

Challenges for modern biology: reproducibility, standards & SOP in bioinformatics

by Domenica D'Elia, Allegra Via, Paolo Romano, Pedro Fernandes, Teresa K. Attwood, Erik Bongcam-Rudloff

Computational reproducibility poses new challenges for scientific replication. Part of the problem is that research papers don't effectively support reproducibility of computational analyses. Companion websites that make data and software shareable may be useful, but are not enough. Frameworks for creating descriptive and interactive publications by linking them with associated objects (*e.g.*, software source code, data-sets and annotations, data pipelines and workflows) are needed.

A prerequisite of modern life-science R&D is high-quality research data. By enabling the reuse of research assets, research becomes considerably more efficient and economical. This can only be achieved reliably and efficiently if these are generated according to standards and Standard-Operating Procedures (SOPs). Thus, standards are important drivers in the life-sciences, because they guarantee that data become accessible, shareable and comparable along the value chain.

To discuss these challenges, the EU COST Action, [CHARME](#) (Harmonising standardisation strategies to increase efficiency & competitiveness of European life-science research), [EMBnet](#) (The Global Bioinformatics Network) and [NETTAB](#) (International Workshop Series on Network Tools & Applications for Biology) are organising a workshop on *Reproducibility, standards & SOP in Bioinformatics*, to be held in Rome (IT), 25-26 October 2016.

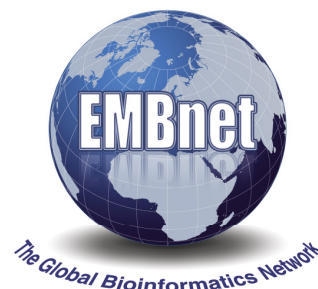
Invited lectures by Chris Evelo, Barend Mons, Susanna Anna Sansone, Jacques van Helden, Reza Salek and Peter McQuilton are planned, alongside oral and poster presentations selected from submitted abstracts.



The abstract [submission deadline](#) is 15 July 2016.

The workshop will be preceded by a GOBLET/ELIXIR-IT tutorial and an ELIXIR hackathon on Monday 24 July. The workshop programme also includes a special session organised by GOBLET/ELIXIR-IT on "*Reproducibility & standards in bioinformatics: challenges for training*". This session includes talks from Patricia Palagi (ELIXIR-CH), Celia van Gelder (ELIXIR-NL) and Eija Korpelainen (ELIXIR-FI), and concludes with a panel discussion chaired by Erik Bongcam-Rudloff.

These events, hosted by ELIXIR-IT, will be held at the Italian [CNR](#) (National Research Council) headquarters in Rome. For further information, please visit the workshop [website](#) or contact us directly at: nettab.workshops@gmail.com.



GOBLET makes a splash at ISMB 2016

by T. K. Attwood

As you probably all know, ISMB (Intelligent Systems for Molecular Biology) is the [ISCB](#) (International Society for Computational Biology)'s annual international conference. During its 23 years of existence, despite its name, it has become the largest computational biology and bioinformatics meeting in the world.

[ISMB 2016](#) was held at the [Swan and Dolphin Hotel](#) complex in Orlando, Florida (USA), from 8-12 July. For some, the Disney World location provided an opportunity to explore 'Disney's Magical Kingdom'. For others, the meeting offered a chance to participate in a mystical array of Satellite and Special Interest Group Meetings, Applied Knowledge Exchange Sessions, Community of Special Interest and Committee Meetings, alongside the full conference itself, allowing participants both to learn and discover more about cutting-edge research, and the latest algorithm, tool and resource developments.

This year, [GOBLET](#) presented two posters in the Education Track. The Learning, Education and Training Committee reviewed its recent activities, including i) development of a set of minimal, standard descriptors for training materials to ensure FAIR (Findable, Accessible, Interoperable, Reusable)- compliance; ii) development of core competencies, and guidelines on their use; and iii) charting the bioinformatics elearning landscape, to discover existing resources and develop new materials. Meanwhile, the Fund-Raising Committee promoted a new initiative to develop a [Train-the-Trainer programme](#), aiming to increase the provision of bioinformatics training in Next Generation Sequencing.

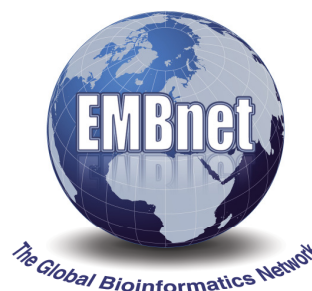
In addition, GOBLET had its own booth in the exhibition hall, to highlight the work of the foundation in general and raise awareness of the forthcoming [AGM in Brisbane](#) (AU), 7-9 November, and to try to stimulate further



GOBLET members supporting the booth at ISMB 2016

community engagement. The booth was supported by members of the Executive and Operational Boards, committee members and local organisers of the next AGM.

The next major opportunity to present GOBLET's achievements and to meet members of the community will be [ECCB 2016](#), the 15th European Conference on Computational Biology, to be held in The Hague (NL), 3-7 September. If you have an interest in training in general, and want to learn more about GOBLET in particular, we hope to see you there!





'Train-the-Trainer' events ELIXIR-IIB Training Programme: an inspiring experience

by **Domenica D'Elia**, CNR-ITB, Italy

"The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires." -William Arthur Ward.



Curiosity and inspiration, an explosive mix of human feelings that can push the world forward. This is what happened to me in June when, for the first time, I attended a bioinformatics 'Train-the-Trainer' (TtT) workshop. It was organised by the [ELIXIR-IIB Training Programme](#) as a half-day satellite event of the [13th Annual Meeting](#) of the Bioinformatics Italian Society in Salerno (IT).

Strongly inspired by Active Learning principles, the workshop was on *"Effective academic teaching: learning principles & didactic strategies that will transform your way of delivering bioinformatics courses"*; the trainers were [Allegra Via](#), ELIXIR-IIB Training Coordinator (TrC) and [Vincenza Colonna](#), ELIXIR-IIB Deputy TrC. Pedro Fernandes, ELIXIR-PT TrC and Head of the EMBnet SIG for E&T, closed the workshop with an invited talk on *"Current needs in Europe for bioinformatics professionals"*.

In my long experience as a biologist and a researcher, I have had many opportunities to teach. I love to teach because teaching is an important experience for personal and

professional growth, and I thought I was a good teacher; but curiosity to understand what the TtT programme comprises, and what new teaching concepts and techniques it reveals, made me anticipate my travel to Salerno with excitement: I wanted to know and learn! My experience can be summarised in a few important words: surprise, fascination and inspiration. So great was the enthusiasm of the trainers, and so professional their training ability, that even the most skeptical attendants were captivated. Most importantly, I was so involved and convinced of its importance that I have embraced it as a personal mission.

Allegra, Vincenza and I now work together to disseminate the ELIXIR-IIB training programme – which includes ELIXIR [TtT workshops](#) in collaboration with GOBLET – across the world. I hope my experience can also stimulate your curiosity – we'd be happy to have you on board!

Contacts: [ELIXIR IIB website](#)
Upcoming event: [GOBLET/ELIXIR-IIB "TtT" Tutorial, 24 October 2016, Rome \(IT\)](#)



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