



GOBLET

Global Organisation for Bioinformatics Learning, Education & Training

TRAIN-THE-TRAINER INITIATIVE



GOBLET

Global Organisation for Bioinformatics Learning, Education & Training

GOBLET Train-the-Trainer Initiative

GOBLET is a global organisation that coordinates, shares and supports bioinformatics training activities worldwide, aiming to plug critical skills gaps, ultimately to facilitate the advancement of health- and life-science research.

The focus of the Train-the-Trainer initiative is on setting up effective training courses to help plug known skills gaps, especially in the area of Next Generation Sequencing (NGS) data analysis. To this end, *GOBLET seeks funding and support for its Train-the-Trainer programme, aiming to increase the provision of bioinformatics training in the area of NGS.*

This programme will help to:

- share bioinformatics training expertise, experience and resources;
- train bioinformatics and life-science specialists;
- support life-science research;
- promote collaborations among scientists worldwide;
- build capacity in developing and developed countries.

Bioinformatics & Next-Generation Sequencing

Bioinformatics concerns, amongst other things, the quest to extract knowledge from biological data using tailored algorithms. A highly interdisciplinary field, encompassing the development of methods to store, retrieve, analyse and share heterogeneous data-sets, bioinformatics draws on techniques and concepts from, for example, informatics, statistics, biology, chemistry, physics and linguistics; its outputs include algorithms, software, databases and services, which now play crucial roles in the biomedical sciences: e.g., in

- the development of personalised medicine and drug-discovery pipelines;
- enabling accurate prognosis and diagnosis;
- tracing the origin and lineage of pathogenic microorganisms; and
- understanding plant growth in extreme environments in the context of food security.

Recent developments in NGS technology have reduced the costs of genome sequencing; NGS has consequently become one of the most heavily exploited techniques in modern biology. Millions of genomic sequences are generated daily, shifting the challenge from data production to data analysis. For many wet-lab scientists, the analysis of such large amounts of data presents a major bottleneck that can only be overcome through specialised training in advanced data-analysis methodologies and use of dedicated bioinformatics software tools.

The need for a Train-the-Trainer programme

The need for tailored training in NGS data-analysis, spanning diverse audiences worldwide, has outpaced the deployment of suitable education programmes, and is now acute. Various courses are available, particularly in Europe and North America, but the numbers are not sufficient to cope with demand, especially in Africa, Asia, Australia and South America. Therefore, increasing the pool of skilled trainers able to deliver high-quality courses in NGS data analysis is crucial. Tackling this training demand and providing sustainable training is hence the aim of the Train-the-Trainer programme.

Programme details

Programme: The programme will include a minimum of 3 workshops per year. Each workshop is organised around topics on NGS data analysis and on defining excellent training, and will be customised according to the needs of local audiences. Examples of topics are:

1. **How to exploit NGS data:** theory and practice of current NGS technologies and data, data analysis steps, bioinformatics resources and tools;

GOBLET Foundation p/a CMBI Radboud University Nijmegen Medical Centre, Geert Grooteplein 26-28,
6581 GB Nijmegen, The Netherlands, KvK-number: 56538901

Phone: +31 (0)24 3619390 Fax: +31 (0)24 3619395 E-mail: info@mygoblet.org



GOBLET

Global Organisation for Bioinformatics Learning, Education & Training

2. **How to set up and deliver excellent training courses:** defining learning objectives; defining prerequisites, level and course descriptions; selecting participants; adapting content to trainees' actual needs; designing and preparing training materials and supporting data.

Venues: Train-the-Trainer workshops will take place on different continents (e.g., South America, Australia, Asia, Africa), and may take place alongside ECCB or regional ISCB conferences, to benefit from the respective local organisation, increase participation, and minimise travel expenses and environmental impact.

Trainers: members of GOBLET are experts in the field, experienced in bioinformatics and NGS training; they will teach on a volunteer basis.

Participants: participants will apply for the workshops. Twenty-five will be selected; the top 5 will receive bursaries. Selection criteria will include specific knowledge in NGS, expertise, gender balance, institution and country of origin, etc. Participants will commit to replicate the workshop at least once in the following 12 months, driving an exponential effect.

Programme costs

The average cost for one block workshop is €12,000, summarised as follows:

- Travel and accommodation for 4 trainers = €8,000
 - Travel bursaries for 5 participants: = €2,500
 - Local logistics (meals, costs of transfers, venue etc): = €1,500
- Grand Total per workshop = €12,000**

Hosting institutes will seek local funding, defraying some of the overall expenses.

Funding and supporting the programme

Sponsors and partners may support the Train-the-Trainer program by:

- 1) funding one or more workshops, or
- 2) donating a sum that will contribute to a workshop, or
- 3) collaborating with GOBLET to customise the programme to your organisation's needs, or
- 4) collaborating with GOBLET to improve the programme to meet global needs.

Funding and support are currently being sought from NGOs, private companies, foundations, private donors, international medical research centres and medical associations.

Benefits to sponsors and partners

Thanks to GOBLET's unique worldwide position in the bioinformatics arena, sponsors will benefit from wide visibility within the life-science community, and help to improve life-science research in general and in their own organisation in particular. Our sponsors and partners will enjoy a close collaborative relationship with GOBLET, allowing them to:

- profit from preferred conditions afforded by GOBLET's corporate membership scheme for one year;
- marketing opportunities (including visibility of sponsor's logo on GOBLET's website, distribution of publicity material during the workshops and AGM, etc.).

Benefits to the life-science community

The multiplier effect of training new trainers will both help to build capacity in countries with known skills gaps, and empower researchers in these countries to produce better scientific results more efficiently.



GOBLET

Global Organisation for Bioinformatics Learning, Education & Training

More about GOBLET

GOBLET's core mission is to provide a global, sustainable support and networking infrastructure for bioinformatics trainers and trainees (Attwood *et al.*, 2015). The foundation's work includes i) facilitating bioinformatics capacity development across the globe, particularly through its train-the-trainer and train-the-teacher initiatives, ii) developing best-practice standards and guidelines for bioinformatics training (Via *et al.*, 2013); iii) developing high-quality, branded courses and materials, and iv) fostering the international community of bioinformatics/computational biology trainers through networking events. As the experience and expertise of its network grows, GOBLET is emerging as *the* professional body for bioinformatics training.

GOBLET's recent activities include:

- developing a training platform, including a repository of training materials, a registry of trainers and course organisers, and a portal to inform users of training news, events and resources across continents (Corpas *et al.*, 2013);
- building and coordinating an active, expert global network of bioinformatics trainers and course organisers, reaching organisations across continents, including those in developing countries;
- exploring trainer recognition and course accreditation mechanisms;
- running training events alongside its AGM and as part of the ISMB/ECCB and other relevant conferences;
- publishing the output of its workshops in peer-reviewed journals;
- co-Chairing the ISCB Computational Biology Education COSI.

Contact information

For more information on this project, please contact:

Patricia Palagi, GOBLET - Chair Fund-raising Committee

patricia.palagi@sib.swiss or frc@mygoblet.org

References

Attwood *et al.* (2015) GOBLET: the Global Organisation for Bioinformatics Learning, Education and Training. *PLoS Comput Biol.*, **11**(4), e1004143.

Corpas *et al.* (2015) The GOBLET training portal. *Bioinformatics*, **31**(1), 140-2.

Via *et al.* (2013) Best practices in bioinformatics training for life scientists. *Brief Bioinform.*, **14**(5), 528-37.