategy

"This work benefited from access to the *[Name of Institute or facility]*, an Instruct-ERIC centre. Financial support was provided by *[funding source 1]*, *[funding source 2]* and *[funding source 3]*."

1. Manual search in publication databases for “Instruct” and/or “Instruct-ERIC”



2. Manual verification of each publication



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1. Identifying and collating Instruct-ERIC funded publications – Challenges

This work benefited from access to the NeCEN, an [Instruct-ERIC center](#). Financial support was provided by [Instruct-ERIC PID 3548](#). We also acknowledge Diamond Light Source for access and support of the cryo-EM facilities at the UK National Electron Bio-imaging Centre (eBIC) (proposal EM17171), funded by the Wellcome Trust, Medical Research Council, and Biotechnology and Biological Sciences Research Council.

This work was supported by grants from the FIS-ISCI (PI16/01585) to ML-H and R01 AI139623-01 to JO. This project also received funding from the European Union's Horizon 2020 Research and Innovation Program under the Marie Skłodowska-Curie grant agreement number 860003 (www.instruct-h2020.eu).

This work used the platforms of the [Grenoble Instruct Center](#) (ISBG: UMS 3518 CNRS-CEA-UJF- EMBL) with support from FRISBI (ANR-10-INSB-05-02)

The authors gratefully would like to thank the financial support from the Horizon 2020 - [Green INSTRUCT](#) – Green INTeGrated STRUCTural elements for retrofitting and new construction of buildings, grant number 723825.

The authors acknowledge the support and the use of resources of [Instruct](#), a Landmark ESFRI project.

This project was funded by the [Dutch Cancer Society \(KWF: AMCUVA-2014-6777\)](#). The authors would like to acknowledge the following members of the [INSTRUCT \(Informing patients about symptom distress\)](#) project group for their significant contributions to the study design: Noor Christoph, Stans Drossaert, Robert Hulsman, and Sebastiaan Stuij. The authors thank Vicky Lehmann for her extensive contributions to the revised paper.



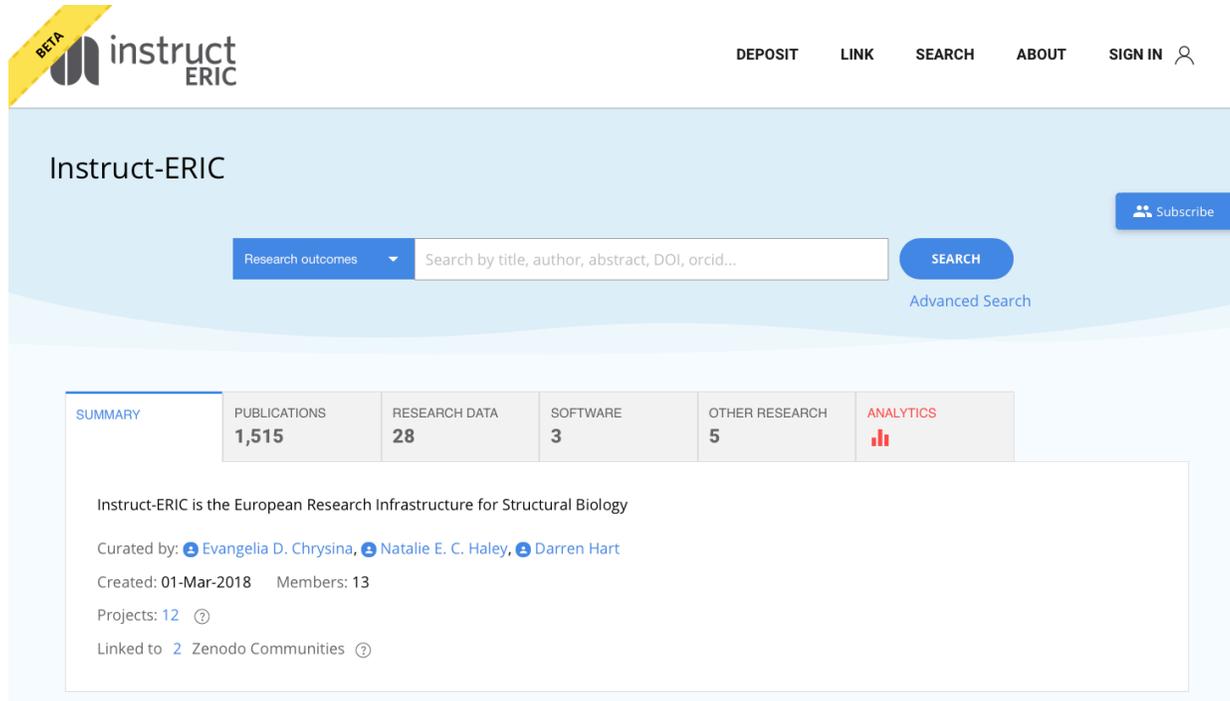
1. Identifying and collating Instruct-ERIC funded publications – with

OpenAIRE Advantages:

- Publications from a larger number of sources
- Detailed mining algorithms
- Metadata mining options
- Independent resource
- Time saving

Challenges:

- Avoiding and identifying false-positives
- Optimizing the mining algorithm to avoid missing publications
- How it identify publications that specifically acknowledge Instruct-ERIC?
Not every publication of the projects we are involved in uses Instruct resources



The screenshot shows the Instruct-ERIC website interface. At the top left is the 'BETA instruct ERIC' logo. The navigation menu includes 'DEPOSIT', 'LINK', 'SEARCH', 'ABOUT', and 'SIGN IN'. The main header area contains the text 'Instruct-ERIC' and a 'Subscribe' button. Below this is a search bar with a dropdown menu set to 'Research outcomes' and a search input field containing the text 'Search by title, author, abstract, DOI, orcid...'. A 'SEARCH' button is to the right of the input field, and a link to 'Advanced Search' is below it. A summary table is displayed below the search bar, with columns for 'SUMMARY', 'PUBLICATIONS', 'RESEARCH DATA', 'SOFTWARE', 'OTHER RESEARCH', and 'ANALYTICS'. The data in the table is as follows:

SUMMARY	PUBLICATIONS	RESEARCH DATA	SOFTWARE	OTHER RESEARCH	ANALYTICS
	1,515	28	3	5	

Below the table, the text reads: 'Instruct-ERIC is the European Research Infrastructure for Structural Biology'. It also lists the curators: 'Curated by: Evangelia D. Chrysina, Natalie E. C. Haley, Darren Hart'. Other information includes 'Created: 01-Mar-2018', 'Members: 13', 'Projects: 12', and 'Linked to 2 Zenodo Communities'.



2. Mine the publications' metadata for Project's output

 filtering publications by project

Project (100)

- BIOSTRUCT-X (263)
- iNEXT (150)
- CORBEL (94)
- BIOMEDBRIDGES (90)
- West-Life (87)
- PCUBE (28)

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Challenge:

How many of the publications in a given project used Instruct-ERIC resources?



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2. Mine the publications' metadata

 OpenAIRE filtering and extraction metadata



Country (79)

- EU (1,130)
- FR (456)
- DE (412)
- GB (385)
- US (290)
- IT (173)

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Funder (22)

- European Commission (1,131)
- Wellcome Trust (137)
- French National Research ... (133)
- National Institutes of He... (132)
- Research Council UK (115)
- Netherlands Organisation f... (46)

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Community (15)

- Instruct-ERIC (1,515)
- EGI Federation (179)
- Agricultural and Food Scie... (18)
- Digital Humanities and Cul... (18)
- COVID-19 (9)
- Science and Innovation Poli... (9)

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Challenge:

- Extraction this information for processing and reporting. To be able to export these tables for dissemination and communication.
- Links to databases are crucial to us but those publications can't be filtered for

3. Linking Instruct-ERIC publications to entries in data repositories



Publication . Article . Other literature type . 2018

From deep TLS validation to ensembles of atomic models built from elemental motions. II. Analysis of TLS refinement results by explicit interpretation

 Afonine, Pavel V.; Adams, Paul D.; Urzhumtsev, Alexandre;

[OPEN ACCESS](#)

Published: 01 Jul 2018

Publisher: eScholarship, University of California

Country: United States

SUMMARY	REFERENCES	RELATED RESEARCH	EXTERNAL DATABASES
	39		2

2IGD 

4MUY 



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Acknowledgments



15
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10
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