

# FEATURED STORY 01

## Exciting Job Opportunities to Work in China! - SJTU Excellent Young Scholars Program (Overseas) for 2023

The School of Mechanical Engineering of Shanghai Jiao Tong University (SJTU) is a world-class engineering school committed to high-level education and cutting-edge research. As one of the top Schools of Mechanical Engineering in China, it strives to increase its international competitiveness and global presence through quality teaching, advanced research and close collaboration with leading universities in the world.

With an aim to build a decentralized and borderless academic platform to foster innovative, interdisciplinary endeavors and boost cross-disciplinary collaboration among young researchers, GEC Academy and Shanghai Jiao Tong University jointly established SJTU – GEC Center of Innovative Design for Interdisciplinary Studies in 2021. In the past year, the center worked with SJTU School of Mechanical Engineering, successfully co-hosting two Liyuan-GEC Interdisciplinary Science & Future Technologies Overseas Forum on power engineering, nuclear science, and the exploration and coexistence of human life and machine life, as well as a Master Distinguished Lecture on the reconstruction of cryo-electron microscopy. These activities have scholars from world-leading institutions, who have also been working with GEC for several years, and a Nobel Laureate, Dr. Joachim Frank, to deliver lectures in related fields.

### Program Goal

The Excellent Young Scholars Program aims to attract and encourage overseas outstanding young scholars (including non-Chinese residents) who have made good research outputs in Mechanical Engineering, Energy and Power Engineering, Nuclear Science and Technology, Biomedical Engineering, Materials Engineering and related interdisciplinary subjects to work in China.

### Benefits

1. Research Fund: RMB 4-8 million start-up fund
2. Other Support:
  - Highly Competitive living allowance + subsidies
  - Research grant, laboratory and office space
  - Research assistants and financial support for admitting graduate students
  - Collaborations with world-leading research center
3. SJTU Mechanical Engineering will set up Foresight Science Research Center for the young scholars who have been working on foresight science and interdisciplinary studies, and provide them with necessary support.

### Eligibility

**Applicants should meet the following conditions:**

1. Abide by the laws of the People's Republic of China and have good ethics in science
2. Were born on or after 1st January, 1983
3. Research interests focus on Mechanical Engineering, Energy and Power Engineering, Nuclear Science and Technology, Biomedical Engineering, Materials Engineering and related interdisciplinary subjects, etc.
4. Prior to 15th April 2023, have no less than three years' continuous research or teaching experience outside China in prestigious universities or R&D institutes; (Exceptions will be given to applicants who have obtained the doctorate degree overseas with extraordinary research achievement);
5. Provide evidence of research excellence which can be demonstrated by a record of contributions and endorsements by scholars of high filed standing
6. Are living outside or move to China after 1st January 2022, and willing to work full time for three years in China with no full-time employment overseas

### How to Apply

CV and other supportive documents of those interested can be sent to **Guoqing Zhang**, Vice-Director of SJTU-GEC Joint Research Center, at [guoqing.zhang@geccademy.cn](mailto:guoqing.zhang@geccademy.cn) with the subject "Application Intention for Overseas Outstanding Youth Project" **before 1st March 2023**. All qualified applicants are welcome.

## FEATURED STORY 02

### CEI - OB Initiative: GEC Running New Experiment on Feedback with Professor from CJBS in February

This month, GEC Academy will run a social experiment on feedback together with a professor at Cambridge Judge Business School, as a project of Collaborative Experimentation Initiative for Organizational Behavior (CEI - OB Initiative), aiming to study organizational behavior in organizations and to build a better work environment. It is the first experiment since GEC Academy and Cambridge Judge Business School formally signed the Memorandum of Understanding (MOU) on Behavioral Research Collaboration. More details of the experiment can be found in this [FLYER](#).

Co-directed and co-founded by GEC Academy and Cambridge Judge Business School in October 2021, the CEI-OB Initiative (Collaborative Experimentation Initiative for Organizational Behavior) was established to provide a fundamental research platform to support the scientific development of Organizational Behavior (OB) studies. With a mutual interest in research, development, education and technology transfer, GEC Academy and the Cambridge Judge Business School made an MOU last July to undertake a collaboration in the area of behavioral research on a non-commercial basis, including joint experimental/behavioral research projects, participation pool establishment, experiment debrief zoom meeting, etc., and to seek solutions for global business, industrial and social problems.

Launched to connect students with top researchers across the world, this initiative allows students to participate in research projects with a variety of front-edge topics. So far, GEC has conducted two collaborative experiments - Leadership Preference Study by the end of 2021, and Survey about Daily Work Structure in early 2022. These joint experiment projects have provided student researchers with additional learning experiences and networking opportunities. With the diverse participant pool provided by GEC, CEI-OB aspires to further contribute to the understanding of human psychology and behaviors at the workplace.

### CALL for Research Collaborations!

Over the past few years, GEC has made great efforts to promote university-industry collaboration and create research opportunities for students, young scholars, and teachers. And we are more than happy to work with our faculty and partner institutions and explore any possibility for collaborations in research. Till now, we have connected hundreds of research participants and assistants, and young scholars with professors and institutions. If you need to, for example, recruit student volunteers or research assistants for your research, or simply an idea for research collaboration or experiment collaboration, please contact [Katie Wang](#) at [ke.wang@gecademy.com](mailto:ke.wang@gecademy.com).

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Invitation to  
2023 February  
Faculty  
Meeting

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## Dear GEC Faculty,

For our next Faculty Seminar (**February 28th, Tuesday, 22:00-23:00, Beijing Time**), we will further clarify and define the roles among GEC program staff, including our Leading Instructor, Teaching Fellow, TAs, Academic Manager, Program Coordinators, etc, to clear some of the confusion you might have regarding the responsibilities of the different teams at GEC and answer any questions you may have.

[HERE](#) is a tool for time zone converting.

Once again, a grand welcome to you all to attend next month's seminar. For participants, please find [RSVP](#) here!

**[HERE](#) IS THE ZOOM LINK:**  
***Zoom ID: 473 876 6982 Password: 102938***

### **2023 Faculty Round Table Meeting Schedule (Tentative & Welcome Suggestions!)**

- Feb: Role clarification and definition among program staff
- April: Innovative use of IT in teaching/ Effective online teaching
- June: GEC Research Seminar Series: Focusing on Biomedics Topics
- August: Best practices working with TA's and mentors
- October: Best practices in course development and delivery
- December: Annual Meeting

## Faculty Work Gallery

*This month we introduced a paper from **Professor Leonardo P. Chamorro**. 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.*

### Effects of Low Clay Concentrations on Nearly Isotropic Turbulence

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#### PHYSICAL REVIEW FLUIDS

Highlights Recent Accepted Collections Authors Referees Search Press About Editorial Team

#### Effects of low clay concentrations on nearly isotropic turbulence

Shyuan Cheng, Shaelynn Kaufman, Vaibhav Tipnis, James L. Best, and Leonardo P. Chamorro  
Phys. Rev. Fluids **7**, 073801 – Published 26 July 2022



#### Abstract

We conducted laboratory experiments to quantify the effect of low concentrations of clay,  $C \in [0, 2] \%$ , on turbulence in water-clay flows under nearly isotropic conditions using a novel approach. Full optical access was possible using Laponite RD™, a synthetic clay capable of producing clear suspensions of clay particles. Turbulence was generated in a customized cubic mixing box using flow actuators placed symmetrically at each of the eight corners. High-frame-rate particle image velocimetry was used to quantify the spatiotemporal dynamics of turbulence around the center of the mixing box. The results showed that the presence of clay particles strongly modulated the structure of turbulence. Monotonic reduction of the turbulent kinetic energy (TKE) and mean dissipation rate  $\langle \epsilon \rangle$  and increase of the Taylor microscale  $\lambda$  was induced by increasing the clay concentration. In particular, the measurements indicated a relation between clay concentration and the  $p$  factor, the known Kolmogorov power-law correction  $-5/3 + p$  ( $Re\lambda$ ) of the inertial subrange, where  $Re\lambda$  is the Taylor microscale Reynolds number. The  $p$  factor decreased approximately linearly within  $1\% \leq C \leq 2\%$ . This parameter and the third-order structure function  $S_3$  supported the scale changes obtained from direct estimation with particle image velocimetry (PIV) data. These results demonstrated the significant impact of clay on the multiscale dynamics of turbulence even at low clay concentrations.

Click [HERE](#) to find the paper online!

## Introducing New Faces

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



**Name:** Tian Li  
**Nick Name:** Alice

### 01 Educational background:

Master of Applied Finance, Australian National University, 2019-2020

Bachelor of Economics, Tsinghua University, 2014-2018

### 02 What are your current duties?

I serve as Course Management Assistant at GEC Academy. My job responsibilities involve communicating with professors effectively and I try to work toward a higher level of professionalism. I also participate in organizing the database of overseas teachers, creating course packs for domestic colleges, and scheduling as well as hosting talks on various topics.

### 03 What made you choose GEC Academy?

After talking with some teachers who work for, I have heard that the culture in this company is friendly and supportive. I desire to work in such an environment that inspires and encourages me. Besides, GEC Academy still has an impressive track record of achievement during the pandemic, and it keeps trying to provide educational resources of a high standard for students. So I want to be a part of its journey.

### 04 What are your specialisms and interests?

I can be a good listener and communicator since I have a patient and reliable personality. It enhances my ability to understand better and makes the experience of speaking to me more enjoyable for other people. And because of my academic background, I am able to interact with professors in financial and economic-related fields more effectively. One of my favorite pastimes is practicing and appreciating traditional Chinese calligraphy. I have joined related hobby groups, and I enjoy talking about calligraphy with other group members, including masters, script types, etc.



### 01 Educational background:

Master of Arts in Translation, Xiamen University, 2014-2017

Bachelor of Arts in English, Central South University, 2010-2014

### 02 What are your current duties?

I'm now a member of the Course Management Team, responsible for planning, scheduling, contracts and payment, and quality management of programs.

### 03 What made you choose GEC Academy?

Interest in international education, friendly manner and professionalism of the interviewers, and free access to all these informative lectures.

### 04 What are your specialisms and interests?

I majored in translation for my master's degree and am still quite interested. I've translated three books and am planning to do more. I like singing. Music can create a world so different from the real one within just a few minutes, and sometimes lyrics can be thought-provoking as a form of literature.



**Name:** Yuanxi Xu  
**Nick Name:** Cicely



## Overseas Courses Taken Online to Lose Accreditation

*China will stop accrediting foreign diplomas and degrees obtained via online courses starting from the spring semester this year as major overseas study destinations have opened their borders, according to the Ministry of Education's Chinese Service Center for Scholarly Exchange.*

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

## LATEST NEWS OF CHINA EDUCATION

### Switzerland Eyes Vocational Education Cooperation with China



*Switzerland was among the first Western countries to recognize and establish diplomatic relations with China, and over more than seven decades, China-Switzerland relations have maintained sound development and accumulated rewarding experiences.*

*China and Switzerland maintain close cooperation in a range of fields, mostly economically.*

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

## 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 **Mechanical Engineering**.

### Computer-Aided Intelligent Control of Inlet Air Cooling System in Combined Cycle Power Plant

In a hot climate, the overall efficiency of the combined cycle power plant (CCPP) decreases dramatically owing to the rise of environmental temperature, which decreases the mass airflow to the compressor. Therefore, the gross power and thermal efficiency drop. Worldwide practice uncovers that gas turbines generate up to 20% less power in summer than in winter. A brief introduction of the CCPP and an analysis of the influence of ambient temperature is provided in this work. Furthermore, this essay gives an outline of the combined cycle based on several inlet air cooling technologies and why they are necessary.



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

### The Progress of Superconducting Magnet Designing for ITER

Contemporarily, fusion power shows a strong potential to address the energy crisis faced by mankind among non-traditional energy. This article will introduce ITER and its three main components, which provide the magnetic field conditions for realizing fusion reaction confinement. Specifically, the toroidal field system, the polar field system and the central solenoid system coils are discussed, including the parameters, achievable remarkable outputs etc. With the support of the generating stable and intense magnetic field, there is no doubt that ITER will play an important role in guiding the commercialization of fusion. These results offer a guideline for future magnetic field design for future magnetic confinement fusion scenarios.

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



## WHAT PROGRAMS DOES GEC OFFER IN FEBRUARY 2023 SEMESTER?

In February, GEC launches a total of 83 online research programs in the areas of Finance, Business Analytics, Artificial Intelligence, Information System Management, Mathematics, and so on, partners with Shanghai Jiao Tong University to develop students' global competence through the GEC Global Competence Development Course, and provides personalized programs for Xidian University and Southwestern University of Finance and Economics. As the spring semester begins, we will continue to gather students, faculty, and staff for a wonderful academic experience, and more universities are expected to offer GEC Global Competence Courses in the coming months. The tables - [GEC 2023 February Program List](#), [Universities offering GEC Global Competence Development Courses in February 2023](#), [GEC Personalized Programs for Universities in February 2023](#) - show detailed information about the programs that GEC launches in February.

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

### FAQ for GEC Faculty

This month, we'd like to share a few most asked questions from our faculty here. Hope they can expel some of your doubts and confusions, and improve your experience with GEC Academy.

**Q: Why does GEC set teaching assistant(s) in addition to the Teaching Fellow?**

**A:** The role of a Teaching Assistant (TA) has two main functions. Firstly, TAs are part of the teaching team and are able to address basic questions from students. Professors and teaching fellows often have tight schedules and are unable to spend too much time on Q&A, so TAs are responsible for handling these inquiries. Only the more complex questions are directed to the professors and TFs. Secondly, TAs are also part of the administrative team, as course coordinators usually oversee multiple courses simultaneously and are unable to fully devote their attention to any one course. TAs assist with program operations, such as taking attendance and responses, filling out forms, recording meetings, and handling emergencies.

**Q: While it's not required for students to complete assignments in GEC programs, would it be appropriate to allocate 10% of the final grade to participation and 90% to the final project, even if the assignments are not graded?**

**A:** While assignments may not be mandatory for GEC programs, evaluating 90% of the final grade based solely on the final project might be too strict, as students' performance would depend entirely on that one assignment. It's important to value the learning process as well. To encourage students, we suggest breaking down the tasks into smaller assignments, quizzes, or reflection papers for the papers they read or find, and giving some weight to their overall scores. For example, we could allocate 20% of the grade to these smaller assignments to ensure students take them seriously and complete them on time. However, we value the opinions of our professors, and we would appreciate hearing your thoughts on this matter.

For your convenience, we put together a FAQ page on our official GEC website. Please click [HERE](#) to find answers to all common questions.

### 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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