EHEDG SUMMER SCHOOL

By GenEHEDG

'Food Safety & Hygienic Design'

Where hygienic design
meets the next generation



BUILDING THE FUTURE OF FOOD SAFETY

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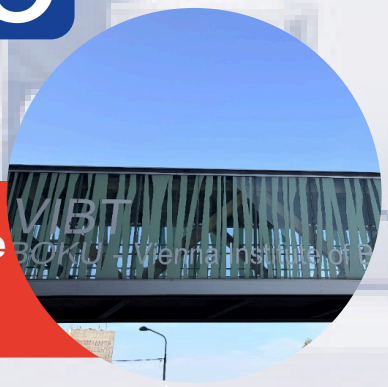

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Why a Summer School

For almost 40 years, EHEDG has advanced hygienic design and engineering through scientific guidance, certification, training and collaboration between industry, academia and regulatory bodies. As the demand for safe, efficient and more sustainable food production continues to grow, so does the need to educate the generation of professionals who will design, operate and improve the food processing systems of the future.

While many engineering and food science educational programmes introduce the principles of food safety, opportunities for students to experience hygienic design in a practical, multidisciplinary setting remain limited.





The **EHEDG Summer School** was established to bridge this gap between academic education and industrial practice, bringing together students, universities and industry experts in an intensive learning environment where theory is transformed into practice. Through lectures, team projects and case studies, participants develop the technical knowledge and critical thinking skills required to tackle real-world hygienic design challenges.



A Vision for the Future

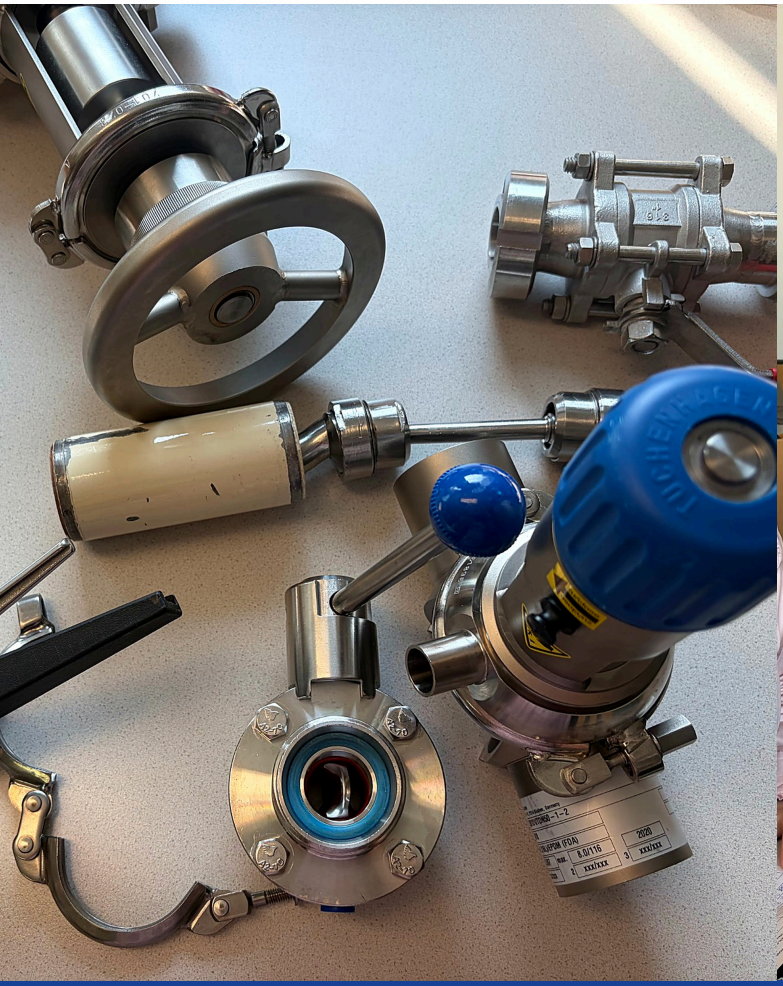
The **pilot edition**, hosted by BOKU University in Vienna on 3-7 August 2026, represents the first step towards establishing an international network of EHEDG Summer Schools.

Our **vision** is to create a programme that can be adopted by universities around the world, while maintaining a shared educational framework grounded in EHEDG's internationally recognised expertise. Each edition will reflect the strengths of its host institution and regional industry, while offering students a consistent, high-quality learning experience that combines academic practical application and international collaboration. By expanding the programme to other universities, EHEDG aims to strengthen global education in hygienic design, foster lasting partnerships between academia and industry, and inspire future professionals to contribute to safer, more sustainable food production systems.

The EHEDG Summer School Blueprint

The EHEDG Summer School follows a modular educational framework that combines scientific knowledge, practical engineering and industry engagement, built around six complementary pillars.

- Foundations
- Learning by doing
- Holistic approach & systems thinking
- Industry integration
- Homework & knowledge consolidation
- Social programme & networking

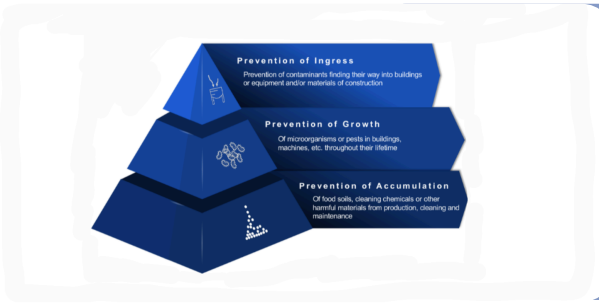




01. Foundations

The programme begins by establishing a common understanding of hygienic design and its essential role in ensuring food safety, product quality and operational efficiency across the food manufacturing sector.

Students are introduced to:



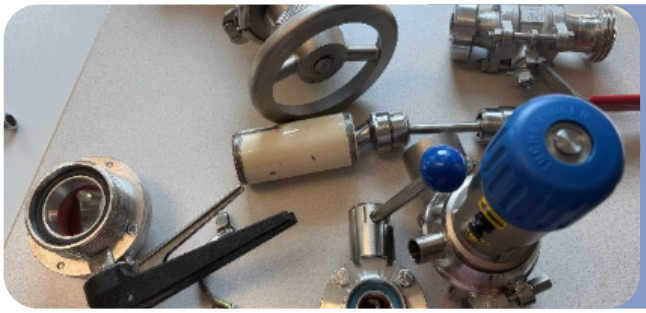
Hygienic Design Principles

The objectives of hygienic design and EHEDG's five core design principles, translated into practical criteria for equipment and food factory solutions

Food Safety and Contamination Control

Food safety hazards and contamination routes that can be prevented or mitigated through effective hygienic processing



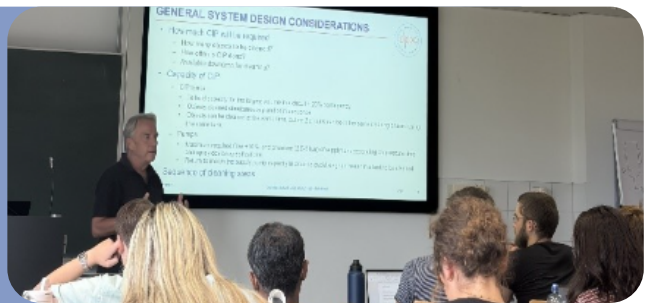


Managing Hygienic Design

Integrating hygienic design throughout the engineering lifecycle using the V-model, risk-based scalability, User Requirement Specifications (URS), risk assessment methodologies, cleaning validation, monitoring and verification

Engineering Fundamentals

Interpreting technical documentation, including technical drawings, process flow diagrams (PFDs) and Piping and Instrumentation Diagrams (P&IDs), to support engineering communication and design





If there is one thing to take away from the EHEDG Summer School, it's that hygienic design isn't a box to tick at the end - it's a decision made at the very beginning, in the specification. Get it right there, and everything downstream follows.
Get it wrong, and no amount of cleaning will fix it.

Dirk Nikoleiski, Lecturer, EHEDG Authorised Trainer



Cleaning and Hygienic Operation

The principles of cleaning and disinfection, Cleaning-in-Place (CIP) and the relationship between equipment design and cleanability

Hygienic Pumps and Valves

Hygienic requirements, design principles, selection criteria, and the impact of pumps and valves on cleanability and product integrity





Materials of Construction

Material selection for hygienic applications and construction requirements, including suitable surface properties, corrosion resistance, cleanability and design principles

EHEDG

The role of our organisation in supporting hygienic design best practice through its comprehensive product portfolio and services



With these foundations, students from different academic backgrounds can confidently engage with the practical activities, team assignments and industry case studies that follow.

02. Learning by doing

Practical application is embedded throughout the programme, allowing students to reinforce theoretical knowledge through hands-on activities and collaborative problem-solving from the very first day.

Students develop practical competencies through:

Equipment and Facility Assessment

Identifying hygienic design deficiencies, evaluating contamination risks and proposing corrective engineering solutions

Engineering Scenarios

Developing User Requirement Specifications (URS) that translate operational and hygienic needs into clear engineering requirements

Design Review and Validation

Reviewing Cleaning-in-Place system designs and conducting Factory Acceptance Test (FAT) design reviews to assess compliance with hygienic design requirements

Collaborative Problem-solving

Working in multidisciplinary teams to analyse case studies, discuss engineering decisions and present evidence-based solutions

Students are able to apply EHEDG principles to real engineering scenarios, evaluate hygienic design challenges and develop practical, risk-based solutions through teamwork and critical analysis.



> The EHEDG Summer School gave me a strong foundation in hygienic design, combining theory with practical, collaborative learning. The knowledge and perspectives I gained will stay with me throughout my career, and I'm excited to continue building on them.
>
> **Jana Fourie, participant from the University of Pretoria**

Example of a Team Exercise: Spotting Design Flows

Each team was assigned a designated area of the host university's pilot plant and tasked with identifying three hygienic design deficiencies or potential contamination risks associated with the equipment or facility, applying the hygienic design principles introduced during the classroom sessions.

For each finding, students described the issue, proposed an appropriate corrective action and documented their risk assessment.

The teams then prepared a summary and presented their observations to the wider group for discussion and feedback.



I hope students could take away a clear understanding that hygienic design is not an add-on, but a foundation, shaping food safety, efficiency and sustainability from the very first design decision - as well as the confidence to challenge existing solutions and improve them.
Marc Mauermann, Lecturer, Chair of EHEDG Sub-Committee 'Training & Education' and Authorised Trainer


EHEDG
EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP





03. Holistic approach & systems thinking

As the programme progresses, the focus expands from individual equipment to complete production systems. Students learn to understand how hygienic design decisions at equipment, process and facility level are interconnected, enabling them to evaluate food production from a system-wide perspective.

Students explore:

- hygiene zoning and physical segregation
- facility layout and process flow
- lifecycle management
- engineering documentation such as P&IDs
- interactions between equipment, buildings, utilities and cleaning systems
- hygienic risk management

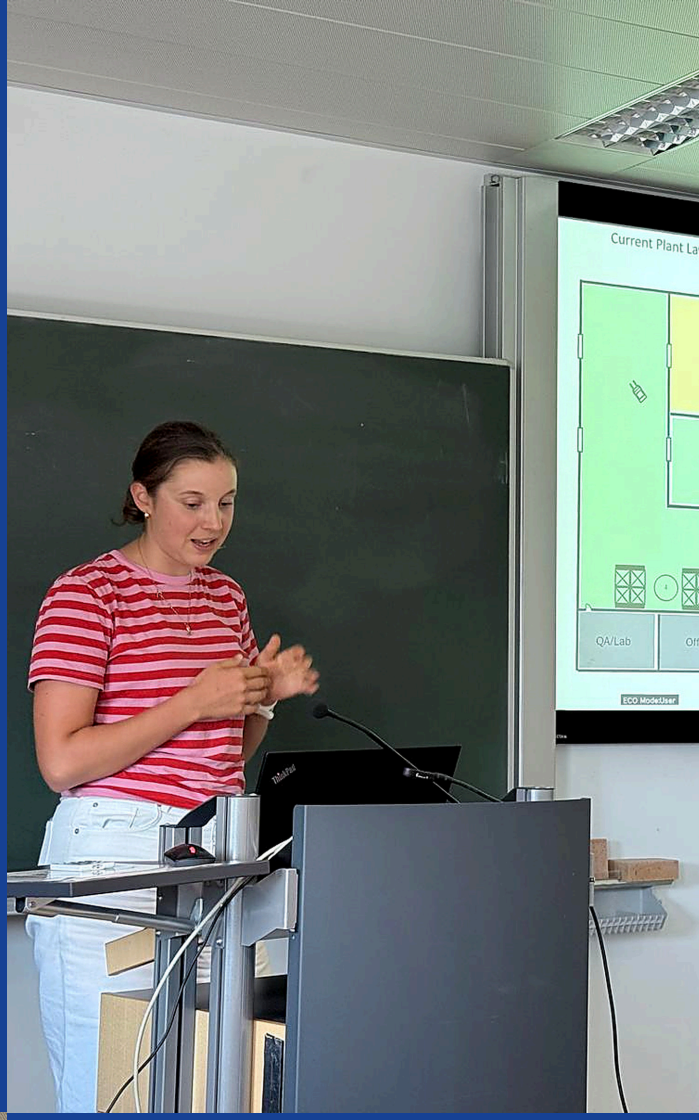
Example of Team Exercise: Hygiene Zone Mapping and Physical Segregation

Working in the same teams established on the first day, students analysed the layout of an existing food production facility to evaluate hygiene zoning, product and personnel flows, and potential sources of cross-contamination.



Each group redesigned the facility by incorporating an additional processing line while maintaining appropriate hygienic segregation.
Students identified the three most significant contamination risks, proposed engineering and layout improvements to mitigate these risks, and justified their design decisions.

The exercise concluded with team presentations and a facilitated discussion comparing the different design solutions and their impact on hygienic performance. Students learn that hygienic design extends beyond individual components to encompass the entire manufacturing environment, where equipment, building layout, personnel and material flows must work together to minimise contamination risks.







Students should leave with a strong awareness of the role hygienic design plays in food safety, the ability to apply its principles when assessing facilities and equipment, and valuable experience of working in international teams. I hope they carry this knowledge into their future careers and become ambassadors for EHEDG.
Gerhard Schleining, Lecturer, EHEDG Authorised Trainer

04. Industry integration

A defining feature of the Summer School is its close connection with industrial practice.
The programme combines academic teaching with industrial case studies and a production facility visit, allowing students to observe hygienic design principles in a commercial environment. During the pilot edition, participants visited a local food manufacturer, where they explored how hygienic engineering concepts can be applied in food processing, before reflecting on their observations in a structured debriefing session.



The EHEDG Summer School provided valuable perspectives on current guidelines, good practices, as well as innovative solutions to common challenges in the food industry. Learning about site layout principles, followed by a site visit where we could see what day-to-day production looks like, was extremely informative and instructive. The applied learning approach and the cordial staff are what made the course so captivating and memorable!
Mathieu Cleven, participant from BOKU University

05. Homework & knowledge consolidation

Learning extends beyond the classroom through structured independent work. This includes pre-readings, preparatory assignments, post-session reflections and other tasks that encourage participants to deepen their understanding of the course material, apply concepts in practice, and explore topics in greater depth. These activities are designed to reinforce learning outcomes and support continuous engagement throughout the programme.







As Food Science students, we discovered how much small equipment design details can influence food safety and cleaning. Hands-on exercises and the factory visit helped us understand hygienic design beyond the classroom and connect theory with industry practice.
We return to our studies, research and future careers with new knowledge, and a completely different way of looking at food processing equipment.
Raquel Ezcurra, Yasmin O' Brien & Princess Daniel, participants from the University of Limerick

06. Social programme & networking

The EHEDG Summer School is more than a technical programme, it's an opportunity to discover a city and build lasting connections.



Acknowledgements

The successful delivery of the pilot EHEDG Summer School was made possible through the commitment and collaboration of many organisations and individuals.
EHEDG extends its sincere appreciation to BOKU University for hosting the inaugural edition and for providing outstanding academic facilities, expertise and organisational support. We are equally grateful to the lecturers, researchers and EHEDG experts who shared their knowledge and experience throughout the programme.



Our thanks also go to the participating students from BOKU University, the University of Pretoria and the University of Limerick, whose enthusiasm, curiosity and collaborative spirit shaped the success of this first edition.
Finally, we acknowledge the invaluable contribution of our industry partners, whose engagement through case studies, practical examples and technical expertise ensured that the programme remained firmly connected to the challenges and opportunities of modern food manufacturing.



Hosting the EHEDG Summer School added an in-depth, hands-on learning experience to our participants' curriculum. The industry-focused lectures and exercises provided valuable preparation for their future careers. As a lecturer, I also gained practical insights that I can incorporate into my teaching at BOKU, extending the benefits to students who did not directly join the programme.

Felix Schottroff, Host and Lecturer, Associate Professor in Food Process Engineering at BOKU University



The EHEDG Summer School has given students more than knowledge. Students have gained applied hygienic design skills, expanded professional networks and the confidence to implement safer, more sustainable solutions in the global food industry.

Niamh Burke, Associate Professor in Food Science at University of Limerick



The EHEDG Summer School provided our students with a unique opportunity to immerse themselves in an internationally recognised learning environment. The technical knowledge acquired will be of immense value in their future endeavours.

Peet Grobler, EHEDG Authorised Trainer, liaison with University of Pretoria

The journey has begun.
Become the next EHEDG Summer School host.

By hosting an EHEDG Summer School, your university will:

Enhance its educational offering

with a unique interdisciplinary programme that complements existing food science and engineering curricula

Showcase its facilities and expertise

including laboratories, pilot plants, research activities and academic strengths

Strengthen partnerships with industry

by engaging with food manufacturers, equipment suppliers and hygienic design experts

Create opportunities for future collaboration

in education, research and innovation with EHEDG, partner universities and industry

Increase its visibility

by attracting motivated students, visiting lecturers and industry professionals

Become part of the international EHEDG Summer School network

helping shape the next generation of hygienic design education and contributing to a shared global educational framework

WHAT EHEDG WILL PROVIDE

- programme & quality framework, adaptable to your academic and regional context
- teaching materials & documentation
- expert lecturer(s) ready to support your host instructor(s)
- branding and promotion

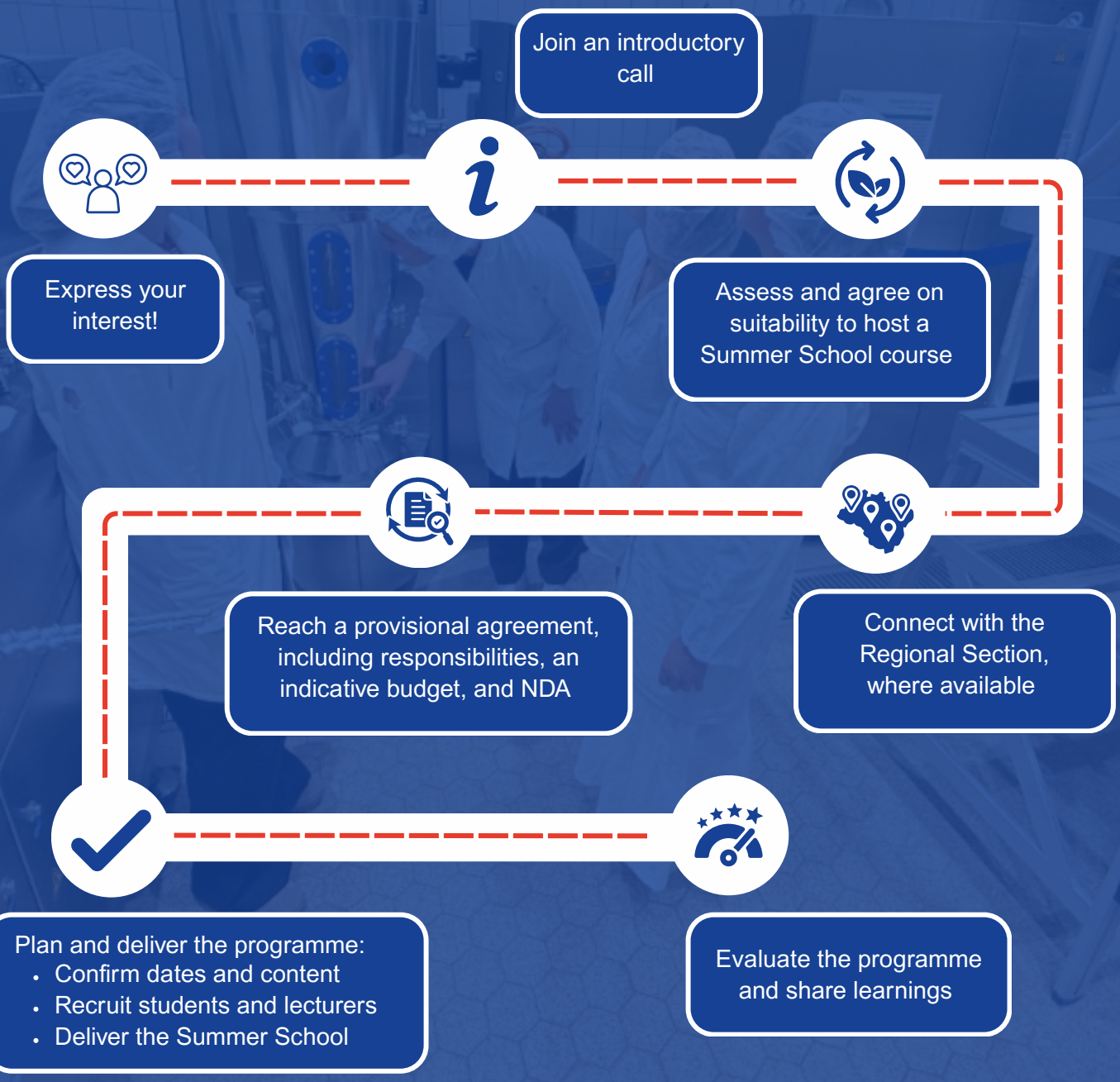
WHAT YOUR UNIVERSITY WILL PROVIDE

- relevant student cohorts
- venue: classrooms & laboratories (the latter, if available)
- external company visit/field trip
- social programme (in coordination with the EHEDG Regional Section)
- overall on-site organisation

WHAT YOUR STUDENTS WILL GAIN

KNOWLEDGE | **PRACTICAL SKILLS** | **NETWORKING** | **EXPOSURE TO THE INDUSTRY**

From Interest to Summer School



LET'S SHAPE THE NEXT GENERATION OF HYGIENIC DESIGN PROFESSIONAL TOGETHER!

Fill in this short form and you will be contacted by a member of our team.

EHEDG UNIVERSITY MEMBERSHIP

The Next Generation of Hygienic Design Professionals

EHEDG is helping universities connect students and lecturers with industry knowledge, practical expertise and internationally recognised educational resources supporting future careers and stronger collaboration



Become an EHEDG University Member