

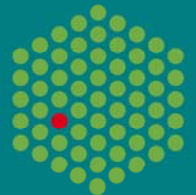
How to become a PhD student at EMBL?

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European Molecular Biology Laboratory

Helsinki, September 1st, 2010

EMBL



Who are we at EMBL?



European

Molecular

Biology

Laboratory

Who are we at EMBL?



- **European Intergovernmental Research Organisation**
- **Founded in 1974**
- **Five sites in four countries**
- **About 1400 in staff; ~ 1100 scientists**
 - 79% from EMBL member states
 - representing more than 60 nationalities
- **20 (+1) Member States**

The Five Branches of EMBL

Heidelberg



Basic research in
molecular biology,
Administration
EMBO

Hamburg



Structural Biology
DESY

Hinxton



European Bioinformatics
Institute (EBI)
Sanger Centre

Grenoble



Structural Biology
ILL ESRF IBS UVHCI

Monterotondo



Mouse Biology
EMMA CNR

EMBL's 20 + 1 Member States



AUSTRIA
BELGIUM
CROATIA
DENMARK
FINLAND
FRANCE
GERMANY
GREECE
ICELAND
IRELAND
ISRAEL
ITALY
LUXEMBURG
NORWAY
PORTUGAL
SPAIN
SWEDEN
SWITZERLAND
THE NETHERLANDS
UNITED KINGDOM

AUSTRALIA (Ass. Member)

What are we doing at EMBL?

EMBL's five missions

- Basic research
- Development of new technologies and instruments
- Technology transfer
- Services to the Member States

- Advanced Training

What can YOU do at EMBL?

Biology

Chemistry

Physics

Mathematics

Informatics

Engineering

Molecular Medicine

www.embl.org/phdprogramme

www.embl.org/postdocs

www.embl.org/jobs



What makes EMBL so special?

- Internationality
 - Five sites in four different European countries
 - More than 60 different nationalities
 - 1104 external collaborations in 2008
 - Global alumni network of > 4500; about 65% in science
- Interdisciplinarity
 - Biologists, Chemists, Physicists Mathematicians, Computer Scientists, Engineers, Biomedical Scientists working together
- Secure funding of > €160 mio in 2008, 25% of which external
- 619 peer-reviewed publications in 2008
- EMBLEM – own tech Transfer Company at arms length

EMBL's citation ranking

- EMBL ranks as top European institute and fourth worldwide in molecular biology and genetics 1999-2009*

	Institution	Papers	Citations	Citations per paper
1	Cold Spring Harbor Lab	669	63,570	95.02
2	MIT	1,995	163,596	82.00
3	Salk Institute for Biological Sciences	707	49,996	70.72
4	European Molecular Biology Lab	1,435	94,736	66.02
5	Memorial Sloan-Kettering Cancer Centre	1,099	71,250	64.83
6	Wellcoem Trust Sanger Institute	790	50,997	64.55
7	Rockefeller University	1,332	83,307	62.54
8	Dana Farber Cancer Institute	673	41,627	61.85
9	Massachusetts General Hospital	1,447	86,773	59.97
10	Cancer Research UK	752	44,343	58.97

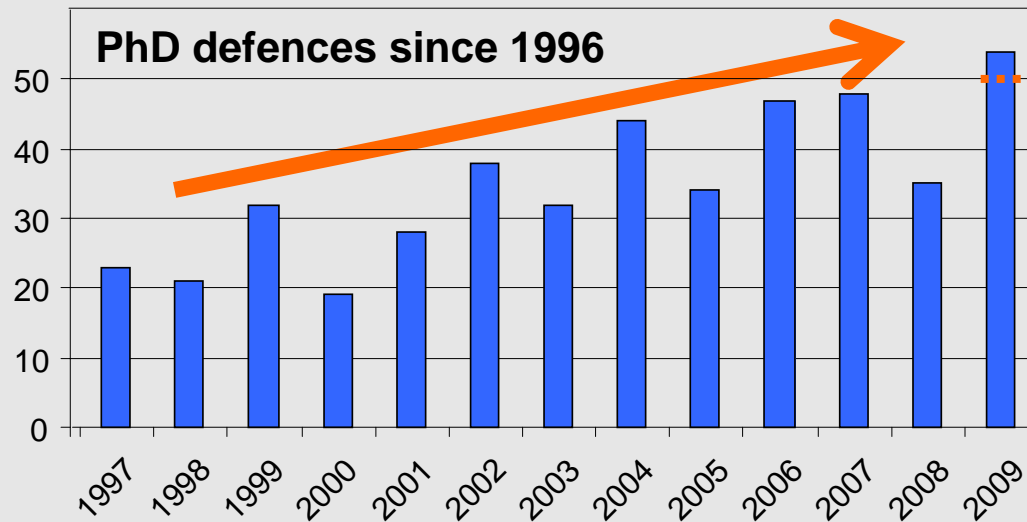
* Thomson Essential Science Indicators

What makes a PhD at EMBL so special?



Allez, les étudiants!

- The EMBL International PhD Programme was founded in 1983 and celebrated its 25th anniversary in 2008
- Since 1997, EMBL can award its own PhD degree
- Since its inception several hundred EIPP students have defended their PhD-thesis at more than 90 universities
- EIPP alumni account for more than 10% of EMBL alumni (>4500)



No need to be a rich student to join the EMBL



- EMBL covers cost for travel and accommodation for the interview week
- All PhD positions come with generous fellowships including broad health care benefits
- EMBL reimburses the fees potentially associated with university registration
- No bench fees!
- After finishing a ,former‘ Predoc may continue to stay up to 4.5 years in total as a ,bridging Postdoc‘

Key performance indicators of a PhD at EMBL



Graduation ceremony at EMBL in December, 2008

Key performance indicators of a PhD at EMBL

- Application rate is at about 20:1
- Predoc to supervisor ratio is on average 2:1
- It takes about 3.5 – 4 years to finish a PhD
- Thesis submission rate of > 95% (predoc data since 1993)
- Majority of EIPP predocs obtains a doctoral degree with distinction (>75%)
- Broad network of partner universities for joint degrees
- Excellent Predoc publication record

EMBL International PhD Programme

Philosophy, Procedures & Pathways

Corner stones of the predoc lifecycle

- Recruitment
- Core Course
- Thesis Advisory Committee (TAC)
- University Registration & Thesis Submission
- Complementary skills training
- Alumni

Recruitment

Advertisement – Application – Admission

Application & eligibility

- Seeking excellent students - based on self-selection
- Application timelines twice a year
- On-line application
- Admission requirements according to rules of national system
- Need 2 academic/scientific references
- National evaluation of application by EMBL faculty
- Evaluation of applications by two designated EMBL Units
- Invitation of 2-3 candidates per position; about 50 open positions annually
- “Shared Applicant Pool“ Initiative

Admission

- No quota system
- Individual 5-day selection by EMBL Faculty:
 - Initial Admission Assessment (panel interview)
 - Successful candidates interviewed by 15-20 Group Leaders
- Tandem formation between candidate and supervisor based on students preferences
- All eligible candidates may enter the waiting list
- Invited candidates may start any time after admission, preferably latest with the core course in October

What does EMBL expect from you?

- Good grades
- Taking pleasure in interdisciplinary thinking
- A profile matching a group leader's expectations regarding the requirements of a specific project
- Enthusiasm, curiosity, dedication, creativity, diligence ...
- Becoming a valuable team member!

Core course

**Speak the same scientific language
&
meet your class mates and faculty**



Core Course

- Core course at the beginning (~400 contact hours)
- Teaching materials on-line (password protected)
- Eight modules with lectures and practicals taught in an interdisciplinary fashion
 - Basic module
 - Chromatin and Translation (5 days)
 - Cell Biology (4 days)
 - Disease Mechanisms and Pathogens (4 days)
 - Genomics (5 days)
 - Proteomics and Structural Biology (7 days)
 - ★ Outstation visit
 - Developmental Biology and Behavior (4 days)
 - Evolution (5 days)
- One module on non-scientific bits
- Bioinformatics course (2nd year; ~30 contact hours)

Thesis Advisory Committee (TAC)

Mentoring & Guidance

Thesis Advisory Committee

- Your first tailor-made networking opportunity!

- Thesis Advisory Committee (TAC)
 - Three EMBL Group Leaders and one external member (University Professor)

- Annual TAC meetings
 - present a written report and discuss annual progress
 - discuss proposed future work

- 4 years to complete PhD work

Mentoring & guidance throughout your PhD

Expected outcome of the TAC meetings

1 st TAC:	2 nd TAC :	3 rd TAC 'Rehearsal' for Thesis Defense
Well defined thesis project including risk assessment	Monitoring adequate progress in view of the PhD project	Timing of thesis submission
Predoc well acquainted with the scientific landscape in which the thesis project is embedded	Refined path forward for following period	What experiments still need to be done to finish up
Paperwork ready for university registration	Plan/schedule for publication(s)	Recommendation on contract extension beyond the 3.5 year mark
Individual development plan	Report/outlook on conference attendance	
	Individual development plan	

University Registration & Thesis Submission

Since 1997, EMBL can award its own PhD degree



0 months



42-48 months max!

Why university registration?

Predocs can defend and obtain their PhD degree

- from EMBL (since 1997)
- jointly from EMBL and one of its 29 partner universities in 19 countries
- from national universities

29 Partner Universities in 19 Countries plus



EMBL's network of partner universities

- | | | | |
|--|---------------------------------|--|--------------------------------|
| | Katholieke Universiteit Leuven | | Eötvös Lorand University |
| | University of Zagreb | | University of Iceland |
| | University of Copenhagen | | University College Cork |
| | Technical University of Denmark | | University of Milano |
| | Åbo Akademi University | | University of Bergen |
| | University of Jyväskylä | | University of Oslo |
| | University of Turku | | Universidade de Lisboa |
| | University of Strasbourg | | Universidade Nova de Lisboa |
| | University of Bordeaux | | University of Moscow |
| | University of Montpellier | | Universidad Autonoma de Madrid |
| | University of Poitiers | | Karolinska Institutet |
| | University of Bonn | | University of Umeå |
| | University of Göttingen | | University of Basel |
| | University of Athens | | Radboud University Nijmegen |
| | | | University of Cambridge |



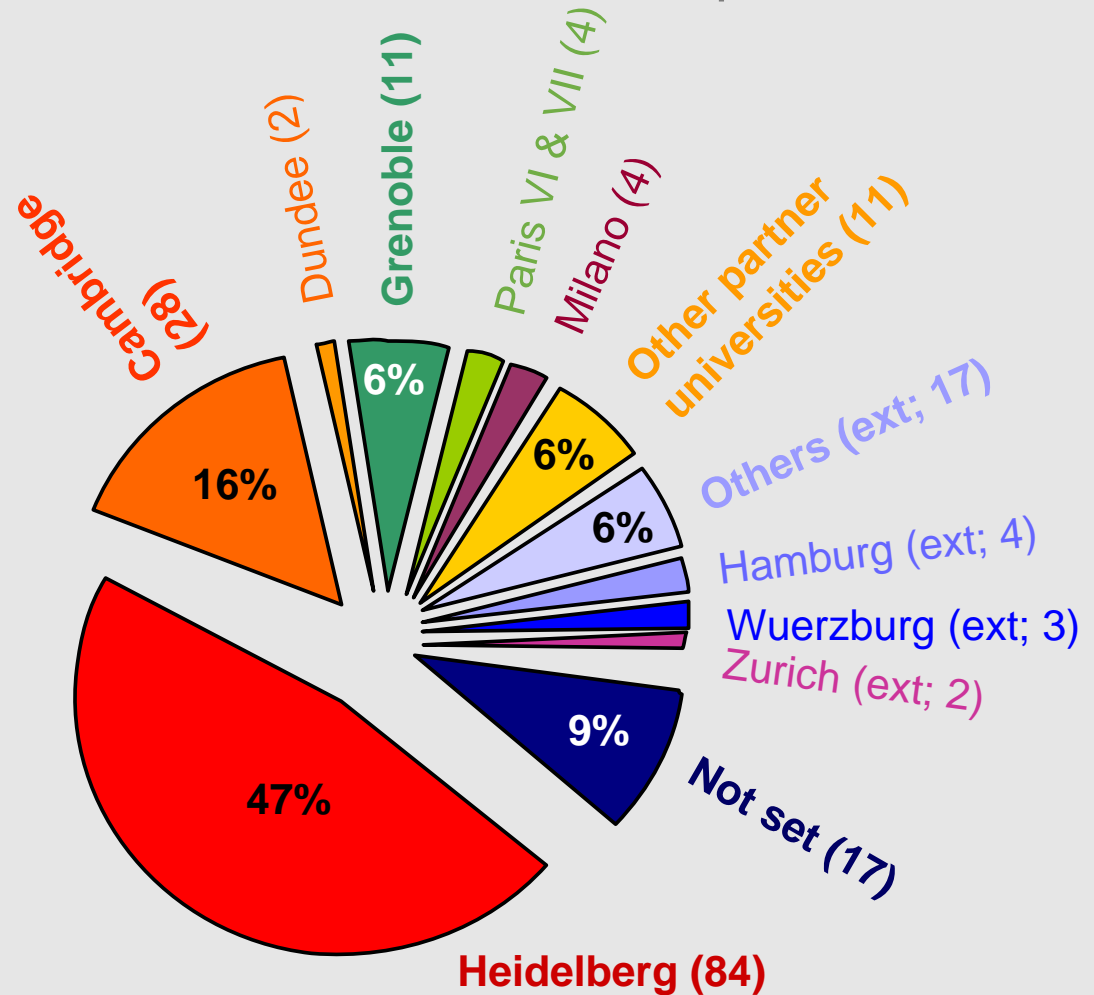
GROUP OF EIGHT
Australia

At which universities do EIPP predocs register ?

Predocs can defend and obtain their PhD degree

- from EMBL (since 1997)
- jointly from EMBL and one of its 29 partner universities in 19 countries
- from national universities

180 students in total as of April 2009



Complementary skills training

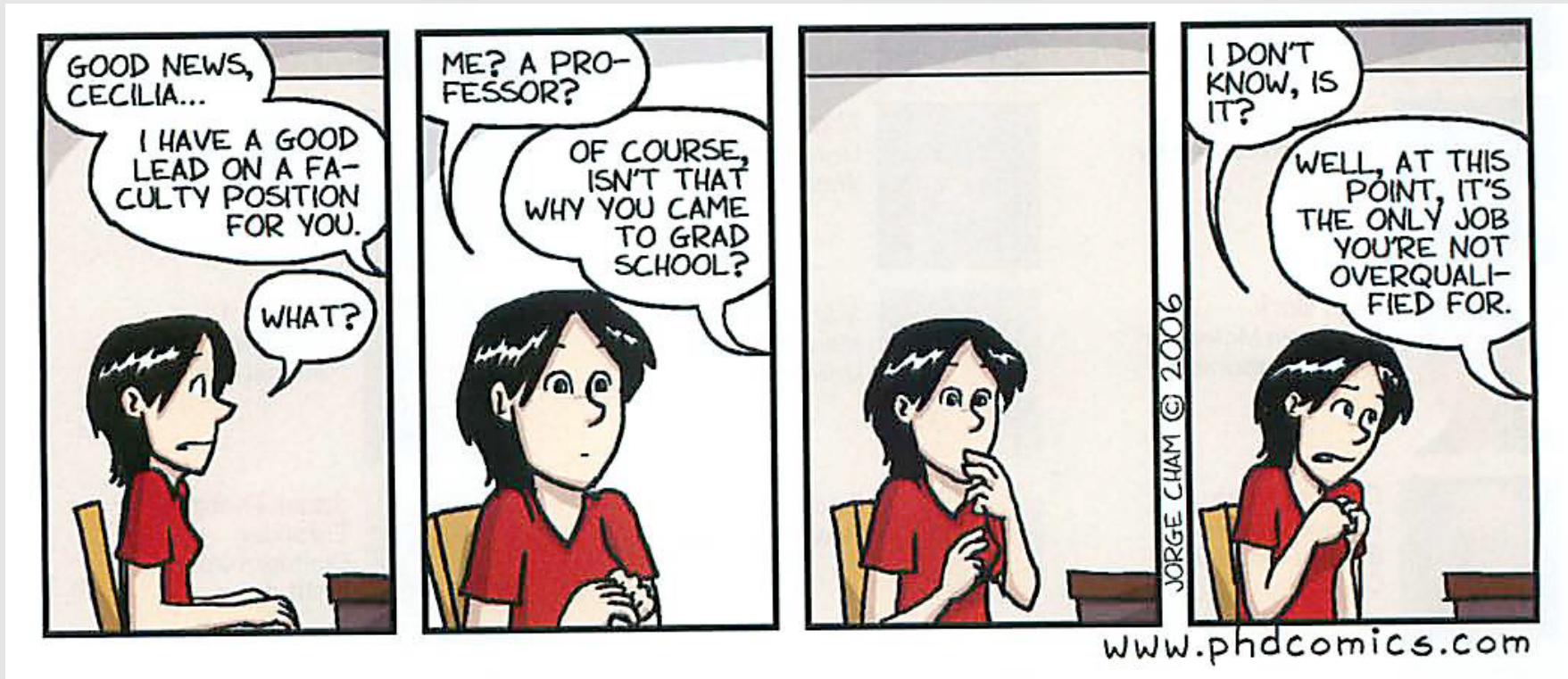
How to balance between ,too much vs. not enough' ?

The right thing at the right time...

-

And what to do after the PhD?

... how to avoid the Cecilia phenotype?



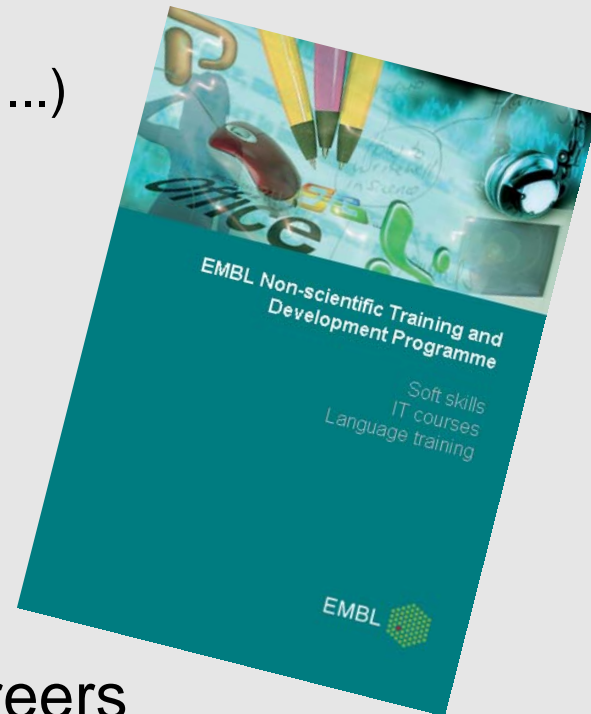
Predoc activities at EMBL – fostering early independence

- 12th International EMBL PhD Student Symposium 2010 at EMBL ATC in Heidelberg on October 21-23, 2010
<http://phdsymposium.embl.org/>
- Annual retreats
 - PhD retreat
 - Predoc representatives retreat
- Lab Day & Career Day
- Predoc Wiki
- Skiing, cooking, diving, theatre, choir, ...
- ...



Participating in non-scientific training activities

- Language training (German, English, French)
- IT courses (Microsoft Office and more)
- General training and development programme
 - Personal skills
(time management, personal effectiveness, ...)
 - Communication skills
(presentation skills, scientific writing, ...)
 - Project management
 - Grant applications & interviewing skills
 - Team building & conflict management
 - ...
- Career day – insight into alternative careers

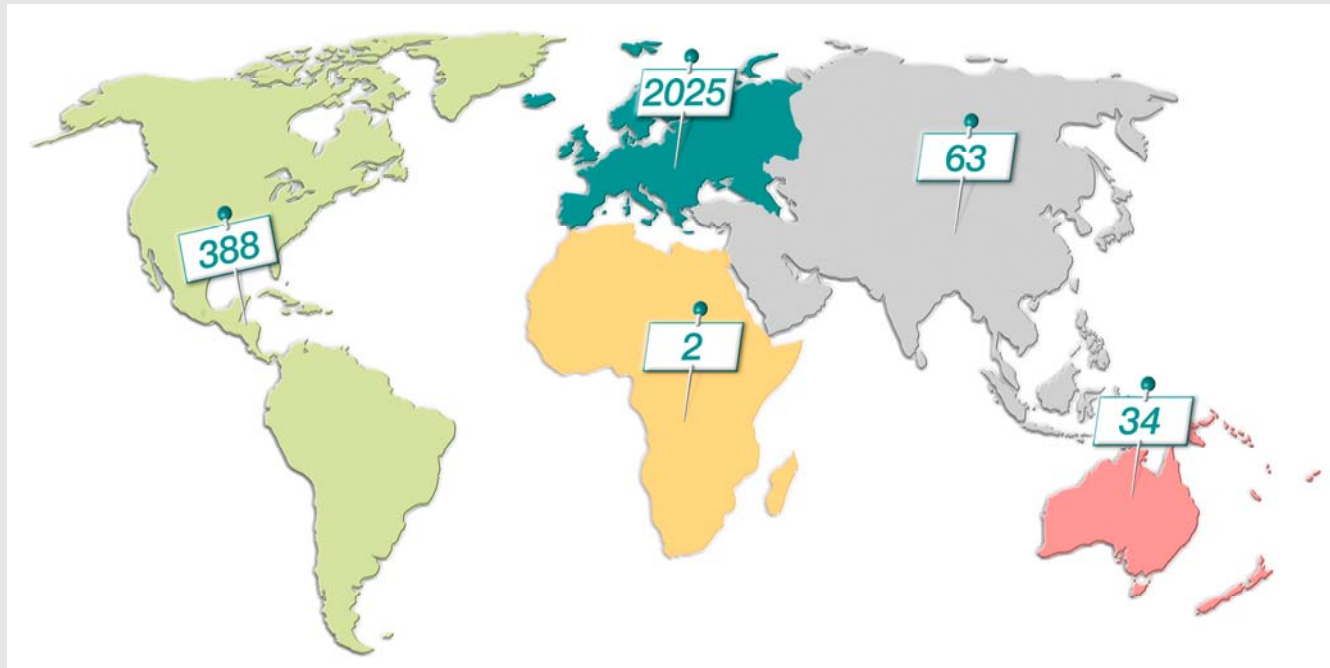


EIPP alumni

The EIPP product: successful alumni worldwide!

Global alumni network of more than 4500

- About 65% of EMBL alumni are active in science
- EIPP alumni account for more than 10% of EMBL alumni
- Visiting PhD's account for another 10% of the EMBL alumni

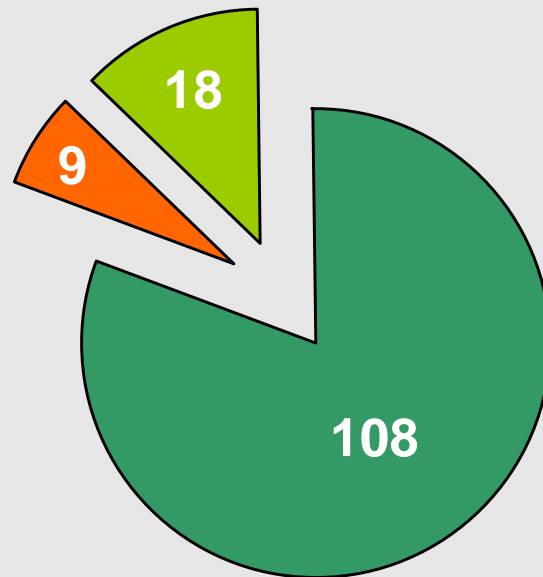


What do EIPP students do after their PhD?

(Data from students that defended since 01/2004)

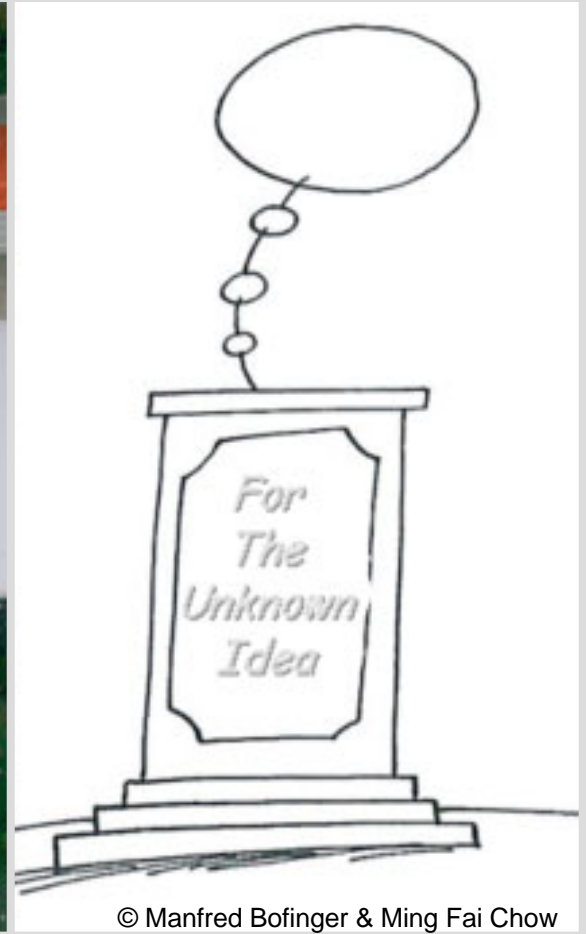
Scientific careers
outside research (13%)

Private sector
research (7%)



Academic
research (80%)

There is always space for your ideas!



Thank you!

EMBL

