EMBL-EBI's training programme
Improving accessibility to industrial users

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Acknowledgements
With special thanks to...
Training: a core part of EMBL-EBI’s mission

• To provide freely available data and bioinformatics services to all facets of the scientific community

• To contribute to the advancement of biology through basic investigator-driven research

• To provide advanced bioinformatics training to scientists at all levels

• To help disseminate cutting-edge technologies to industry

• To coordinate biological data provision throughout Europe
TRAINING
On-site

Delivering courses to develop **practical skills** and knowledge; led by EMBL-EBI experts and hosted in our **purpose-built** training suite.
Courses map to EMBL-EBI services

- **DNA & RNA**
  genes, genomes & variation

- **Gene expression**
  RNA, protein & metabolite expression

- **Proteins**
  sequences, families & motifs

- **Structures**
  molecular & cellular structures

- **Chemical biology**
  small molecules & chemogenomics

- **Molecular systems**
  reactions, interactions & pathways

- **Cross-domain**
  Literature, ontologies & patents
TRAINING
Off-site

Sending our **dedicated trainers** to host organisations to provide **hands-on** training on EMBL-EBI data, tools and resources
Empowering a world of users…

In 2013 we trained genome biologists in Kolkata, Bangalore and Beijing, practicing clinicians in the Faroe Islands, agricultural scientists in Slovenia, Spain and Kenya, safety scientists in Italy and the Netherlands, chemical biologists in Heidelberg and graduate students in Zimbabwe ....
Providing free access to EMBL-EBI courses, allowing individuals to choose when, where and how they learn.
What is Train online?

• An elearning portal providing 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

• Our goal is to help researchers to be highly competent users of our data resources and tools; 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

• New courses added regularly; register for our newsletter at www.ebi.ac.uk/training/online
Enabling trainer communities to develop relevant and high-quality training courses; supported by EMBL-EBI experts and materials.
How does it work?

- Providing guidance on training delivery, course design and development and feedback mechanisms
- Provision of up to date materials and information to support curriculum design and delivery
- Support trainers in developing their training skills generally
- Provide the basis for a network of trainers to exchange ideas
2013 at a glance…

• More than 140 members of personnel contributed to delivery of 250 events, reaching an audience of 8802 people

• 82,000 unique IP addresses accessed Train online

• Held 61 bioinformatics training courses, workshops and scientific outreach events at EMBL-EBI, serving a total of 1427 people

• Delivered 205 short courses, workshops and outreach events to approximately 7375 people in 28 countries on 6 continents

• Trained 13 new external trainers who, in turn, delivered 6 courses reaching 205 individuals
Supporting European industry

Five pillars to support European Industry

- Industry Programme & SME Forum
- Publicly funded projects with industry participation, e.g. IMI
- Individual short term bilateral projects or projects with a small number of Industry partners
- Spin-out companies
- Innovation and Translation Initiative
IMI Education & Training Programmes

- European Medicines Research Training Network (EMTRAIN)
  Sustainable pan-European platform for education and training covering the whole life cycle of medicines research, from basic science through clinical development to pharmacovigilance.

- European Modular Education and Training Programme in Safety Sciences for Medicines
  - Master of Advanced Safety Sciences of Medicines

- Pharmaceutical Medicine Training Programmes
  - Integrated Drug Development Sciences/Pharmaceutical Medicine

- European Programme in Pharmacovigilance and Pharmacoepidemiology
  - Certificates, Master and PhD in Pharmacovigilance and Pharmacoepidemiology

- European Patients’ Academy on Therapeutic Innovation
  Provide information to patients on medicines research and development.
  Increase the capacities and capabilities patients and patient organisations to be effective advocates and advisors in medicines research
EMTRAIN’s three strands

**PhD programme**
A programme for public–private partnership PhD students; building a firm understanding of industry needs

**EMTRAIN** strengthens the pan-European community of scientists in medicines development

**LifeTrain**
Working with towards a mutually recognised framework for continuing professional development in the biomedical sciences

**on-course®**
A comprehensive catalogue of postgraduate courses in the biomedical sciences, with quality indicators

www.on-course.eu
# About on-course®

www.on-course.eu

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Driving the IMI Education and Training Vision in Europe
Bioinformatics for Discovery: Modular Training Partnership

• Goal: equip bench-based discovery biologists in the pharma, agri-food and consumer goods industries with the bioinformatics competencies required to make important decisions in target and biomarker discovery, prioritisation and validation

• Bayer, GSK, Syngenta and Unilever are partners and the entire EMBL-EBI Industry Programme will help to shape the curriculum

• Project start date: 1 July 2014
MTP

Initial 2 day on-site workshop

Workflow based learning focusing on appropriate resources

Online study over 6 months

Self paced study; monitored by mentors

Final assessment task

Support via webinars and discussion forums

• Workflows: developed with industry partners to reflect “real-world” problems faced by discovery scientists
Example workflow

‘I’m working on an autoimmune disease and I want to suppress activation of T cells following T-cell receptor binding…’

What proteins are involved in T-cell signalling? (Reactome)

Are there any known connections between any of these proteins and immunosuppression? (UniProt -> ZAP70)

Is ZAP70 T-cell specific? (PRIDE; ArrayExpress)

Will my mouse be relevant to the human condition? (Species comparisons in Reactome)

Are there any protein structure data? (PDBe)

Are there any ADMET data? (ChEMBL)

What is known about their selectivity? (CheMBL)

What is known about chemical structures that bind to ZAP70? (ChEMBL)

Decision on whether to pursue ZAP-70 as a target for this disease
In summary…

• Training is a core part of EMBL-EBI’s mission
• Our interactions with industry shape the way we train our users
• Online, on-demand training has been designed specifically with SMEs in mind
• Our interactions with the Innovate Medicines Initiative have led us to consider how EMBL-EBI’s training programme fits into the broader training landscape
• Industrial involvement in training provides invaluable input into the development of our services
Thank you for listening!

www.ebi.ac.uk/training