

JULY 2014

Newsletter



FOREWORD

ERASynBio is slowly coming to an end, but ideas on future collaboration and continuation are flourishing. We have been working hard and the results are here. Our Strategic Vision: *Next steps for European Synthetic Biology* is published, the projects funded under the 1st call are starting, the evaluation of project proposals submitted to the 2nd ERASynBio call is under way and the second summer school is around the corner.

We are grateful to the community for all the input that you provide in our common quest of promoting the development of synthetic biology in Europe and beyond and are delighted to see our network growing on a daily basis - the number of subscribers to our NL is hitting 400!

The current issue offers you quite a lot of material to explore while sitting in the shade, bathing in the sun or enjoying the fresh mountain air. As always, click on the [links](#), as they provide a lot of extra information and of course enjoy the read.

On behalf of ERASynBio we wish you a nice and relaxing summer!

Kim Turk

Annette Kremser



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Ministry of Education, Science and Sport - MIZS
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DEVELOPMENT AND COORDINATION OF SYNTHETIC BIOLOGY IN THE EUROPEAN RESEARCH AREA

ERASynBio aims at promoting the development of synthetic biology by structuring and coordinating national efforts and investment, with the final goal of creating a sound European research community in the field avoiding national fragmentation from the very start.

MAIN ACTIVITIES

- Supporting the emergence of national synthetic biology programs based on a strategic research agenda
- Transnational funding activities via joint calls (2 joint calls)
- Strengthening the scientific community by offering training and educational possibilities
- Developing recommendations on governance concepts and regulatory models by integrating ethical, legal, societal and technical aspects of synthetic biology
- Promoting close cooperation between academia and industry
- Providing extensive dialogue options and exchange fora in which all stakeholders can participate

DURATION

36 months (1.1.2012 – 1.1.2015)

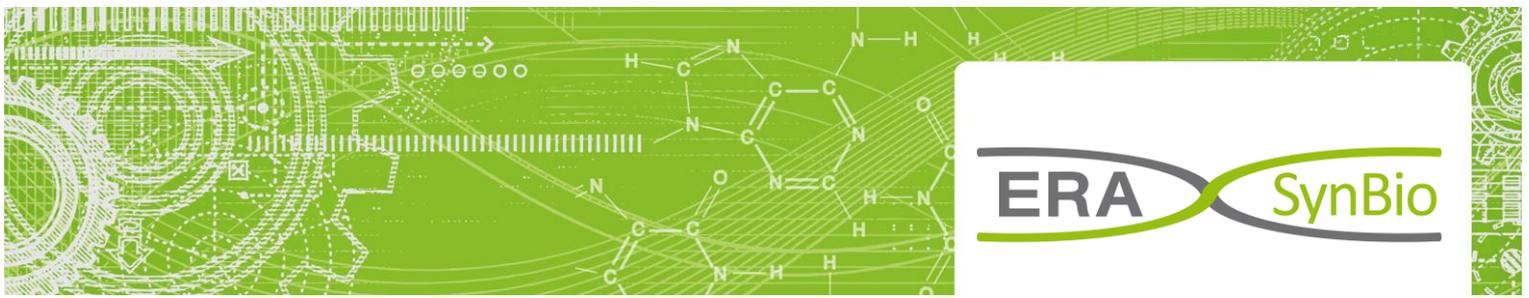
EC FUNDING

1.997.022 Euros

PARTNERS

16 from 14 European countries





ERASynBio IN ACTION

DEVELOPMENTS SO FAR

- Second call closed, proposals under evaluation
- Position Paper & Recommendations on Intellectual Property Regulation in Synthetic Biology prepared
- The ERASynBio Strategic Vision published
- The Second ERASynBio Center's Workshop organized in Évry, France on 11 July
- Application process for the Second ERASynBio Summer school taking place in Norwich, 14-20 September in collaboration with Open Plant closed
- Self-sustaining network beyond ERASynBio being established

A look into the statistics of the 1st call

by Annette Kremser, PTJ Juelich

The 1st joint call for proposals of ERASynBio was launched in May 2013 under the ERA-NET Scheme of the Seventh Framework Programme (FP7) of the European Commission. The call for proposals resulted in 55 proposals.

After the assessment of an international Expert Evaluation Panel, the ERASynBio Call Group selected **8 projects for funding**. The total amount of requested public funding is more than 13 M EUR.

In total, the proposals included 307 different partner organizations: research organizations (279), SMEs (12), large companies (3).

The projects covered all scientific (sub) fields of the call. Most projects are focusing on research issues related to Metabolic engineering (33), followed by Orthogonal biosystems (14), Bionanoscience (12), Regulatory circuits (10), Minimal genomes (7) and Protocells (4). Most proposals indicated that their research is connected to more than one of the listed (sub) fields.

The proposals selected for funding involve partners from 9 different countries (Austria, Denmark, Finland, France, Germany, Switzerland, Slovenia, UK, US). The coordinators of the projects come from five countries (Germany, Switzerland, Slovenia, UK, US). A majority of funded projects asked for a budget between 1 M and 2 M € having an average number of 4 participants in the project.

ERASYNBIO'S DEFINITION OF SYNTHETIC BIOLOGY

Synthetic Biology is the engineering of biology: the deliberate (re)design and construction of novel biological and biologically based parts, devices and systems to perform new functions for useful purposes, that draws on principles elucidated from biology and engineering.

ERASYNBIO KICK-OFF WORKSHOP

November 19-20, Brussels

AIM: establishment of links between different consortiums funded under the FP7 in synthetic biology with the project consortiums funded in the frame of the 1st ERASynBio joint call.

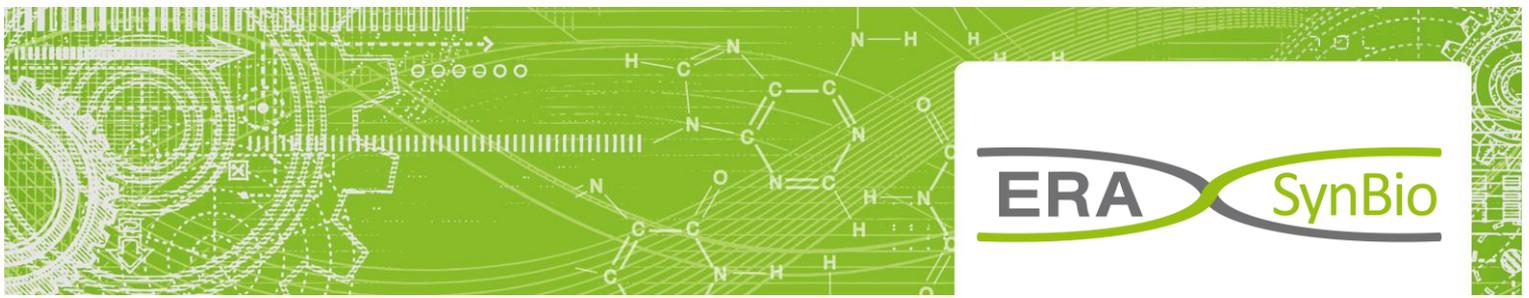
FORMAT: Interactive workshop with sessions on different project aspects, including the multidisciplinary of consortiums and project scope, ethical aspects, biological material available, development of standards, support of registries and IPR, available infrastructures, training activities and data management

Attendance is by invitation only, but we will report on the outcomes in our next NL.

A sneak peek into the statistics of the 2nd call

- 48 proposals received
- 234 partners from 16 countries
- call results to be announced by the end of 2014





ERASYNBIO KICK-OFF WORKSHOP November 19-20, Brussels

AIM: establishment of links between different consortiums funded under the FP7 in synthetic biology with the project consortiums funded in the frame of the 1st ERASynBio joint call.

FORMAT: Interactive workshop with sessions on different project aspects, including the multidisciplinary nature of consortiums and project scope, responsible research, biological material available, development of standards, support of registries and IPR, data management available infrastructures, training activities.

Strategic vision for European synthetic biology published by ERASynBio

by Andy Boyce, BBSRC



ERASynBio is pleased to announce its strategic vision for European synthetic biology. This strategic vision represents the culmination of ERASynBio's strategic activities. It sets out an ambitious vision for the future of European synthetic biology, highlighting major opportunities and challenges over the next five to ten years.

The vision contains a series of targeted recommendations designed to empower national and international funding agencies, policy bodies and other stakeholders with the strategic framework

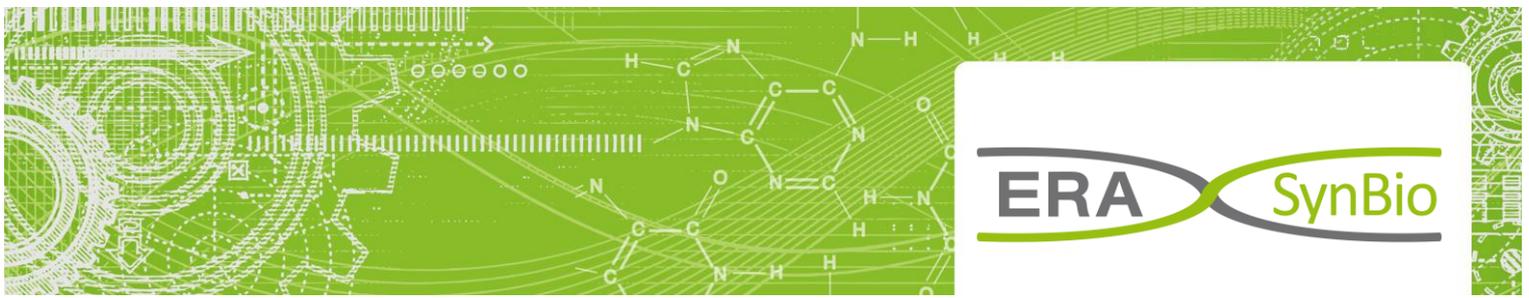
to support this important research field. It will inform the development of future funding and policy activities from ERASynBio partner organizations as well as future international coordination activities.

This jointly developed document describes ERASynBio's vision for the role of world-leading and innovative European synthetic biology research in driving economic impact and addressing grand societal challenges. Furthermore, it describes the major enablers for this vision, namely networked, multidisciplinary and agile centers of excellence; a skilled, creative and interconnected workforce; cutting-edge and open underpinning technology; and a responsible and inclusive policy framework.

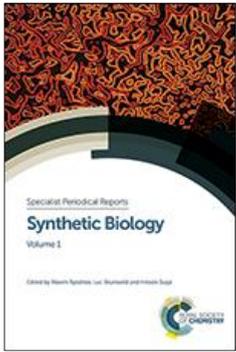
The full vision is available [here](#).

For any questions on the vision, please contact [Dr Andy Boyce](#).





SUMMER READS

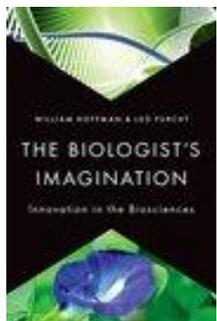


The Royal Society of Chemistry would like to invite the ERASynBio community to check out one of their key new titles: [Synthetic Biology – Volume 1](#).

The series editors Maxim Ryadnov, Luc Brunsveld and Hiroaki Suga are active in the field of synthetic biology, ensuring that the most valuable information is presented in an authoritative manner.

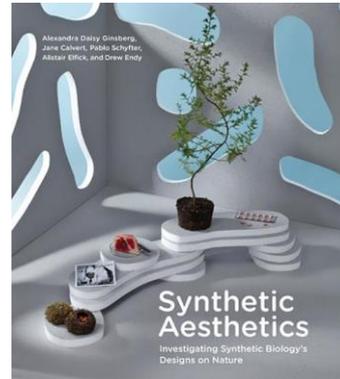
This 359 page Specialist Periodical Report presents critical and comprehensive reviews of the recent literature in themed chapters prepared by invited authors from across the globe.

The book content can be found [here](#). Separate chapters may be bought.



William Hoffman and Leo Frucht explore the history and current state of innovation in the biosciences including genomics, systems and synthetic biology, and the globalization of research and workforce skills in their recently published book [The Biologist's Imagination](#).

Many of the topics covered in the book are also touched upon in Hoffman's article *The Shifting Currents of Bioscience Innovation* published in Global Policy (available [here](#)).

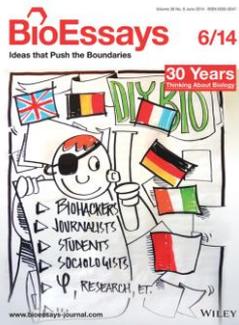


Synthetic biology manipulates the stuff of life. For synthetic biologists, living matter is programmable material. In search of carbon-neutral fuels, sustainable manufacturing techniques, and innovative drugs,

researchers aim to redesign existing organisms and even construct completely novel biological entities. Some synthetic biologists see themselves as designers, inventing new products and applications. But if biology is viewed as a malleable, engineerable, designable medium, what is the role of design and how will its values apply?

[Synthetic Aesthetics: Investigating Synthetic Biology's Designs on Nature](#) by Alexandra Daisy Ginsberg, Jane Calvert, Pablo Schyfter, and Alistair Elfick explores synthetic biology and design through case studies that include biological computers that calculate form; speculative packaging that builds its own contents; algae that feeds on circuit boards; and a sampling of human cheeses.

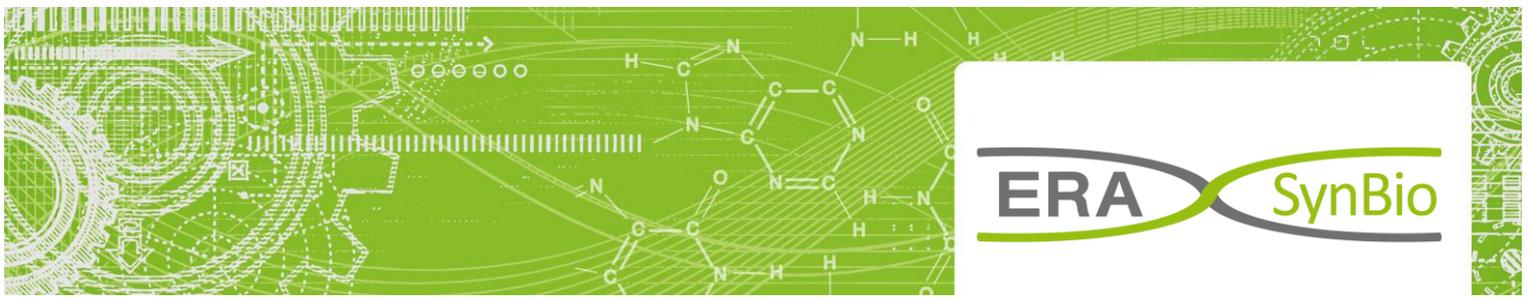
To learn more about the book, the synthetic Aesthetics experimental, international research project and the team behind it, click [here](#).



The rise of amateur biologists in Europe: [European Do-it-yourself \(DIY\) Biology: beyond the hope, hype and horror](#). BioEssays. Vol. 36(6): 548-551

Biotechnology is no longer the unique realm of traditional venues such as university or industry labs. In recent years a growing number of Do-it-yourself Biology (DIY-Bio) groups established themselves in Europe. In the June 2014 Bioessays issue, Seyfried G, Pei L, Schmidt M analyze the DIYBio community in Europe and provide an insight into the structure, challenges and aspirations of amateur biologist. In contrast to the hope (next generation of entrepreneurs), hype (regarding their technical skills), or horror (safety and security risks) usually ascribed to DIYBio, the authors reveal a realistic assessment of a small dedicated core group of semi-professionals trying to establish an open access version of biotechnology.





Public consultation on the First Preliminary Opinion on Synthetic Biology – Definition

The European Commission launched a public consultation on the [First Preliminary Opinion on Synthetic Biology – Definition](#) in June 2014 with the aim to establish what Synthetic Biology is, what its relationship to the genetic modification of organisms is and what the essential requirements of a science-based, operational definition of “Synthetic Biology” are. The preliminary opinion was open to comments until July 21 seeking for feedback from the scientific community and stakeholders. Submitted comments will be published on the [Scientific Committees’ website](#).

IF YOU PREFER MOVING PICTURES

New film introduces you to synthetic biology and the people behind it in Europe

What exactly are synthetic biologists doing? And who are the people behind the technology planning to design and engineer living material?

The 30 minutes film takes you on a journey around Europe showing current developments in this field, portraying five outstanding projects – funded by the European Science Foundation – and the scientists that drive them.

The film was produced by Biofaction with financial support from the European Science Foundation.

Watch the film [online](#).

REMINDER: submit your own short film on synthetic biology for the 2nd Bio-fiction Science Art and Film Festival



When: 23.-25.10.2014

Where: Vienna, Museum of Natural History

What: The Bio-fiction festival explores the emerging field of synthetic biology from different disciplinary angles including science and engineering, social science, cultural studies, amateur biology, film makers, artists and designers through presentations, panel discussions, do-it-yourself biology demos, performances, art work and film screenings. Short films on different aspects of synthetic biology, including documentary films, animation, (science) fiction, will be shown.

Be a filmmaker yourself: You can still enter the short film competition with a 6000 EUR award fund

Prolonged deadline: 31.8.2014

XB1

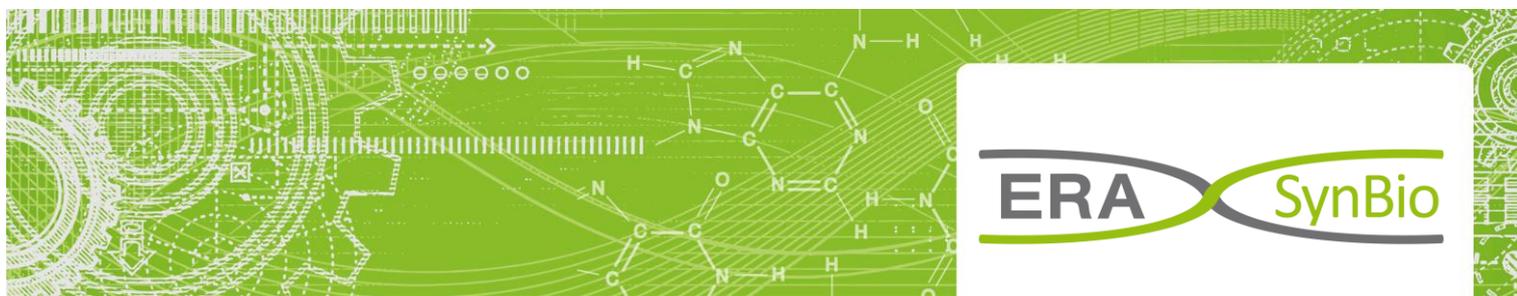
The First Conference
On Xenobiology

Have a peek into the [XB1 conference](#) that took place in Genoa, 6-8 May 2014 and gathered scientists, engineers, designers, policy makers and other stakeholders to chart the paths toward an entirely novel biodiversity.

Xenobiology is an emerging field in the context of synthetic biology, encompassing the design, generation and evolution of alternative forms of life that endeavors to overcome the constraints imposed on natural living organisms by evolution.

With the goal to assess how alternative life should be designed to reserve human health and the environment, seasons were devoted to planning experimental tasks for diversifying nucleic acid propagation, reprogramming proteins, expanding metabolism and assembling ecosystems de novo.





JOIN THE COMMUNITY ...



ESF-EMBO Synthetic Biology of antibiotic production II conference, 30 August - 4 September, Sant Feliú de Guixols, Spain

The symposium will focus on the advancement of synthetic biology, especially its application in the field of antibiotic production in filamentous fungi and actinomycete bacteria, including the implementation and modification of complex biosynthesis pathway modules in existing and new production hosts. It builds on the success of the 1st ESF-EMBO symposium on the Synthetic Biology of Antibiotic Production in autumn 2011 (meeting report: Takano et al., Mol. Micro. 2012), which brought together a highly interdisciplinary community and sparked many new collaborative research efforts.

The second conference will explore the significant progress that has been achieved in the intervening 3 years, in synthetic biology as applied in the field of antibiotic production, including the implementation and modification of complex biosynthesis pathway modules, orthologous regulatory circuitry development, new production host development, and awakening sleeping clusters by use of synthetic biology.

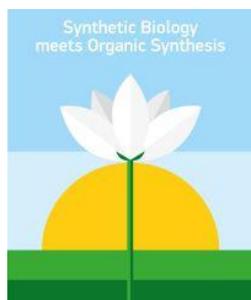
ERASynBio is supporting the participation of young researchers in the conference.

The Synthetic Biology congress, 20-21 October, London UK



Focusing on cutting-edge research, strategies and solutions to keep you up-to-date with the latest advances, investment opportunities, novel methods & applications of synthetic biology in the healthcare & agriculture Sectors, this all-encompassing meeting features over **40 speakers** at the forefront of research being conducted in industry and academia.

For further information and registration visit the [Synthetic Biology Congress webpage](#).



Cross-disciplinary conference
Berkeley, 10-12 Nov. 2014

Optimal Production of High Value Compounds – Dialogue between Fields for more Efficient Output Conference, 10-12 November 2014, Berkeley, US

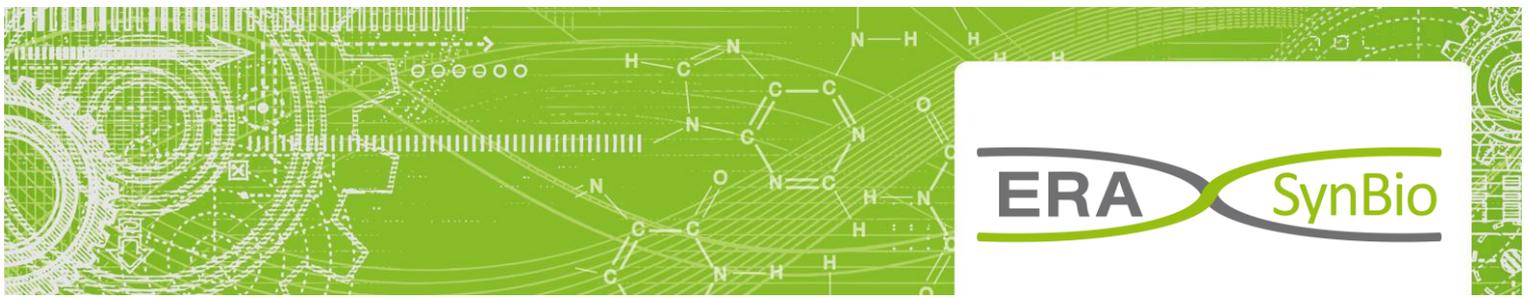
Until now organic synthesis and synthetic biology have been parallel disciplines that compete in many aspects but rarely interact. However, there is great potential in combining the two fields with an overall aim of a more holistic approach and a more efficient output of high-value compound. The conference seeks to explore a new multileveled approach to speed up knowledge development and enter the fast track to optimal, large-scale and market-relevant production of high value compounds.

Read more on the [focus of the conference](#), see the [tentative program](#), look into [individual session descriptions](#) and check out who the [confirmed speakers](#) are.

Register [here](#). Participation fee on 10 November only: 97 EUR, fee for all three days: 241 EUR including food/drinks.

The conference is supported by funding through the Danish Council for Strategic Research, Citris, and Innovation Centre Denmark.





EXPAND YOUR KNOWLEDGE



Synthetic Biology in Photosynthetic Organisms, a PhD Summer School in Synthetic Biology

Host: University of Copenhagen, Copenhagen Plant Science Centre (CPSC)

When: 11-15 August 2014

Goal: The Summer School will cover basic biology and engineering of photosynthetic organisms, covering chloroplasts and nuclear genomes and photosynthetic diversity as well as issues that photosynthetic bio-manufacturing will need to address in the future. It will also cover the current status of synthetic biology in cyanobacteria, algae and plants to date and future prospects. Real examples from commercialization of algae bio-products will be given.

Course fee: 1500 DKK

Registration: To sign up please email [Poul Erik Jensen](mailto:Poul.Erik.Jensen@cpsc.ku.dk)

For more information please download the [flyer](#) and see the [course homepage](#).

Apply for the International Autumn School on Synthetic Biology!



The Autumn School [Biology feat. Engineering 2014](#) is a joint project of six participating institutions and is organized by the LOEWE Center for Synthetic Microbiology (SYNMIKRO) and the Helmholtz Initiative on Synthetic Biology. It is applicable for students

at the end of their studies of natural sciences (MSc), PhD students and Postdocs who will gain access to the new area of Synthetic Biology.

Workshops, lectures and seminars with invited speakers will be held from November 17-27, 2014 in Heidelberg, Jülich and Marburg.

Deadline for [application](#): August 31, 2014

ERASynBio supports iGEM on its 10 year anniversary

ERASynBio continues to support iGEM as a successful international initiative for students interested in the field of synthetic biology, who do a remarkable job in preparing and presenting their projects with more than notable results.

This year, on iGEM's 10th anniversary, there are no regionals and everybody advances to the [Giant Jamboree](#), which will be held in Boston between October 30 and November 30.

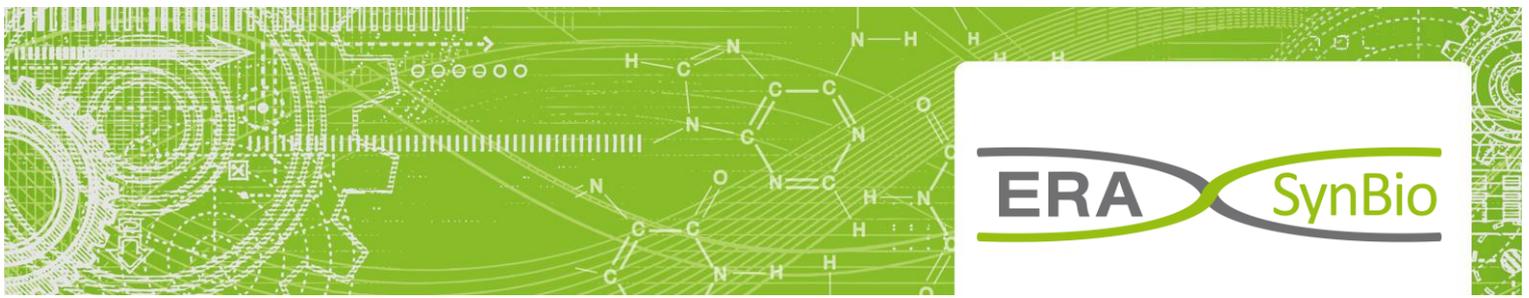
We know the costs of the work, registration and travel are high and that's why ERASynBio will help around 20 teams from ERASynBio partnering countries with registration credit in the amount of 1000 EUR.

47 eligible applications have been received and we are now in the process of selecting the best 20. The decision will be announced shortly.



In addition to the Summer and Autumn school organized by our Danish and German colleagues, OpenPlant and ERASynBio have also joined forces for the Introduction to [Synthetic Biology in plant systems Summer School](#) which will be held 14-20 September in Norwich, UK. The application process is now closed, but stay tuned to www.erasynbio.eu for the program and list of speakers.





MEET THE PARTNERS*

*Click on the partner names to learn more about them

Austria



Denmark



France



Finland



Germany



Greece



The Netherlands



Latvia



Portugal



Norway



Spain



Slovenia



United Kingdom



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For a free subscription to future newsletter from ERASynBio, please visit our website www.erasynbio.net

Comments? Suggestions? Please contact Kim @ kim.turk@gov.si

