

## FEATURED STORY

### GEC to Co-Host iCANX Davos Summit: Just One Month Away!

We're excited to announce that with just one month to go, GEC Academy will be co-hosting the iCANX Davos Summit on July 11-12, 2024, in Davos, Switzerland. This summit is set to shine a spotlight on groundbreaking innovations and cutting-edge discoveries in **Innovation, Science, Technology, Investment, Management, and Entrepreneurship (ISTIME)**. The upcoming iCANX Davos Summit 2024 will gather global talents from the ISTIME field to catalyze global science and technology advancement through collaborative innovation and knowledge exchange. We are delighted to partner with iCANX to sponsor and cohost the summit, recognizing exceptional contributions to research in innovation, science, and entrepreneurship, as well as showcasing excellence and innovation among researchers and encouraging further advancements and collaborations.



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As part of our co-hosting efforts, GEC Academy, the only Chinese educational enterprise among the co-hosts of the iCANX Davos Science Summit, will hold a parallel session on *AI+: Frontiers, Trends and Talents Nurturing in Innovative AI Development* during the summit. This parallel session will explore the societal impact of AI technology, examining how AI positively influences various domains, including engineering design, manufacturing science and technology, energy science, life science, public health, etc. We have also invited scholars, experts, scientists, and officials from international organizations from the interdisciplinary field of AI worldwide, alongside distinguished guests such as [Prof. Randy W. Schekman](#), the 2013 Nobel Laureate in Physiology or Medicine, who has delivered several enlightening lectures at previous GEC Global Top Scientists Forums, and [Ms. Angela Kane](#), former UN High Representative for Disarmament Affairs and Under-Secretary-General for Management in the United Nations. They will join us to explore the forefront and trends of relevant disciplines, as well as how to introduce effective governance mechanisms in AI applications to promote its healthy development and maximize its potential.

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Therefore, we are excited to extend an invitation for you to share your invaluable insights on ISTEME with participants at the upcoming iCANX Davos Summit. Your expertise and contributions would greatly enrich the event, and we would be delighted to have you join us.

The registration fee for the summit is EUR 765, with a special reduced rate of EUR 450 available for PhD candidates. Please note that the fee covers only the conference registration and does not include accommodation, airport transfers, or other additional expenses. To register, please reach out to [guoqing.zhang@gecacademy.cn](mailto:guoqing.zhang@gecacademy.cn) and, if you're a PhD candidate, don't forget to include your valid student ID.

### Schedule:

July 10th <sup>&lt;</sup>	Arrival and check-in at Davos, Switzerland <sup>&lt;</sup>
July 11th <sup>&lt;</sup>	Morning: <sup>&lt;</sup> Opening Ceremony of the iCANX Davos Summit <sup>&lt;</sup> Chancellor's Forum: Shaping the Future of Education <sup>&lt;</sup>
	Afternoon: <sup>&lt;</sup> AI+: Frontiers, Trends and Talents Nurturing in Innovative AI Development <sup>&lt;</sup> Young Scientist Award Event <sup>&lt;</sup>
	Evening: <sup>&lt;</sup> Gala Dinner <sup>&lt;</sup>
July 12th <sup>&lt;</sup>	Morning: <sup>&lt;</sup> Scholar's Forum <sup>&lt;</sup> 2024 iCANX College Students Innovation and Entrepreneurship Competition (International Finals) Selection <sup>&lt;</sup>
	Afternoon: <sup>&lt;</sup> Young Scientist Award Selection <sup>&lt;</sup> Innovation Award Selection <sup>&lt;</sup> iCANX Closing Ceremony <sup>&lt;</sup>
July 13th <sup>&lt;</sup>	Departure from Davos, Switzerland <sup>&lt;</sup>

We expect that this event will provide a networking opportunity for young scholars and scientists from various sectors and dimensions to exchange experiences and share the latest developments in their fields, shaping a future world guided by principles of humanity, scientific progress, and technological innovation.

For further details about the summit, please visit the [official iCANX website here](#). We look forward to your participation and the opportunity to learn from your expertise.

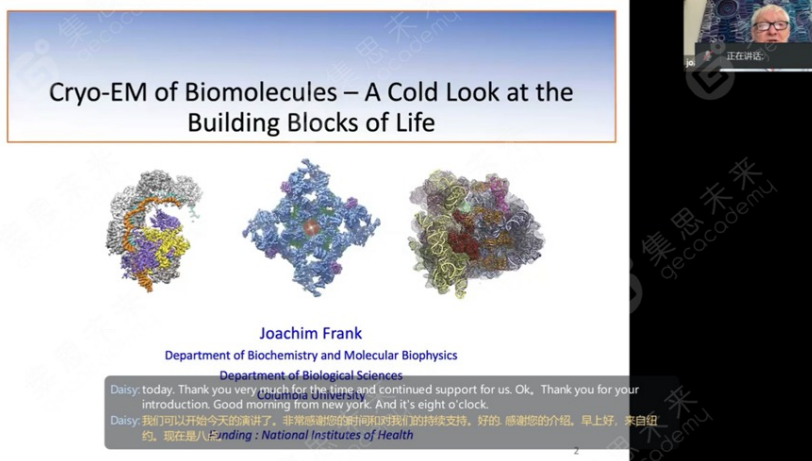
**Innovation | Science |  
Technology | Investment  
| Management |  
Entrepreneurship**



## FEATURED STORY

### Launching a New Era in Structural Biology: Insights on Single-Particle Cryo-EM from Nobel Laureate Professor Joachim Frank

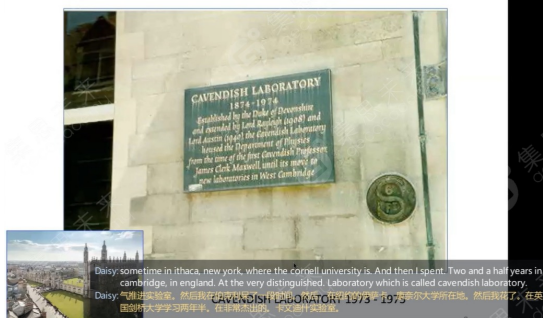
On May 17, GEC Academy successfully hosted the Global Top Scientists Forum, titled “**Cryo-EM of Biomolecules - A Cold Look at the Building Blocks of Life.**” Professor Joachim Frank, a Nobel laureate, delivered an online lecture, imparting his profound insights to a diverse audience consisting primarily of university students majoring in Physics, Biology, and Chemistry, as well as esteemed educators and professors from universities both in China and abroad. Throughout the lecture, Professor Frank elucidated complex scientific concepts, explaining the pivotal role of cryo-electron microscopy (cryo-EM) in structural biology and its profound implications for biological imaging, particularly its critical role in developing therapeutics and vaccines for COVID-19.



*Professor Frank Introducing the Theme of the Forum*

Professor Joachim Frank is a Nobel laureate and Professor of Biochemistry and Molecular Biophysics and Biological Sciences at Columbia University. He revolutionized cryo-EM, achieving high-precision analysis of biomolecular structures in solution, which earned him the 2017 Nobel Prize in Chemistry. This was the second occasion on which Professor Frank attended GEC Global Top Scientists Forum as a guest lecturer. Previously, he presented a thorough analysis of trending topics in cryo-EM and highlighted the effectiveness of single-particle cryo-EM in visualizing interactions between biomolecules.

#### 4. CAMBRIDGE, UK: electron optics & image processing



*Professor Frank Recalling His Academic Journey*

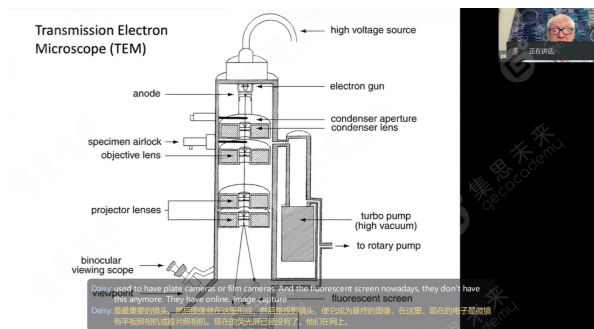
- Brief *Werdegang*
- The aims of structural biology
- Electron microscopy
- Single-particle methods
- Cryo-methods of sample preparation
- First “golden age” of single-particle cryo-EM
- 3D classification -- “Story in a sample”
- Cameras with direct electron detection
- Toward near-atomic resolution: examples
- Single-particle cryo-EM and Covid-19
- Chemistry Nobel Prize 2017

*Contents of the Forum*

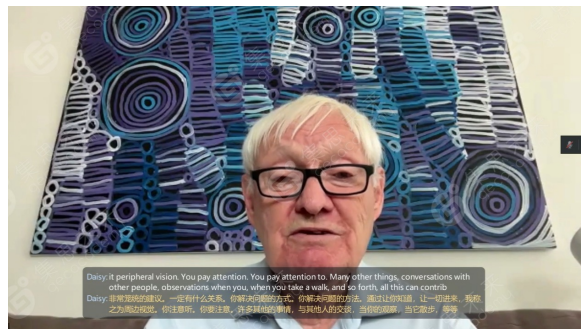
## FEATURED STORY

While tracing his educational and research journey at the beginning of the lecture, Professor Frank provided a thorough background for understanding his research and achievements in structural biology. He detailed the various stages of his career, highlighting noteworthy contributions and milestones that have profoundly influenced his advancements in cryo-EM and single-particle reconstruction, especially in ribosome structure studies. By adopting an interdisciplinary approach that merges physics, biology, and chemistry, Professor Frank underscored the significance of interdisciplinary collaboration in advancing scientific knowledge, aiming to motivate the attendees to explore innovative paths in scientific discovery.

In his comprehensive lecture, Professor Frank then detailed the [basic principles of cryo-EM and summarized the multidimensional methods used in molecular structure research](#), including protein purification and electron microscopy. He highlighted how visualizing macromolecules at high resolution provides critical insights into their functions. Delving deeper, Professor Frank discussed [the pivotal role of electron microscopy in biological specimen analysis](#), focusing on single-particle methods that enable the reconstruction of 3D structures from 2D images. He illustrated how the advent of direct electron detection cameras has significantly improved image quality, achieving near-atomic resolution. Building on this foundation, Professor Frank explained [the invaluable utility of cryo-EM in mapping viral structures, refining drug design, and understanding disease mechanisms](#). He emphasized [the essential role cryo-EM played in the development of COVID-19 vaccines](#), facilitating the understanding of the virus's spike protein and the design of effective vaccines. At the end of his lecture, Professor Frank reflected on his journey as the 2017 Nobel laureate in Chemistry. His trailblazing work in cryo-EM have revolutionized structural biology.



*Professor Frank Explaining the Structure of Transmission Electron Microscope (TEM)*



*Professor Frank Offering Valuable Academic Advice*

The forum concluded with an insightful Q&A session, featuring Professor Frank and Professor Roger Dannenberg of Carnegie Mellon University, a long-time faculty member of GEC Academy. They engaged in an in-depth dialogue regarding particles and reconstructive technology. Professor Dannenberg queried the number of particles needed for 3D reconstructions of large molecules, to which Professor Frank explained that typically tens of thousands of good particles are required, depending on the sample's behavior. For students, Professor Frank stressed the importance of cultivating a broad awareness, or “peripheral vision” in problem-solving, which involves being open to various sources of inspiration and learning from a wide range of experiences. Concerning artificial intelligence, Professor Frank advised students to prioritize the development of their foundational scientific knowledge and problem-solving skills instead of over-relying on AI. He suggested using AI as a tool while maintaining a solid foundation in scientific knowledge and critical thinking.

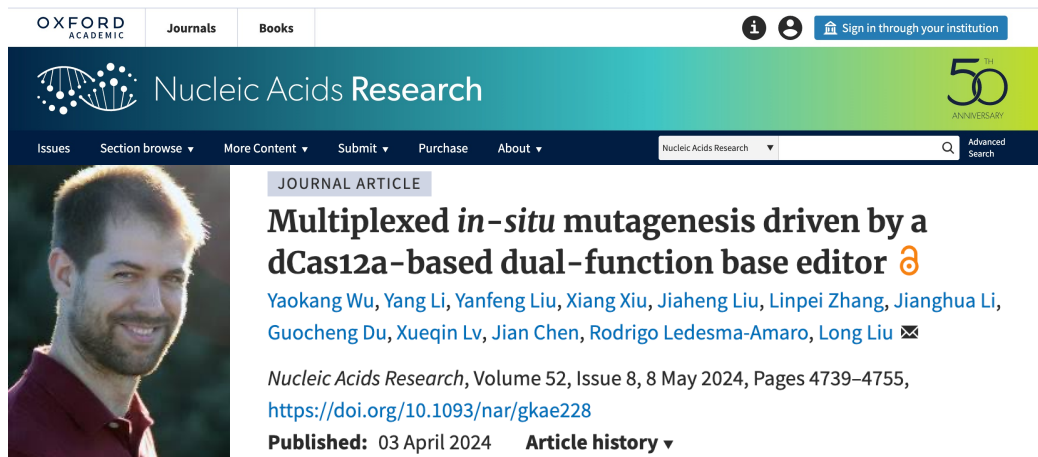
### • What's Next?

We are excited to announce the upcoming Global Top Scientists Forum on July 12th, focusing on the intriguing topic of “How Cells Secrete Proteins and RNA.” by Professor Randy W. Schekman, the 2013 Nobel Laureate in Physiology or Medicine. This event will be held via [Zoom](#) from 8:00 AM to 9:00 AM, Beijing time (Meeting ID: 875 0116 4378; Passcode: 240712).

## Faculty Work Gallery

This month we introduced a **paper** edited by **Professor Rodrigo Ledesma Amaro**. If you are interested in showcasing your research, grants, book releases, conference presentations, or any work you deem valuable and interesting to share, please feel free to contact us.

### Multiplexed in-situ mutagenesis driven by a dCas12a-based dual-function base editor



The screenshot shows the Oxford Academic website interface. At the top, there are navigation tabs for 'Journals' and 'Books', and a 'Sign in through your institution' button. The main header features the 'Nucleic Acids Research' logo and a '50th Anniversary' badge. Below the header is a navigation bar with options like 'Issues', 'Section browse', 'More Content', 'Submit', 'Purchase', and 'About'. A search bar is also present. The main content area displays a 'JOURNAL ARTICLE' with a portrait of Professor Rodrigo Ledesma Amaro on the left. The article title is 'Multiplexed in-situ mutagenesis driven by a dCas12a-based dual-function base editor'. The authors listed are Yaokang Wu, Yang Li, Yanfeng Liu, Xiang Xiu, Jiaheng Liu, Linpei Zhang, Jianghua Li, Guocheng Du, Xueqin Lv, Jian Chen, Rodrigo Ledesma-Amaro, and Long Liu. The article is from Nucleic Acids Research, Volume 52, Issue 8, 8 May 2024, Pages 4739–4755. The DOI is https://doi.org/10.1093/nar/gkae228. It was published on 03 April 2024. There is an 'Article history' link.

**[Professor Rodrigo Ledesma Amaro](#)**, Reader in Synthetic Biology Department of Bioengineering - Faculty of Engineering at Imperial College London

#### Abstract:

Mutagenesis driving genetic diversity is vital for understanding and engineering biological systems. However, the lack of effective methods to generate in-situ mutagenesis in multiple genomic loci combinatorially limits the study of complex biological functions. Here, we design and construct MultiduBE, a dCas12a-based multiplexed dual-function base editor, in an all-in-one plasmid for performing combinatorial in-situ mutagenesis. Two synthetic effectors, duBE-1a and duBE-2b, are created by amalgamating the functionalities of cytosine deaminase (from hAPOBEC3A or hAID\* $\Delta$ ), adenine deaminase (from Tada9), and crRNA array processing (from dCas12a). Furthermore, introducing the synthetic separator Sp4 minimizes interference in the crRNA array, thereby facilitating multiplexed in-situ mutagenesis in both *Escherichia coli* and *Bacillus subtilis*. Guided by the corresponding crRNA arrays, MultiduBE is successfully employed for cell physiology reprogramming and metabolic regulation. A novel mutation conferring streptomycin resistance has been identified in *B. subtilis* and incorporated into the mutant strains with multiple antibiotic resistance. Moreover, surfactin and riboflavin titers of the combinatorially mutant strains improved by 42% and 15-fold, respectively, compared with the control strains with single gene mutation. Overall, MultiduBE provides a convenient and efficient way to perform multiplexed in-situ mutagenesis.

Please click [HERE](#) to find more information about the book.

## GEC CULTURE

### Commitment and Innovation at the Heart of GEC's Dongdaihe Getaway

On June 6th and 7th, the GEC Teaching & Research Center, along with the ASI Global team hosted our quarterly review meeting in the picturesque coastal town of Dongdaihe, Liaoning - celebrated as China's first royal marine area. This gathering provided us with a valuable opportunity to reflect on our achievements in the first half of 2024, strategize for future successes, and encourage the exchange of ideas across departments. Beyond the review meeting, we would also like to give everyone a chance to unwind and experience the breathtaking coastal scenery, making for a refreshing and inspiring retreat.



*Precious Time Records*

Upon arrival, we kicked off the afternoon with a seafood lunch, followed by a comprehensive review meeting. This session offered a dynamic platform for in-depth discussions and collaborative problem-solving. The Academic Management Team and the Innovative Education and Curriculum Center highlighted their challenges, such as the course management issues and cross-departmental collaboration in online projects, while presenting actionable solutions and future plans. The Academic Branding team then introduced their current focus on new media operations and invited everyone to brainstorm on how to leverage existing resources for breakthroughs and expanding GEC's brand influence. The Global Competence Development team showcased their key workshop products and outlined their future priorities, sparking insightful discussions and exchanges. The meeting room buzzed with energy as we engaged in vibrant exchanges, offering diverse perspectives and robust solutions.

As the sun set, we transitioned from formal discussions to a lively beachside BBQ party, which was a perfect blend of camaraderie, laughter, and relaxation. We savored delicious grilled seafood and other delicacies while enjoying the stunning ocean views. As twilight deepened, a spectacular fireworks display lit up the night sky, leaving everyone in awe.

## GEC CULTURE



*Delicious Seafood Lunch and Tempting Barbecue Party*



*The Tranquil Coastal Scene of Dongdaihe*

The following morning brought a new wave of excitement with spirited beach games that got everyone moving and laughing. The highlight of the day was a psychology game with “OH Cards,” where participants randomly chose cards and engaged in a story relay. This activity brought out everyone’s creativity, resulting in humorous and imaginative stories that had everyone in stitches.



*Pleasant Beach Game Time and Hilarious Storytelling Relay*

As we wrap up our unforgettable adventure in Dongdaihe, we’re inspired by the bonds we’ve strengthened and the new ideas we’ve discovered. We hope that everyone in GEC can embrace an open-minded, supportive, and creative mindset, not just for our students, faculty, and staff, but for each other. Looking ahead, we’re excited to bring more opportunities for fun and connection to different cities, providing everyone with the opportunity to experience joy beyond work and fostering an environment where everyone feels valued. At GEC, every individual is essential, and we’re committed to creating a workplace where passion and creativity thrive.

## Introducing New Faces

We're pleased to welcome 2 new faces to the GEC team - **Xin & Chen!**



**Xin ZHANG**

xin.zhang@gecacademy.cn

### 01 Educational background:

University Master of Translation and Interpreting, Heilongjiang University

### 02 What are your current duties?

As a brand specialist, my primary responsibilities include managing promotional materials for the branding department. This involves translating and drafting various promotional documents, such as brochures and promotional articles. I need to ensure that these materials accurately convey the company's information while enhancing its brand image. Additionally, I coordinate with other departments to maintain consistency and high quality across all promotional materials.

### 03 What made you choose GEC Academy?

In my previous job, I had the opportunity to familiarize myself with the course offerings of GEC Academy, which left a lasting impression on me. The courses at GEC are comprehensive and highly practical, which sparked my keen interest in the company. Upon closer interaction with GEC, I was deeply attracted to the overall atmosphere of the organization. Its advanced operational philosophy, positive corporate culture, harmonious employee relationships, and meticulous professionalism were key factors that motivated me to join GEC.

### 04 What are your specialisms and interests?

I have a profound love for music. It is not only a means of relaxation for me but also a significant source of inspiration. During my free time, I often attend live house shows and music festivals to revel in the electrifying and passionate atmosphere of live music. The feeling of cheering along with the crowd and immersing oneself in the music is an irreplaceable experience. Cooking is another one of my major hobbies. I enjoy experimenting with new recipes. Cooking is not only a creative process but also a way of sharing love. I believe that a vibrant and diverse life enhances personal happiness and fosters greater creativity and motivation in one's professional endeavors.



## Introducing New Faces

We're pleased to welcome 2 new faces to the GEC team - **Xin & Chen!**

### 01 Educational background:

Bachelor of Arts in English, Yanshan University

### 02 What are your current duties?

In my role as the Program Manager for Global Competence Development Project, I'm primarily responsible for developing courses and collaborating with teaching faculty.



**Chen LONG (Corrine)**  
chen.long@gecacademy.cn

### 03 What made you choose GEC Academy?

I chose GEC Academy for its academic philosophy and global outlook, which create a dynamic environment for professional development. Its commitment to innovative educational practices impressed me. This ideal platform presents an opportunity to integrate my intercultural expertise from previous projects and industry into the field of education.

### 04 What are your specialisms and interests?

My expertise in intercultural communication and global thinking is enriched by my previous working experience. My personal interests in travel, cycling and reading fuel my passion for exploring diverse cultures and destinations.



## AMAZING WORK FROM GEC STUDENTS

Each month, GEC will introduce some of our exceptional students' work in a specific research area to our audiences. This month we selected two articles from our previous students in the field of **Sociology**.

### Unveiling the Veil: Exploring the Origin, Effects, and Coping Strategies of Menstrual Stigma

This paper enhances understanding of the period stigma and its consequences, proposing practical strategies to counteract it. However, limitations include the lack of qualitative and quantitative methods due to data constraints and insufficient historical sources, impacting the portrayal of its inception. In conclusion, this study illuminates the enduring complexity of period stigma, raising awareness about its harm. Synthesizing existing literature provides valuable insights into its origins, consequences, and coping mechanisms...

Click [HERE](#) to read the full text!



### Corporate Obligations in Anti-Sexual Harassment in the Workplace: A Comparison Based on Chinese and U.S. Laws

This paper adopts a comparative textual analysis, combining Chinese and American laws and relevant cases to show the history of changes and different ways of regulating workplace sexual harassment in both countries. Combining the advantages and disadvantages of the two, the author proposes a regulatory model centered on gender discrimination and combined with the protection of human dignity. This will provide theoretical support for establishing a sound system of ex-ante prevention and ex-post relief. At the same time, this paper provides a systematic explanation of sexual harassment in the workplace from multiple perspectives, such as the evidence system and legal and economic analysis...

Click [HERE](#) to read the full text!



## Join Us at GEC Technical Sponsorship Conferences: Open Calling for Committee Members & Speakers



Since 2023, GEC Academy has taken immense pride in its role as a technical sponsor for a diverse array of international academic conferences, with a vision entailing both promoting interdisciplinary cooperation and nurturing an inclusive, collaborative educational environment that extends its benefits beyond the scientific community to society at large. **Hence, we are enthusiastic about extending invitations to more of our esteemed GEC Faculty members and Teaching Fellows, encouraging your active involvement as committee members or innovative speakers and storytellers**, who are passionate about sharing innovative ideas with the brightest minds, providing enriching insights, offering innovative experiences, and sharing real-world examples, among other valuable contributions to GEC technical sponsorship conferences.

We are thrilled to hear from our GEC faculty members, teaching fellows, teaching assistants (PhD holders), and scholars whose expertise aligns with conference themes and interdisciplinary intersections below. Please feel free to send your CVs, resumes, bibliographies, or personal links to the specific conference contact email for detailed information. For experts and scholars seeking technical sponsorship, who are passionate about initiating international conferences, and wish to contribute to global academic exchange, please do not hesitate to contact us at [conference@gecacademy.com](mailto:conference@gecacademy.com).

### Upcoming Conferences

For June, we have one technical sponsorship conference covering Environmental Ecological Engineering, Chemical and Environmental Science, BIM, Internet of Things, Information Management, Big Data Analysis, Intelligent Optimization Decision-making, and beyond.

- [June 21-23, Budapest, Hungary](#)
- [International Conference on Ecological Protection and Environmental Chemistry \(EPEC 2024\)](#) is an international forum for the presentation of technological advances and research results in the fields of ecological protection and environmental chemistry, which is also going to highlight and discuss topics on environmental ecological engineering, chemical and environmental .
- [June 14-16, Shanghai, China](#)
- [The 2024 International Conference on Engineering Management, Information Technology and Intelligence \(EMITI 2024\)](#) will bring practitioners, and enthusiasts from across the world to explore and exchange cutting-edge advancements in the fields of Engineering management, information technology and intelligence.

Please click [HERE](#) to explore these exciting upcoming events!

## WHAT PROGRAMS DOES GEC OFFER IN JUNE 2024 SEMESTER?

In June, GEC launches a total of 67 online research programs in the areas of Accounting, Biomedical Science, Computer Science, Economics, Electrical Engineering, Finance, Marketing, Mathematics, Physics and so on. This month, GEC also sets up 3 customized lectures for Southwest Jiaotong University and Guizhou University. We will continue to gather students, faculty, and staff for an unrivaled academic experience.

The tables

[GEC 2024 June Program List](#)

[GEC Customized Lectures for Universities in June](#)

shows detailed information about the programs that GEC launches in June.

Please click [HERE](#) to find previous program/course offerings.

### Newsletter Improvement Survey

We would love to hear your thoughts or feedback on how we can improve your experience with our newsletter.

For your convenience, please click [HERE](#) to fill out the survey link.

**GEC Academy**

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