



EMBL

International PhD Training

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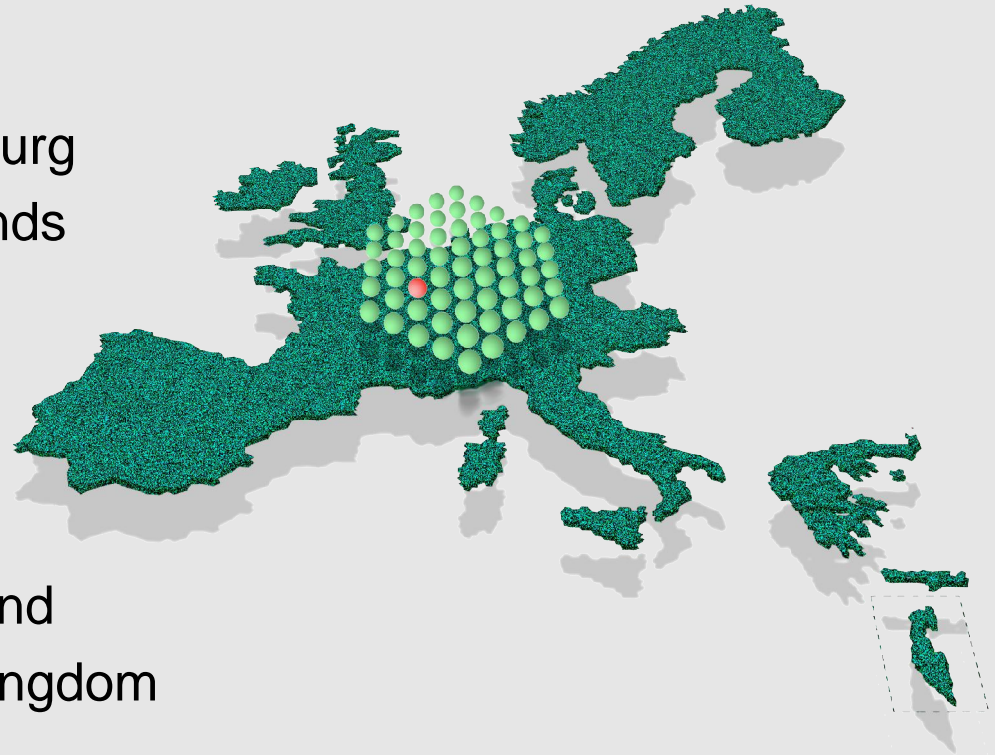
Why create an EMBL?

- The structure of DNA had been solved and first protein structures were being identified in the 1960s
- European brain-drain due to heavy US investment in science
- Europe needed a “CERN” for the new field of molecular biology
- The radical internationalization of science required new training possibilities, better scientist mobility, and large-scale services
- EMBL legally established in 1974, Heidelberg laboratory completed in 1978
- Currently, one of Europe’s largest inter-governmental scientific research organizations (with e.g. CERN, ESA, ESO, ESRF, ILL, EFDA-JET)
- More than 1400 people from 60 nations work at EMBL



20+1 Member States

- Austria
- Belgium
- Croatia
- Denmark
- Finland
- France
- Germany
- Greece
- Iceland
- Ireland
- Israel
- Italy
- Luxembourg
- Netherlands
- Norway
- Portugal
- Spain
- Sweden
- Switzerland
- United Kingdom

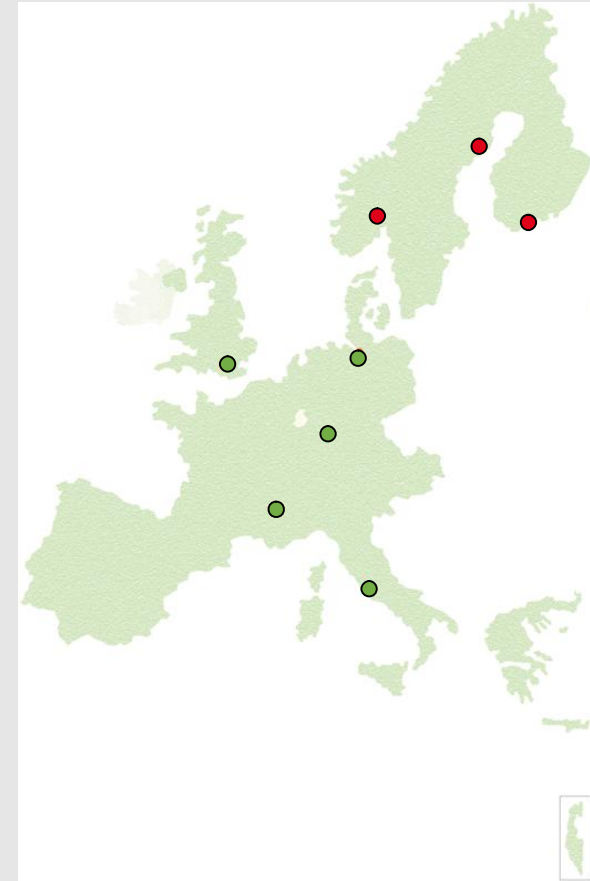


+ Australia (associate member)



Five EMBL Units

- Heidelberg (main laboratory)
 - Cell biology
 - Developmental biology
 - Gene expression
 - Structural and computational biology
 - Biological instrumentation
 - Grenoble (structural biology)
 - Hamburg (structural biology)
 - Hinxton (EBI-EMBL, bioinformatics)
 - Monterotondo (Research Programme in Mouse Biology)
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- Nordic EMBL Partnership in Molecular Medicine (2007)
 - Finnish Institute for Molecular Medicine (Helsinki)
 - Centre for Molecular Medicine (Oslo)
 - Laboratory for Molecular Infection Medicine (Umeå)



EMBL missions



Basic
research



Technology
Transfer



Training at
all levels



Services to
the Member
States



Development
of new
instruments
and methods



Training at all levels

Staff: Time-limited contracts

Scientists at all levels pursue ambitious projects in an interdisciplinary, international environment; staff leave after 9 years.

Visitors: Visitors Programme

Over 12% of the people at EMBL are working visitors; more than 3000 visitors per year

Dozens of seminars, workshops and conferences each year

Non-specialist community: Outreach activities

ELLS: Science training for high-school teachers

Students: International PhD Programme

Degree-granting authority with strong links to national universities



EMBL International PhD Programme

General information

- Created in 1983 (from 8 students/year to ~50 students/year)
- Four-year PhD programme
- EMBL fellowships only for students from member states
- Students from non-member states can join the programme, but only with external funding
- 60% EMBL fellowships / 40% external fellowships
- Currently: 185 students from 38 countries
- All PhD students must enter through the same admission procedure
- “Applicants must hold, or anticipate receiving before enrolment, a university degree that would formally qualify them to enter a PhD or equivalent programme in their home country.”



EMBL International PhD Programme

Recruitment and Admission

- Over 500 applicants/year
 - self-selection
 - 1:5 interviewed, 1:10 accepted
- Applications go through:
 - Evaluation by EMBL scientists familiar with the countries' national education system
 - Evaluation by 2 designated EMBL units
- 5-day selection by EMBL Faculty
 - Each short-listed candidate interviewed by all Group Leaders of two EMBL units
 - Candidate must pass the Initial Admissions Assessment, a panel interview with representatives of all EMBL units
 - Final admission 1:2



EMBL International PhD Programme

Tutoring, Guidance and Thesis Defense

- Students attend a two-month core course at the start of their PhD training
 - Students are guided by a Thesis Advisory Committee
 - 3 EMBL Group Leaders and 1 University Professor
 - Students meet annually with Thesis Advisory Committee
 - present a written report and discuss annual progress
 - discuss proposed future work
 - Students are enrolled for up to 4 years to complete their PhD project
 - Students can defend and obtain their PhD degree
 - from EMBL
 - jointly from EMBL and one of its partner universities
 - from national universities
- **Since inception, several hundred students have defended their PhD-Thesis at more than 90 universities**



EMBL International PhD Programme

EMBL Core Course

- Compulsory, two-month course on molecular biology
 - Over 350 contact hours
- Most EMBL Group Leaders participate by introducing their research topic and relevant methods
- Practical workshops
- Genomics, evolution, developmental biology, behaviour, proteomics and structural biology, cell biology, chromatin and translation, disease mechanisms and pathogens, bioinformatics
- Visit to the outstations
- Scientific communication
- Good scientific practice
- Science & society, bioethics
- Intellectual property and technology transfer
- EMBO/EMBL Meeting on Science and Society
- International PhD symposium (10th in November 2008)



EMBL International PhD Programme

The statutes of EMBL PhD programme

- Students are guided by a Thesis Advisory Committee
 - 3 EMBL Group Leaders and 1 University Professor
- Students meet annually with the committee
 - present a written report and discuss annual progress
 - discuss proposed future work
 - permission to submit the PhD thesis (final year)
- Students are enrolled for up to 4 years to complete their PhD project
- Students can defend and obtain their PhD degree
 1. from EMBL
 2. jointly from EMBL and one of its partner universities
 3. from national universities

➤ **Since inception, hundreds of students have defended their PhD theses at more than 90 universities**



EMBL International PhD Programme

Joint PhD degrees

- The EMBL PhD degree statutes can be adapted as necessary to take into account the procedures of the respective national university
 - Thesis requirements
 - Evaluation of thesis
 - Thesis examination procedures
- EMBL faculty participate in the evaluation and examination of the thesis
- Successful candidates will receive a PhD certificate that indicates the joint EMBL/University doctorate
- 29 universities in 19 different countries currently collaborate with EMBL International PhD Programme



29 Partner Universities

	1. Katholieke Universiteit Leuven	BELGIUM
	2. University of Zagreb	CROATIA
	3. University of Copenhagen	DENMARK
	4. Technical University of Denmark	DENMARK
	5. University of Helsinki	FINLAND
	6. Åbo Akademi University	FINLAND
	7. University of Turku	FINLAND
	8. Université Louis Pasteur de Strasbourg	FRANCE
	9. Université Joseph Fourier de Grenoble	FRANCE
	10. Université Denis Diderot de Paris VII	FRANCE
	11. Université Pierre et Marie Curie de Paris VI	FRANCE
	12. University of Heidelberg	GERMANY
	13. University of Munich	GERMANY
	14. University of Crete	GREECE



	15. Eötvös Lorand University	HUNGARY
	16. University of Iceland	ICELAND
	17. University College Cork	IRELAND
	18. University of Milano	ITALY
	19. University of Bergen	NORWAY
	20. University of Oslo	NORWAY
	21. Universidade de Lisboa	PORTUGAL
	22. Universidade Nova de Lisboa	PORTUGAL
	23. University of Moscow	RUSSIA
	24. Universidad Autonoma de Madrid	SPAIN
	25. Karolinska Institutet	SWEDEN
	26. University of Stockholm	SWEDEN
	27. University of Geneva	SWITZERLAND
	28. Radboud Universiteit Nijmegen	THE NETHERLANDS
	29. University of Dundee	UNITED KINGDOM



EMBL International PhD Programme

Joint PhD degrees

- By collaborating with national universities, EMBL can award PhD degrees
 - no need to negotiate at a national level
 - students' degrees are from the institute in which they worked
 - EMBL internationally well-known -> future prospects
- Joint PhD degrees with EMBL increase international collaboration of national universities
 - EMBL alumni have extensive international contacts



EMBL Alumni

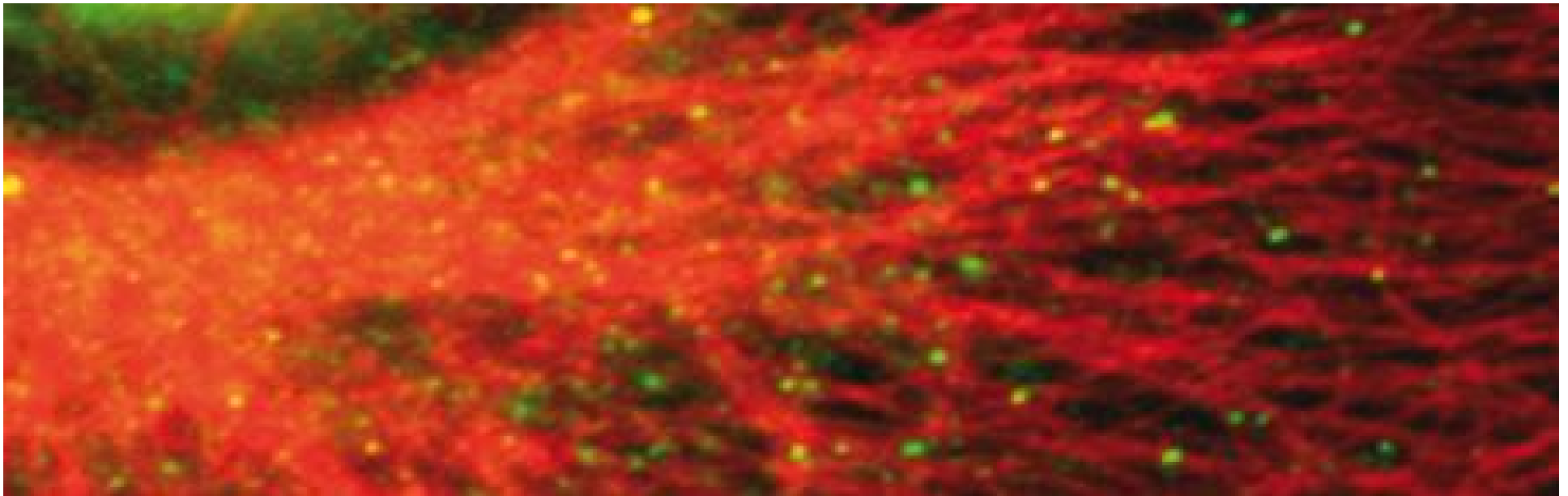
- There are currently over 4200 EMBL alumni worldwide
- 81% of alumni return to a member state
- 69 of alumni are Finnish
- 42 of them are back in Finland
- 13 have gone on to positions elsewhere in the world
- 4 non-Finnish researchers have taken up positions in Finland



EMBL International Centre for Advanced Training (EICAT)

- Foster information exchange and joint integrated planning
 - Promote joint activities within EICAT, between outstations, with EMBO and with institutions in member states
 - Creation of a state-of-the-art conference and training facility
 - Establish new strategic partnerships to promote top level advanced training in Europe
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- International PhD Programme
 - EMBL Courses and Conferences
 - European Laboratory for the Life Sciences (ELLS)
 - Visitors' Programme
 - Scholars' Programme
 - Postdoctoral Programme
 - Science and Society Programme
 - Collaborative Training Programme





www.embl.org



History of EMBL

- 1963 EMBO founded
- 1974-1976 EMBL legally established, operations in Hamburg and Grenoble
- 1978 Heidelberg Laboratory completed
- 1993 EBI in Hinxton, UK
- 1997 Mouse Biology Programme, Monterotondo, Italy
- 2007 Nordic EMBL Partnership in Molecular Medicine
 - Institute for Molecular Medicine (Helsinki)
 - Centre for Molecular Medicine (Oslo)
 - Laboratory for Molecular Infection Medicine (Umeå)

