User Training at EMBL-EBI, with forward glimpses towards ELIXIR

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Head of Outreach and Training
EMBL-EBI
About me

**BA**
- Preclinical medicine and BA in Physiological Sciences, University of Oxford (1989)

**PhD**
- PhD in Biochemistry, University of Cambridge, working on phosphinositide kinases at Babraham (1993)

**Then**

**Then**
- Set up EBI’s Outreach programme (2002), then its user training programme (2007). Currently Head of Outreach and Training at

**Other**
- Co-chaired training workpackage for ELIXIR’s prep phase; represent ELIXIR in the EMTRAIN project; lead training workpackage for BioMedBridges

In summary, I see myself as...
a life scientist; a generalist with a bird’s eye view of the molecular life sciences; passionate about enabling others to make the most of publicly accessible data
About EMBL-EBI

What?
• Europe’s leading institute for providing openly accessible biological data to the research community

When?
• Opened 1994; Director is Janet Thornton, Associate Directors are Rolf Apweiler and Ewan Birney. 520 staff, 75% of whom work on EBI services

How?
• Services | research | training | industry support | coordinating European bioinformatics

Who?
• Our communities are life scientists of all flavours – fundamental, biomedical, agri-food, environmental, bench biologists to geeks, predocs to emeritus professors
About ELIXIR

What?
• Europe’s emerging infrastructure for biological data; one of >10 new research infrastructures in the biomedical sciences

When?
• Preparatory phase began in Jan 2007 and ends Dec 2012; construction phase will begin in earnest once ICA signed and ELIXIR director in office

How?
• Distributed infrastructure with hub at EBI and nodes throughout Europe offering data, compute, tools, standards, training

Who?
• We don’t know yet! 11 countries have signed MoU; ICA is in preparation and we’re advertising for ELIXIR’s founding director
External training at EMBL-EBI

What?
• We enable researchers to make the most of publicly available biological data

Who?
• We train new users, many of whom are bench biologists, through to advanced users, many of whom are bioinformaticians

Got
• We offer introductory online courses, bespoke ‘roadshows’ for new users worldwide and intensive hands-on courses and workshops at EMBL-EBI

Wants
• More investment in online training; seamless interaction between online and face-to-face training
• A better system for capturing info on who we’ve trained and for keeping in touch with them

Best
• Seeing the popularity of our courses skyrocket over the last five years, to the point where we need new training facilities

Worst
• Back in 2006 – getting very frank feedback from a pilot roadshow that some of our trainers hadn’t attempted to engage with their audience
Why is user training important?

- Data analysis is now the major bottleneck to research in the molecular life sciences
- There are an estimated 3 million life scientists in Europe; each is potentially a user of EMBL-EBI’s data resources
- Many molecular life scientists feel under-qualified to make the most of publicly available data
- The user community is growing and diversifying…
User training  www.ebi.ac.uk/training

Learn to make the most of Europe’s most widely used databases for life scientists

Train at EMBL-EBI
Gain hands-on experience in our state-of-the-art training room

Train at your place
Choose the training modules relevant to you and your colleagues and let us bring the Bioinformatics Roadshow* to you

Train online
Coming in 2011: train wherever and whenever you like and at your own pace

* The Bioinformatics Roadshow is funded by the European Commission under SLING, grant agreement number 226073 (Integrating Activity) within the Research Infrastructures of the FP7 Capacities Specific Programme.
Training at EMBL-EBI

• Hands-on courses for experimental researchers
• Selection of applicants to address escalating demand
• Immersive philosophy in which networking among trainers and delegates is strongly encouraged
• Programme reflects the breadth of our services and is an integral part of EMBL’s course and conference programme
• Guest trainers and guest lecturers enrich our courses and stimulate collaboration
Training on tour: the roadshow

• Mobile training programme offering hands-on training worldwide
• Especially suitable for new users: half-day modules can be combined to suit different types of user
• Some roadshows funded by external grants, others by the host
• Long-term goal is to develop enabling relationships with hosts in which we help them to develop local bioinformatics training
Training on demand: Train online

• **Free, flexible online courses** on the EMBL-EBI's most widely used data resources, created for life scientists by experts in our service teams
• No previous experience of bioinformatics necessary to benefit from the courses
• We want to help researchers to be highly competent *users* of our data resources; we are not trying to train them to become bioinformaticians
• Trainees can repeat the courses as many times as they like, or just complete part of a course to brush up on how to perform a specific task
• Beta site launched Sep 2011
Course structure

- Learning objectives
- Show and tell
- What have I learned?
- Apply learning to real use cases
- Practice by myself
- Have I understood the key concepts?
- Learn more

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EMBL-EBI
ELIXIR training

What?
- Training workpackage recommended a central training hub supporting training experts embedded in the nodes

When?
- Will become clear once ICA signed and ELIXIR director in office

How?
- Training registry; support for trainers in nodes; shared benchmarking and evaluation systems; development and integration of new training programmes; interaction with other infrastructures

Who?
- We don’t know yet! 11 countries have signed MoU; ICA is in preparation and we’re advertising for ELIXIR’s founding director
ELIXIR training strategy

ELIXIR Training Infrastructure

Data, tool and standards nodes
- Databases
- Tools
- Standards

Training hub
- Build and maintain training registry
- Develop benchmarking and evaluation systems
- Coordinate support and developmental opportunities for trainers
- Enable development of new training programmes; integration
- Interact with other training infrastructures

Interact with other training infrastructures
The IMI initiative builds a community of great scientists to deliver safer, more effective new medicines for patients.

**EMTRAIN in a nutshell**

Creating a network to integrate education and training programmes

**EMTRAIN** strengthens the pan-European community of scientists in drug development by:

- We promote trans-disciplinary courses and address gaps where found
- We build a programme for public-private partnership PhD students who understand industry needs
- We promote pan-European standards in education and training
- We ensure broad stakeholder support for 21st century skills and competencies

Helping European scientists to navigate the jungle of courses

We provide a comprehensive on-course® catalogue ([www.on-course.eu](http://www.on-course.eu)) with quality indicators

We provide guidance about what competencies are required in drug development

Fostering mobility of students and scientists
Needs and dreams...

- **Issues**
  - There’s no recognised profession or career structure for bioinformatics trainers and training coordinators; consequently it’s hard to attract the best
  - Challenging to cater for such a broad audience of users

- **Can’t do**
  - Little provision for training those who **operate** bioinformatics services (as opposed to those who **use** them)

- **Dreams**
  - EMBL-EBI contributing significantly to a global community of trainers, both for people who operate bioinformatics infrastructure and for those who use it – building bioinformatics training capacity

- **Vision for B³CB**
  - B³CB could nucleate that community. It might also help to bridge the gap between bioinformatics educators working at undergrad and master’s level with trainers developing continuing professional development for researchers