



GOBLET, TeSS, BD2K...

'e-learning'

an *ELIXIR-GOBLET* workshop



T.K.Attwood



GOBLET: www.mygoblet.org

- Biggest recurring question
 - What's the difference between GOBLET & TeSS?
- Answer...?

Welcome to TeSS: ELIXIR's Training Portal

ELIXIR's TeSS (Training eSupport System) is a portal for disseminating, discovering and packaging training resources, aggregating information from ELIXIR nodes and 3rd-party providers.

The platform also acts as a 'department store', where its 'departments' (ELIXIR nodes) promote their latest training news and events, and contribute to its catalogue of training materials. The catalogue may be navigated via training 'workflows' or relevant materials collected into bespoke training 'packages'.

ELIXIR Nodes

TeSS aims to provide an at-a-glance view of ELIXIR's training landscape, while also offering individual 'shop windows', giving customisable views of the hottest training news, events, activity highlights, etc. from nodes.

FAQ

Check out our [FAQ](#) to find out more about TeSS.

Events
Discover the latest training events and news from ELIXIR nodes and 3rd-party providers.

Materials
Browse the catalogue of materials offered by ELIXIR nodes and 3rd-party providers.

Packages
Create training packages by grouping resources that address your particular research topic.

Workflows
Visualise 'workflows' to identify resources specific to your research and training needs.

Content providers
Browse content providers and follow links to their associated training materials.

GOBLET
Global Organisation for Bioinformatics Learning, Education & Training

Training portal | About us | Join us!

Become a contributor | Login | Search...

GOBLET Meeting 2014
Galatia, 15 November 2014

Announcements

- An ELIXIR/GOBLET workshop: defining an e-learning lingua franca
Fri, Aug 21 2015
- GOBLET Consortium publication in PLoS CB
Thu, Apr 9 2015
- GOBLET Consortium poster published in F1000Research
Fri, Jul 24 2015
- GOBLET in the blogosphere
Wed, Mar 11 2015

Tweets

- VickySchneider** @MickySchneider 3 Sep
Bioinformatics Autodiscovery of Training Materials (BATMat) imbatmat.com @JohnMHancock @mygobletorg @manuelcorreas
Retweeted by GOBLET
- Asela Wijeratne** @asela_1 31 Aug
Great article: Active learning strategies for bioinformatics teaching wp.me/p1vFaw-be via @lexnederbragt
Retweeted by GOBLET



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GOBLET: training portal

The screenshot shows the GOBLET training portal interface. At the top, there is a navigation menu with links for 'Training portal', 'About us', and 'Join us!'. Below this, a search bar and a 'Become a contributor | Login' link are visible. The main content area is titled 'Trainers and organisers' and includes a brief description of the portal's purpose. A filter section allows users to filter by registration date. The main table lists several trainers and their topics, with a legend on the right side explaining the membership levels indicated by goblet icons.









Trainers and organisers

We encourage members who wish to share materials, to advertise their events or otherwise contribute to this site to kindly provide their details as a trainer or organiser using our online form.

Displaying 1 - 30 of 85

Filter by registration date of trainers







Year Apply

Trainers and organisers	Topic	
Emily Angiolini		
 Teresa K Attwood	bioinformatics, protein sequence analysis, linking data and literature	
 Dr Gary Bader	Biological networks, Pathway analysis	
Ms Cecilia Banag		
Sarah Blackford		
 Dr Marie-Claude Blatter	introduction to bioinformatics, Biological databases, protein sequence analysis, Protein sequence databases	
Jaine Blayney	Survival analysis, Discovery eg unsupervised methods, Classification, Integration of omics data with clinico-path data	
 Erik Bongcam-Rudloff	bioinformatics	

Training portal

- Trainers and organisers
 - By membership
 - Map
- Training materials
- Course pages
- FAQ
- Video Tutorials

Legend

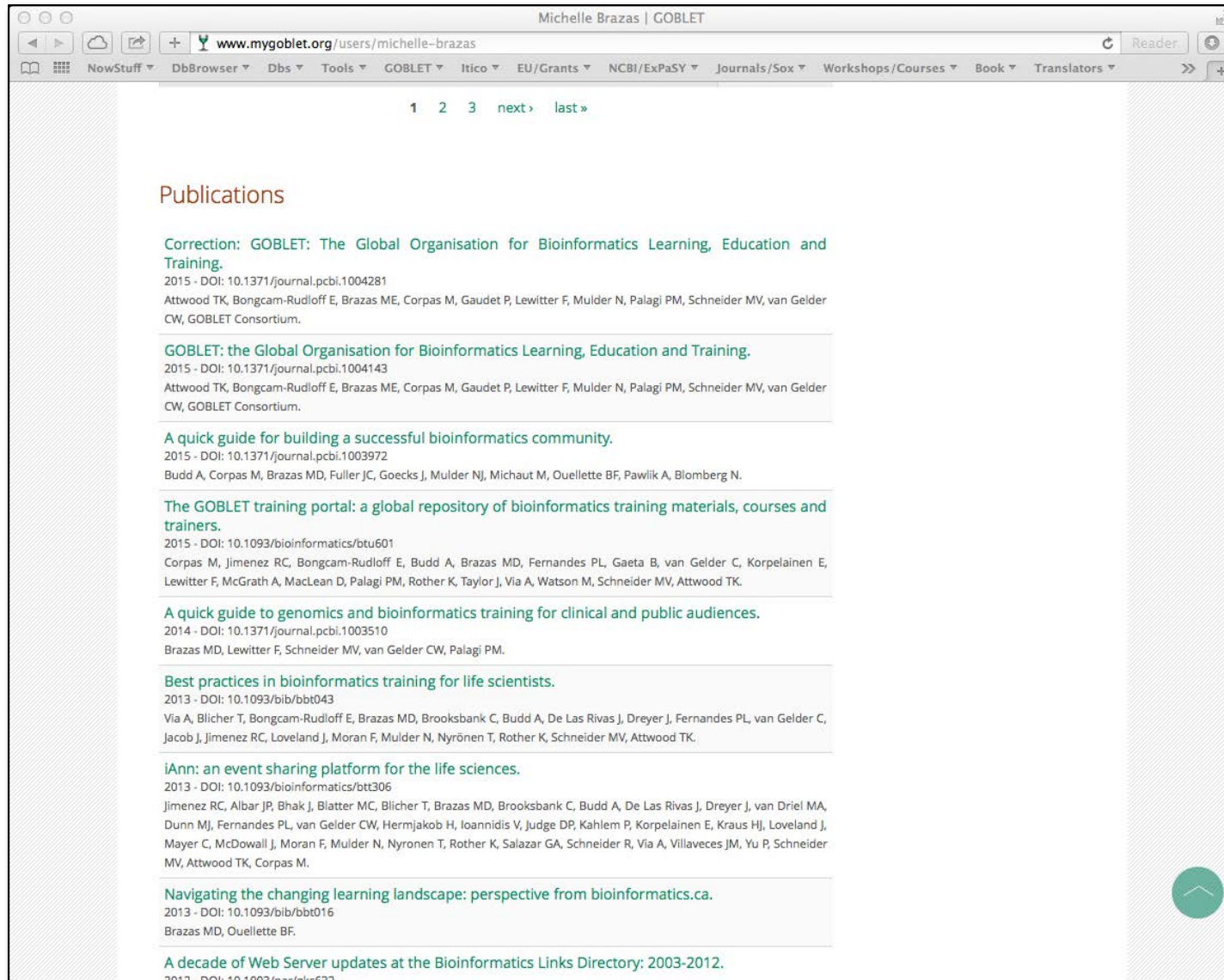
-  Individual member
-  Student member
-  Bronze member
-  Silver member
-  Gold member
-  Platinum member



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GOBLET: training portal



Michelle Brazas | GOBLET

www.mygoblet.org/users/michelle-brazas

NowStuff ▾ DbBrowser ▾ Dbs ▾ Tools ▾ GOBLET ▾ Itico ▾ EU/Grants ▾ NCBI/ExPaSY ▾ Journals/Sox ▾ Workshops/Courses ▾ Book ▾ Translators ▾

1 2 3 next › last »

Publications

Correction: GOBLET: The Global Organisation for Bioinformatics Learning, Education and Training.
2015 - DOI: 10.1371/journal.pcbi.1004281
Attwood TK, Bongcam-Rudloff E, Brazas ME, Corpas M, Gaudet P, Lewitter F, Mulder N, Palagi PM, Schneider MV, van Gelder CW, GOBLET Consortium.

GOBLET: the Global Organisation for Bioinformatics Learning, Education and Training.
2015 - DOI: 10.1371/journal.pcbi.1004143
Attwood TK, Bongcam-Rudloff E, Brazas ME, Corpas M, Gaudet P, Lewitter F, Mulder N, Palagi PM, Schneider MV, van Gelder CW, GOBLET Consortium.

A quick guide for building a successful bioinformatics community.
2015 - DOI: 10.1371/journal.pcbi.1003972
Budd A, Corpas M, Brazas MD, Fuller JC, Goecks J, Mulder NJ, Michaut M, Ouellette BF, Pawlik A, Blomberg N.

The GOBLET training portal: a global repository of bioinformatics training materials, courses and trainers.
2015 - DOI: 10.1093/bioinformatics/btu601
Corpas M, Jimenez RC, Bongcam-Rudloff E, Budd A, Brazas MD, Fernandes PL, Gaeta B, van Gelder C, Korpelainen E, Lewitter F, McGrath A, MacLean D, Palagi PM, Rother K, Taylor J, Via A, Watson M, Schneider MV, Attwood TK.

A quick guide to genomics and bioinformatics training for clinical and public audiences.
2014 - DOI: 10.1371/journal.pcbi.1003510
Brazas MD, Lewitter F, Schneider MV, van Gelder CW, Palagi PM.

Best practices in bioinformatics training for life scientists.
2013 - DOI: 10.1093/bib/bbt043
Via A, Blicher T, Bongcam-Rudloff E, Brazas MD, Brooksbank C, Budd A, De Las Rivas J, Dreyer J, Fernandes PL, van Gelder C, Jacob J, Jimenez RC, Loveland J, Moran F, Mulder N, Nyrönen T, Rother K, Schneider MV, Attwood TK.

iAnn: an event sharing platform for the life sciences.
2013 - DOI: 10.1093/bioinformatics/btt306
Jimenez RC, Albar JP, Bhak J, Blatter MC, Blicher T, Brazas MD, Brooksbank C, Budd A, De Las Rivas J, Dreyer J, van Driel MA, Dunn MJ, Fernandes PL, van Gelder CW, Hermjakob H, Ioannidis V, Judge DP, Kahlem P, Korpelainen E, Kraus HJ, Loveland J, Mayer C, McDowall J, Moran F, Mulder N, Nyrönen T, Rother K, Salazar GA, Schneider R, Via A, Villaveces JM, Yu P, Schneider MV, Attwood TK, Corpas M.

Navigating the changing learning landscape: perspective from bioinformatics.ca.
2013 - DOI: 10.1093/bib/bbt016
Brazas MD, Ouellette BF.

A decade of Web Server updates at the Bioinformatics Links Directory: 2003-2012.
2013 - DOI: 10.1093/bib/bbt022



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GOBLET: *a repository*

Bioinformatics Advance Access published September 4, 2014

Application Note

The GOBLET Training Portal: A Global Repository of Bioinformatics Training Materials, Courses and Trainers

Manuel Corpas^{1*†}, Rafael C. Jimenez^{2†}, Erik Bongcam-Rudloff³, Aidan Budd⁴, Michelle D. Brazas⁵, Pedro L. Fernandes⁶, Bruno Gaeta⁷, Celia van Gelder⁸, Eija Korpelainen⁹, Fran Lewitter¹⁰, Annette McGrath¹¹, Daniel MacLean¹², Patricia M. Palagi¹³, Kristian Rother¹⁴, Jan Taylor¹⁵, Allegra Via¹⁶, Mick Watson¹⁷, Maria Victoria Schneider¹, Teresa K. Attwood¹⁸

¹The Genome Analysis Centre, Norwich, UK, ²ELIXIR, Wellcome Trust Genome Campus, Hinxton, UK, ³The Swedish University for Agricultural Sciences, Uppsala, Sweden, ⁴European Molecular Biology Laboratory, Heidelberg, Germany, ⁵Ontario Institute for Cancer Research, Toronto, Canada, ⁶Instituto Gulbenkian de Ciência, Oeiras, Portugal, ⁷The University of New South Wales, Sydney, Australia, ⁸Netherlands Bioinformatics Centre and Department of Bioinformatics, Radboud Medical Center, Nijmegen, The Netherlands, ⁹CSC - IT Center for Science Ltd., Espoo, Finland, ¹⁰Whitehead Institute for Biomedical Research, MIT, Cambridge, Mass. US, ¹¹CSIRO, Bioinformatics Core, Canberra, ¹²The Sainsbury Laboratory, Norwich Research Park, Norwich, UK, ¹³SIB Swiss Institute of Bioinformatics, 1 Rue Michel Servet, Genève, Switzerland, ¹⁴Academis, Illstrasse 12, 12161 Berlin, Germany, ¹⁵The Nowgen Centre, 29 Grafton Street, Manchester, UK, ¹⁶Department of Physics, Sapienza University, Rome, Italy, ¹⁷The Roslin Institute, Edinburgh, UK, ¹⁸The University of Manchester, Manchester, UK

Associate Editor: Dr. Jonathan Wren



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TeSS: tess.oerc.ox.ac.uk

- TeSS is a portal/platform for disseminating, discovering & packaging training resources
 - primarily, by aggregating information from ELIXIR Nodes
 - also from various 3rd-party 'content' providers



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Why is TeSS needed?



A coordinating portal, giving an at-a-glance view across the ELIXIR training landscape...



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TeSS: who is involved

- Project initiated as part of ELIXIR-UK
 - next phase to continue as part of EU project EXCELERATE
- Specific partners involved are:

Node	Partner
<i>ELIXIR-UK</i>	<i>UoManchester</i>
<i>ELIXIR-UK</i>	<i>UoOxford</i>
<i>ELIXIR-CH</i>	<i>SIB</i>
<i>ELIXIR-PT</i>	<i>IGC</i>
<i>ELIXIR-NL</i>	<i>DTL/NBIC</i>



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TeSS: what it does

- Some similar features to GOBLET's portal
 - *but important differences...*

Aggregates

- TeSS aggregates training resources
 - *via mostly automatic means*
 - *minimal manual intervention*

Links

- TeSS *links* to training resources from providers
 - *it doesn't store materials*
 - *it isn't a repository*

Combines

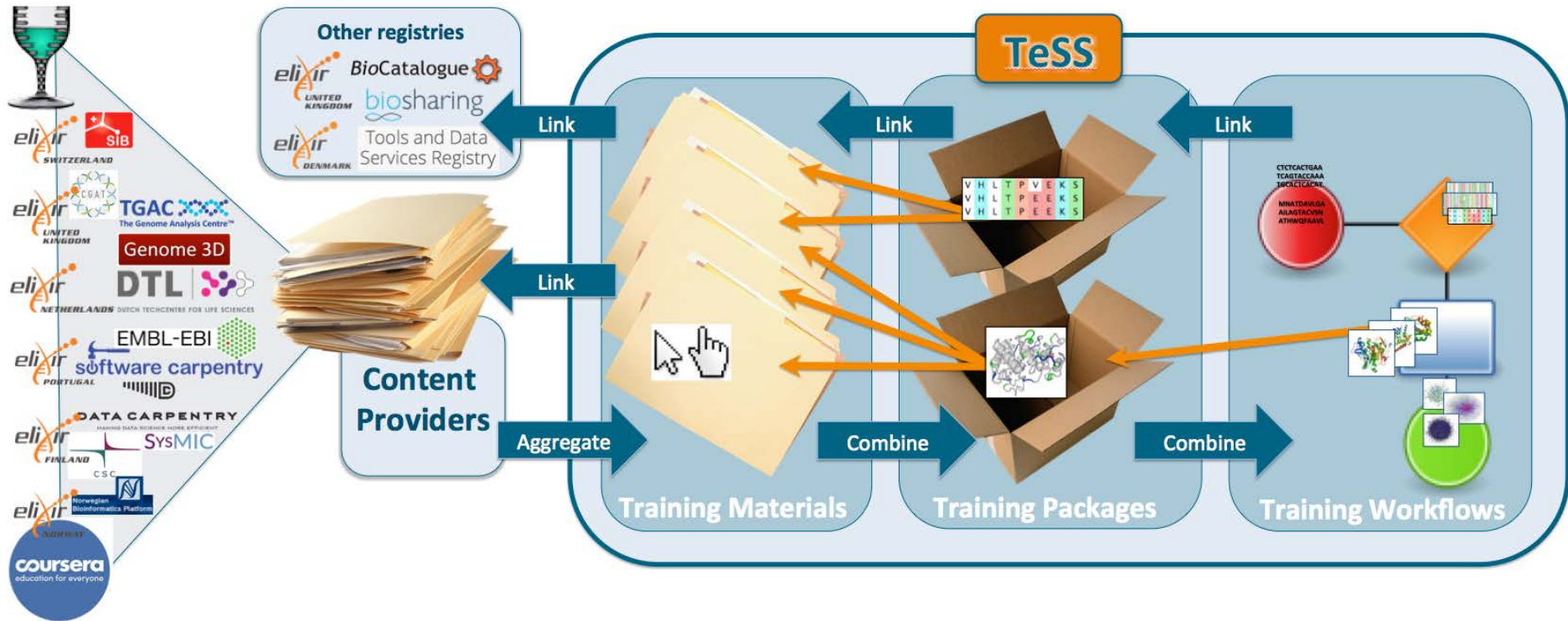
- TeSS combines training resources in bespoke ways
 - *primarily via packages & workflows*



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TeSS: how it works



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TeSS: training portal

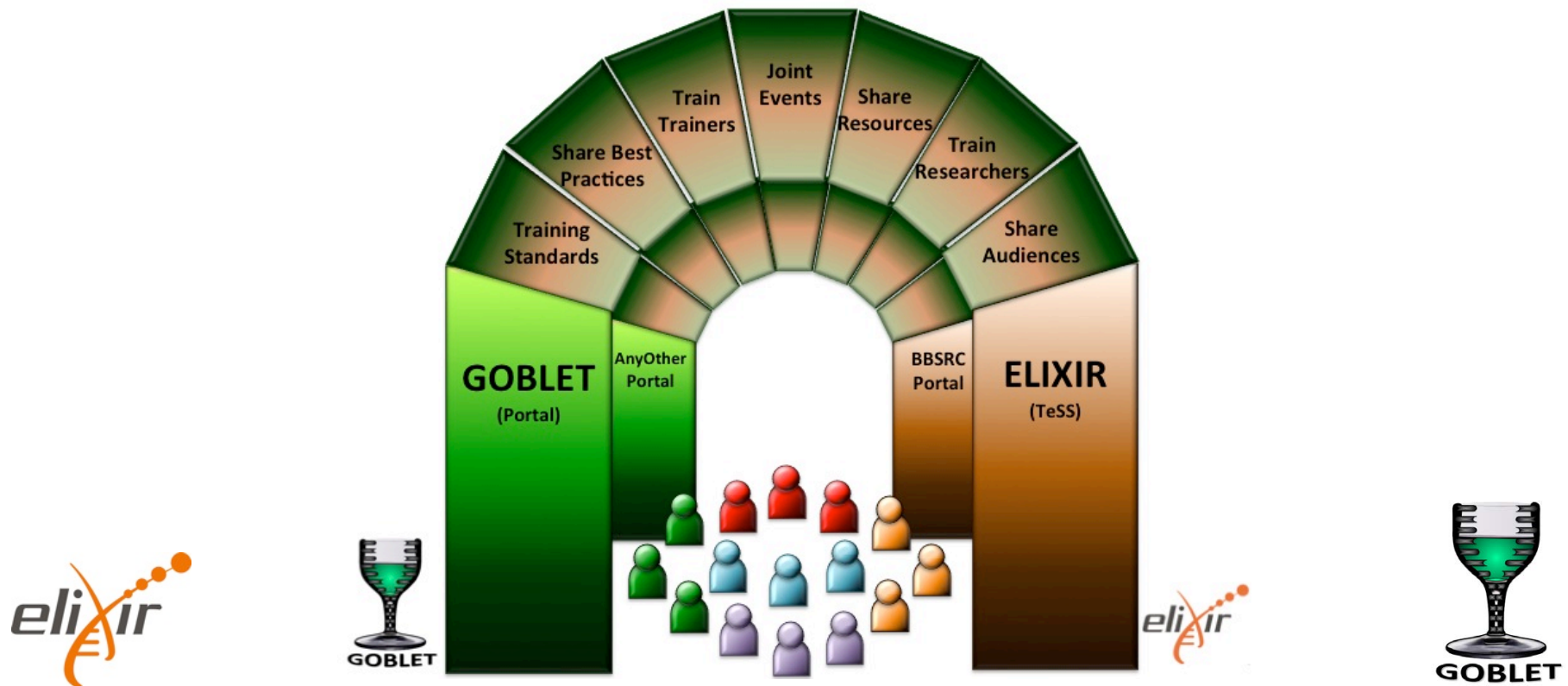


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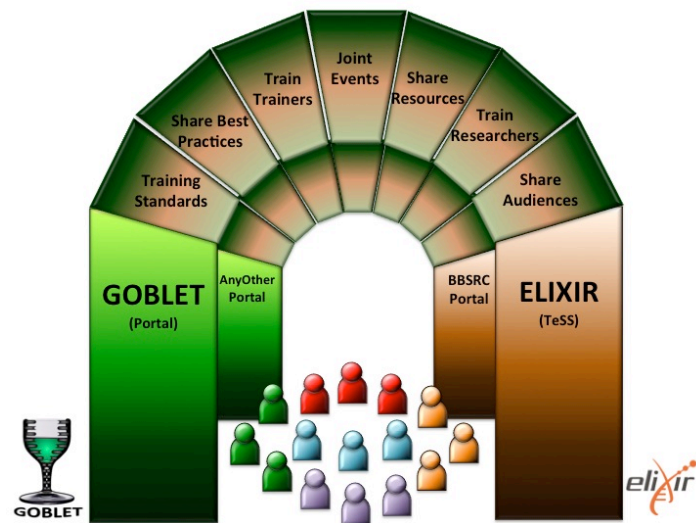
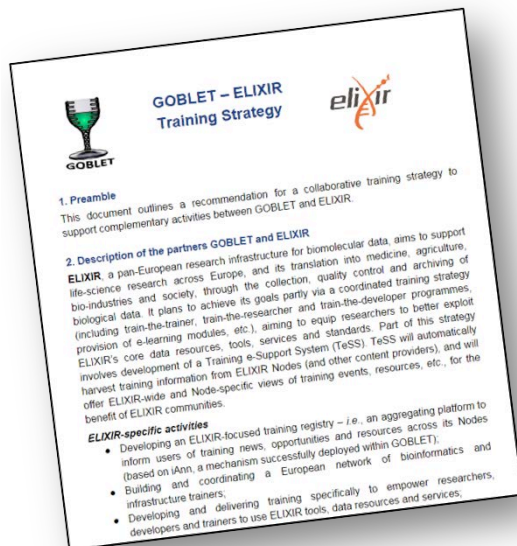
TeSS & GOBLET: training portals

- GOBLET is a *repository* of training resources, TeSS an *aggregator* of training information (metadata)
 - they are closely coupled, complementary & work synergistically



ELIXIR & GOBLET: joint training strategy

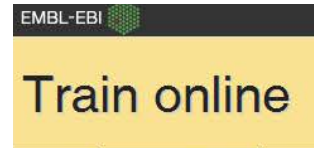
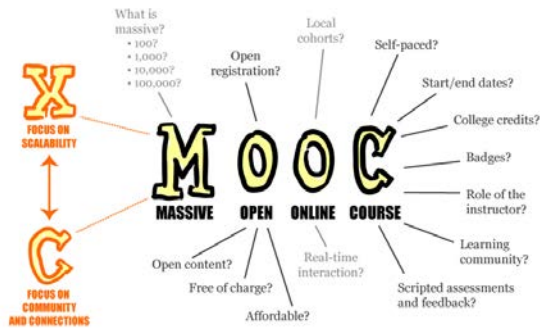
- Published on ELIXIR & GOBLET websites, April 2015, to
 - collaborate in the development of their training portals
 - collaborate on train-the-trainer & train-the-researcher activities
 - jointly explore training 'accreditation' mechanisms
 - share best practices, standards & expertise
- aiming to professionalise bioinformatics training



ELIXIR-GOBLET: e-learning workshop, Slovenia

- First joint workshop held in Ljubljana, September 2015
 - to define an e-learning lingua franca
 - to write a white paper

eBiomics 



EMBER: www.ember.man.ac.uk

- EMBER was an EU project, funded May 2001 to April 2003
 - European Multimedia Bioinformatics Educational Resource
- Aimed to develop a suite of teaching materials for UG & early PG studies
 - a self-contained, Web-based practical + CD-ROM & a text-book!
 - introduction to bioinformatics – protein sequence/structure analysis



EMBER: who was involved

- Members of the EMBER Consortium were:

Country	Partner	
UK	UoManchester	- principal content provider
CH	SIB	
NL	UoNijmegen	
NL	ETI	- principal technical developer
PT	IGC	- principal evaluator
UK	EBI	
ZA	UoWestern Cape	
CA	IMB	
BE	UoBruxelles	- principal evaluator
TR	RIGEB	



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EMBER: the VLE







The screenshot shows a web browser window titled "EMBER: Glossary" with the URL "www.ember.man.ac.uk/glossary.php". The browser's address bar and menu bar are visible. The page content includes the EMBER Consortium logo, the title "A Practical Guide to Bioinformatics", and a navigation menu with items like "NowStuff", "DbBrowser", "Dbs", "Tools", "Itico", "EU/Grants", "GOBLET", "NCBI/ExPaSY", and "Journals/Sox". A "Notepad" icon is also present. The main content area is titled "glossary" and features an alphabetical index (A-Z) in a red bar. Below the index, it instructs users to browse by clicking a letter or entering a search term. A search form contains a "Search:" text input, a "What:" dropdown menu with "Glossary term" selected, and a "Search" button. A left-hand sidebar lists various sections: "Introduction", "Basic tutorial" (with sub-items 1-6), "Advanced tutorial" (with sub-items 7-9), "Case studies" (with sub-items 10-13), "Final assessment" (with sub-items "Final quiz" and "Feedback"), "Appendix" (with sub-items "Glossary", "Contributors", and "Release notes"), and "Log out". The "Glossary" item in the sidebar is highlighted with a red background.



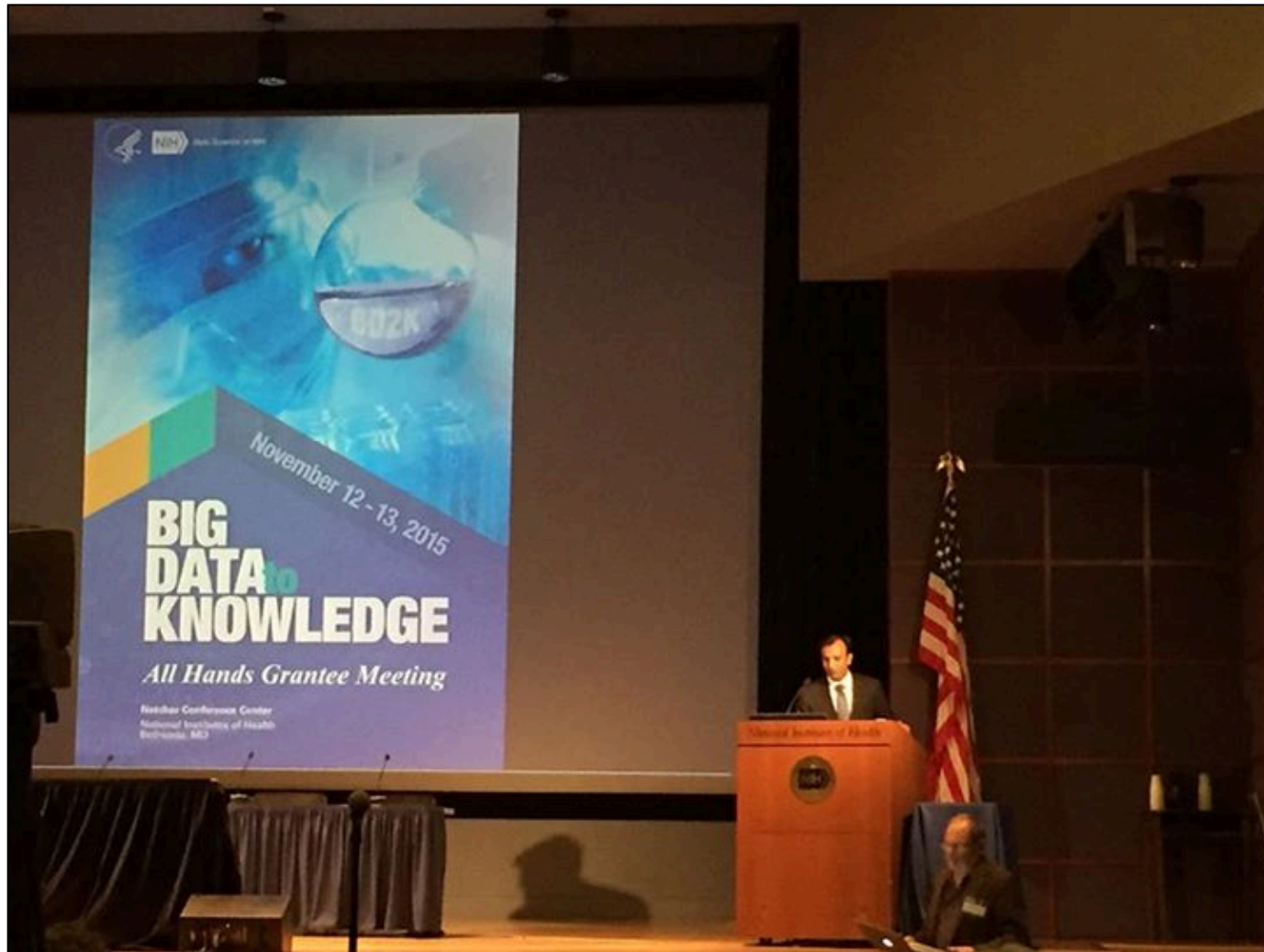
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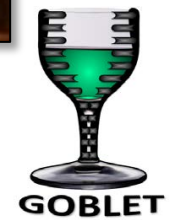
Lastest Courses

<p>16. GWAS Plink</p> 	<p>14. Comparative Genomics</p> 	<p>13. Genome Annotation</p> 
<p>12. Genome Assembly</p> 	<p>11. Mapping Short Reads</p> 	<p>10. Genome Analysis with Artemis</p> 

BD₂K



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BD2K goals

- Improve data **discoverability, accessibility & citability**
- Develop the **methods, software & tools** needed to analyse biomedical Big Data
- Support a **data** ecosystem
- Enhance **training** necessary for biomedical Big Data science



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BD2K Funded programs

- BD2K Centres (12)
- Enhancing Training (22)
 - Resource Development (9)
 - Institutional Training (3)
 - Scientist Training & Career Development (9)
 - Enabling Educational Experiences (1)

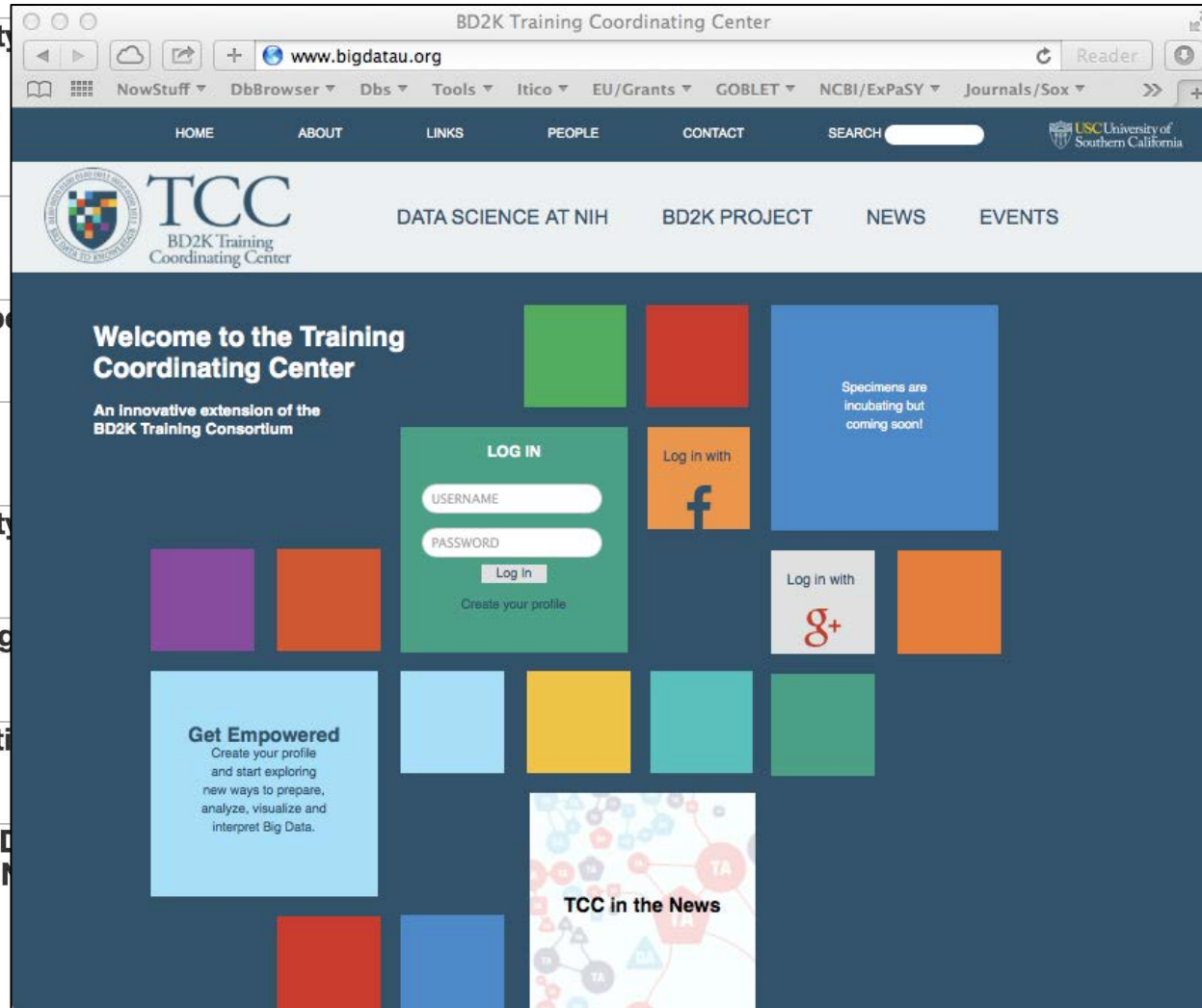


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BD2K Training Coordination Centre (TCC)

- Funding Opportunity
- Activity Code
- Announcement Type
- Related Notices
- Funding Opportunity (FOA) Number
- Companion Funding
- Number of Applications
- Catalog of Federal Domestic Assistance (CFDA) Number



Medical Data

Application Due Date.

88; 93.839; 93.172;
47; 93.279; 93.859;



\$1.4 million/year for 3 years

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TCC goal

Narrow the gap between

availability of
biomedical big data

ability of biomedical
scientists to effectively
utilise such data



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BD2K – ERUDITE/BDU

- Educational resource discovery index
 - a training portal
- Facilitate discovery, access & citation educational resources
- Building on BD2K-funded activities & educational materials
- Update/ingestion
 - both active (curation, crowd-sourcing) & passive (programmatic)
- Based on metadata standards
- Personalisation
 - predictive, adaptive learning



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Fin mot

- GOBLET & TeSS are training portals
 - unlike EMBER, they do not constitute e-learning
- Fully-fledged e-learning resources
 - are expensive to create & hard to do well
 - require the right team, with the right (combination of) skills
 - subject-specific, pedagogical, design, technical
- With this in mind, we should take care to use the term 'e-learning' consistently
 - & think very carefully what we want GOBLET to do under this label
 - & how we want that to fit with what ELIXIR & BD2K want to do...



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Thanks for your dogged attention!



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Royal Society: educational resource for schools



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Discover

Meet

Play

Enlarge text

Discover

Meet

Play

Bioinformatics game

Growth factors game

Malaria game

Foot & mouth game

Into the deep game

G-ball

A taste of bioinformatics

You will need version 5.0 or above of the Flash plugin to view this interactive tool. If you do not already have the plugin, you can download it from the [Macromedia website](#).

Terri Attwood - A taste of bioinformatics



Tutorial

Try it

Instructions

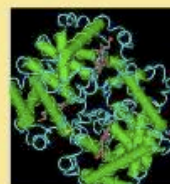
Unravelling the cause of disease

Bioinformatics can extract vital information from genome data for the benefit of medical research. A classic example is a disease called **sickle cell anaemia**.

This is an inheritable condition in which there is a defect in a protein found in red blood cells called haemoglobin. This protein is used to transport oxygen around the body.



sickle cell
normal red blood cell



the three-dimensional structure of haemoglobin

In the "try it" section you will have the opportunity to identify a fragment of DNA that codes for the synthesis of this protein.

Previous

Try it

Select an area

Go

Select an audience

Go

Royal Society: bioinformatics game

Terri Attwood - A taste of bioinformatics



Tutorial

Try It

Instructions

Sickle cell anaemia and blood flow

This subtle difference in the amino acid sequence causes a major problem. The substituted amino acid, valine, creates a hydrophobic patch on the surface of the haemoglobin molecule, causing the molecules to stick together. This distorts the shape of the red blood cells and they clump together.

Normal red blood cells can bend and flex easily as they pass through blood vessels but because of their shape, sickled red blood cells can't squeeze through small blood vessels. This can lead to these small blood vessels getting blocked which then stops the oxygen from getting through to where it is needed. This in turn can lead to severe pain and damage to organs.



Animated for Video by Joseph Wilmhoff

Although the genetic cause of sickle cell disease has been known for half a century, we have not been able to use this knowledge to develop suitable drugs. However with the recent accumulation of genomic information and advances in genetic research, perhaps a future therapy is in sight.

Terri



Terri Attwood, ELIXIR-UK,
University of Manchester
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