

ORF sharing

Poon Pak Shing Billy

Year 4 (Chem Intensive)

Outline



Preparation



Research Experience



Conclusion

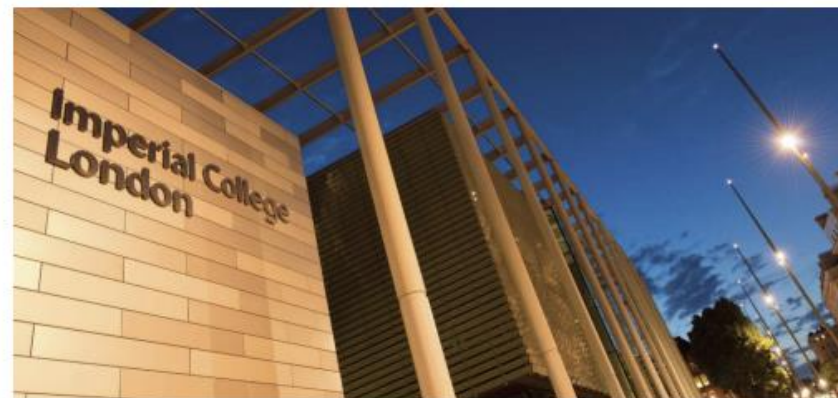


Preparation - Finding potential supervisors

1. Apply undergraduate summer research programs (e.g. SURF by Caltech/ HKU-ICL joint program)
2. Through your current host institution if you join an exchange program
3. Approach supervisors via emails

1. Apply undergraduate summer research programs

Summer Research Opportunities at Imperial College London—**Summer 2023**, London UK



Up to four places for Year 3 students to do summer research in the Department of Chemistry at Imperial College London will be available annually.

Imperial College London is **ranked 6th and 10th globally** in the QS World University Rankings and Times Higher Education World University representatively. Moreover, the Chemistry Department is one of the leading chemistry departments in the UK with state-of-the-art facilities in South Kensington and at the Molecular Sciences Research Hub at White City Campus, London.

As this internationalization experience is about research work, students must be proficient in chemistry, be in their third year of undergraduate studies, have a minimum overall cGPA of >3.0, and a good GPA in chemistry courses. There will be an interview. Students who are selected will apply for the Overseas Research Fellowship from the Faculty of Science for financial support. In addition, this experience can be credited for the CHEM4966 Chemistry Internship course. We aim to match the student's research interests/abilities with a suitable supervising professor at Imperial College.

Interested students to pursue research from July to August 2023 at Imperial College should send an **application email** to emilyleung@hku.hk by **December 30, 2022**, with subject line “#Imperial2023”, with application documents including (1) a copy of their latest transcript, which includes the courses taken in 2022-2023 Semester 1, and (2) a CV, which includes basic personal data and the prior activities or research work conducted by the students.

<https://chemistry.hku.hk/download/experiential/Summer%20Research%20Opportunities%20at%20ICL%202023%20R1.pdf>

1. Apply undergraduate summer research programs

Application Information

SURF

[Eligibility](#)

[Announcements of Opportunity](#)

[Application Information](#)

[FAQs](#)

Please read this entire page before beginning the application process!

Students must identify and contact a research mentor in advance of submitting an application. A mentor must agree to support your application, help you to develop and define a research project, and assist you in the writing of the research proposal.

This early interaction is a very important part of the application process. Visiting (non-Caltech) students usually have to accomplish this discussion via e-mail, phone, or Zoom. If a student is in the area, we encourage them to visit the campus and meet the mentor. Please refer to the [Finding a Mentor](#) page and [Tips for Meeting with a Potential Mentor](#) for additional information.

All application documents must be submitted directly to the SFP Online system. SURF applications are due on [February 22](#). We will contact the applicant's mentor for a confidential evaluation after the application is submitted. The application contains:

- An online application
- A research proposal written by the student and uploaded to the application
- An unofficial transcript for visiting (non-Caltech) applicants
- Two confidential letters of recommendation (at least one from a faculty member)

The Research Project

The most important factor in selecting a project is your enthusiasm for the project itself and for working with the mentor. Although most students seek projects in their options, SURF provides an opportunity to explore other fields. SURF is not "just a summer job"; a project should have significant intellectual and creative content. The benchmark for a suitable project is the potential for publication in the refereed literature.

The Proposal

The proposal should be as technical and specific as you can make it as it will be read by people in the field. It must outline what you plan to do, and why it will be useful. The outline consists of theoretical background and experimental techniques, how the work fits into the flow of the research in the field, and a work plan for the project. Proposals will be reviewed and evaluated by the mentor and by a member of the faculty in the project field. If you are a 2nd or 3rd time SURFer, your proposal should show a higher level of depth that would be expected of an experienced researcher. For further guidelines on writing an excellent proposal, access the [Proposal/Project Plans](#).

Recommendations

Recommendations are completed online with the application form. The online application will request recommender contact information from the student. The recommender will then be emailed directly and asked to submit their recommendation into the online system. If you have done a previous research project with a different mentor, that mentor should write one of your recommendations. Recommendations are also due on February 22 so submit your recommender information well in advance. **Your prospective Caltech mentor will complete a separate evaluation and should not write a letter of recommendation.**

Transcript

Visiting (non-Caltech) students need to submit an unofficial transcript at time of application. If an award is offered, you will be asked to have an official transcript mailed in a sealed envelope from the records office at your college or university.

Pros and Cons of Method 1

- Although it is a bridging agent to connect prof. and international students,
- Research topics might be fixed.

Announcements of Opportunity

SURF

[Eligibility](#)
[Announcements of Opportunity](#)
[Application Information](#)
[FAQs](#)

SURF: Announcements of Opportunity

Below are Announcements of Opportunity posted by Caltech faculty and JPL technical staff for the SURF program. Each AO indicates whether or not it is open to non-Caltech students. If an AO is NOT open to non-Caltech students, please DO NOT contact the mentor. Announcements of Opportunity are posted as they are received. Please check back regularly for new AO submissions!

Remember: This is just one way that you can go about identifying a suitable project and/or mentor. Click [here](#) for more tips on finding a mentor. Announcements for external summer programs are listed [here](#).

***Students applying for JPL projects should complete a SURF@JPL application instead of a "regular" SURF application.**

***Students pursuing opportunities at JPL must be U.S. citizens or U.S. permanent residents.**

Project Title	Disciplines	Mentor	Posted
Looking for high-energy astrophysical transients in NuSTAR data	Astrophysics, Astronomy	Murray Brightman	13-Jan-23
Comparing gene variant detection methods - a Data Science Approach	Data Science, Biology	Ashish Mahabai	12-Jan-23
An interdisciplinary project aimed at developing effective solutions and implementations for future challenges and opportunities	Environmental Science and Engineering, Astronomy	Yuk Yung	11-Jan-23
Diurnal simulations of Venus atmospheric chemistry	Multidisciplinary, Chemistry	Yuk Yung	11-Jan-23
Using Machine Learning to extract novel information from large and complex astronomical datasets	Astrophysics, Applied and Computational Mathematics	Darya Baron	11-Jan-23
Interrogating the vertical evolution of marine particulate organic matter via compound-specific isotope analysis	Geobiology	Alex Sessions	10-Jan-23
Modeling of river delta land build processes at the Mississippi River mouth	Geophysics, Civil Engineering	Michael Lamb	09-Jan-23
Constraining the capacity of sediment carrying organic carbon in Arctic rivers	Geochemistry, Geology	Michael Lamb	08-Jan-23
Permafrost Riverbank Erosion in Flume Experiments: Ablation or Entrainment-limited?	Geology, Mechanical Engineering, Environmental Science and Engineering	Michael Lamb	06-Jan-23
Marine depositional rivers	Geology, Planetary Science	Michael Lamb	06-Jan-23
Characterization of hazardous asteroids with thermal infrared data	Planetary Science, Astronomy	Joseph Masiero	05-Jan-23
Exploring the future of machine learning in astronomy	Astronomy, Data Science	Matthew Graham	05-Jan-23
Developing automated particle tracking methods to measure sediment settling velocity in river lab experiments	Engineering and Applied Science, Computer Science	Michael Lamb	04-Jan-23
Accelerating astrophysical transient classifiers with FPGAs	Astronomy, Data Science	Matthew Graham	03-Jan-23
A high resolution study of AGN variability with TESS	Astrophysics, Data Science	Matthew Graham	03-Jan-23
Liquid biopsy cell-free DNA detection of residual disease	Biology, Computer Science	Aadel	03-Jan-23

Things to pay attention on! - Time!

Deadlines of the application (there could be multiple rounds of interviews or documents to submit)

ORF: 1st round January 3 to February 24, 2023 (Friday)
2nd round February 25, 2023 to April 12, 2023 (Wednesday)

Visa duration (if you have participated in an exchange program already in the same country that you want to conduct your ORF)

Things to pay attention on! –Visa!

Buy and Show your return flight ticket to the border force officers

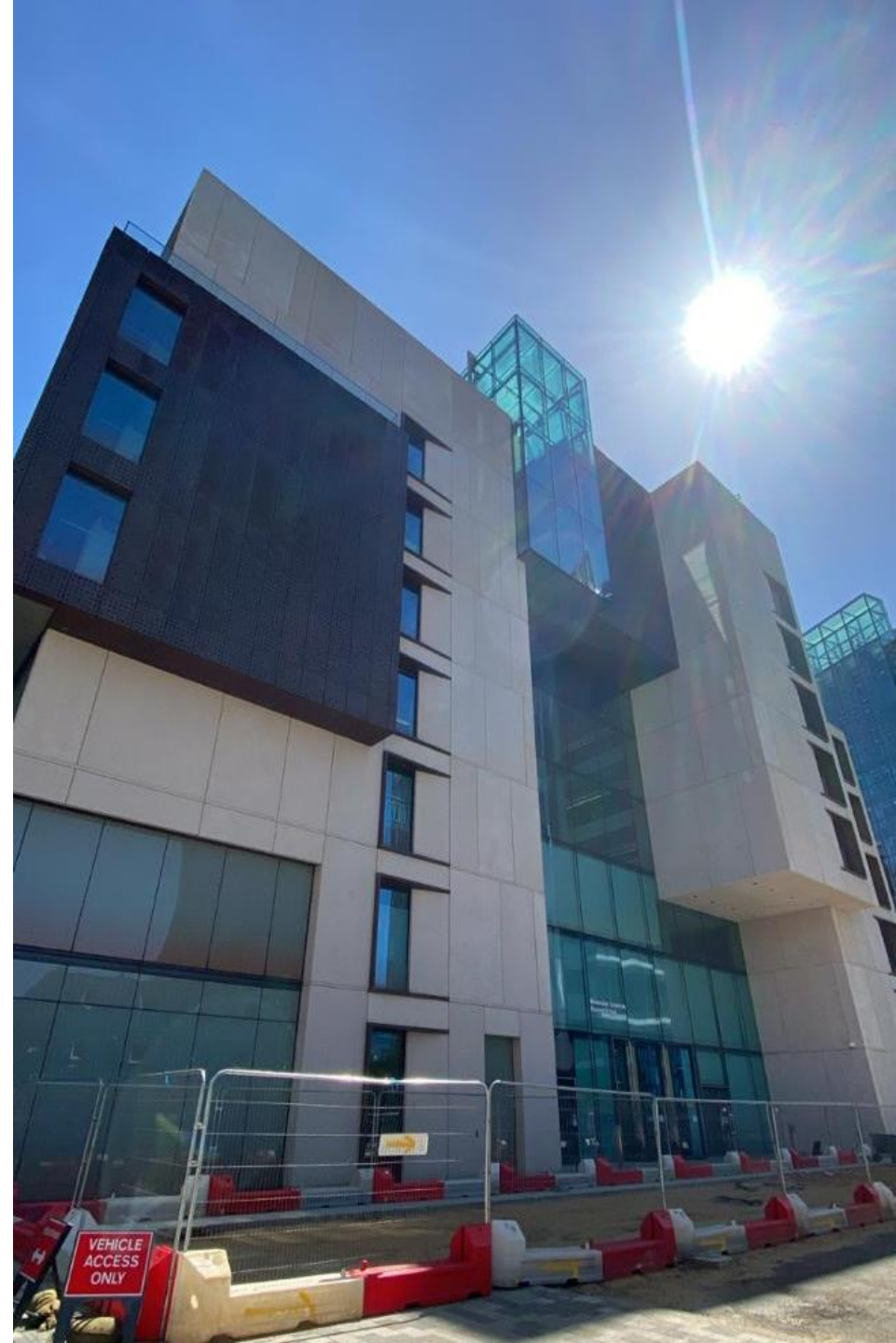
Prevent you from being a suspect of illegal immigrant

Things to pay attention on! – Money!

- As stipulated on the ORF offering letter, 'For students who are now or will be on exchange/visiting study overseas, *only ADDITIONAL travel cost incurred for participation in the ORF will be reimbursed, such as additional flight between their exchange/visiting host university/institution and the research host university/institution (if they will conduct research in a different institution), and the surcharge or difference in airfare due to change of original departure date. original departure date.'*

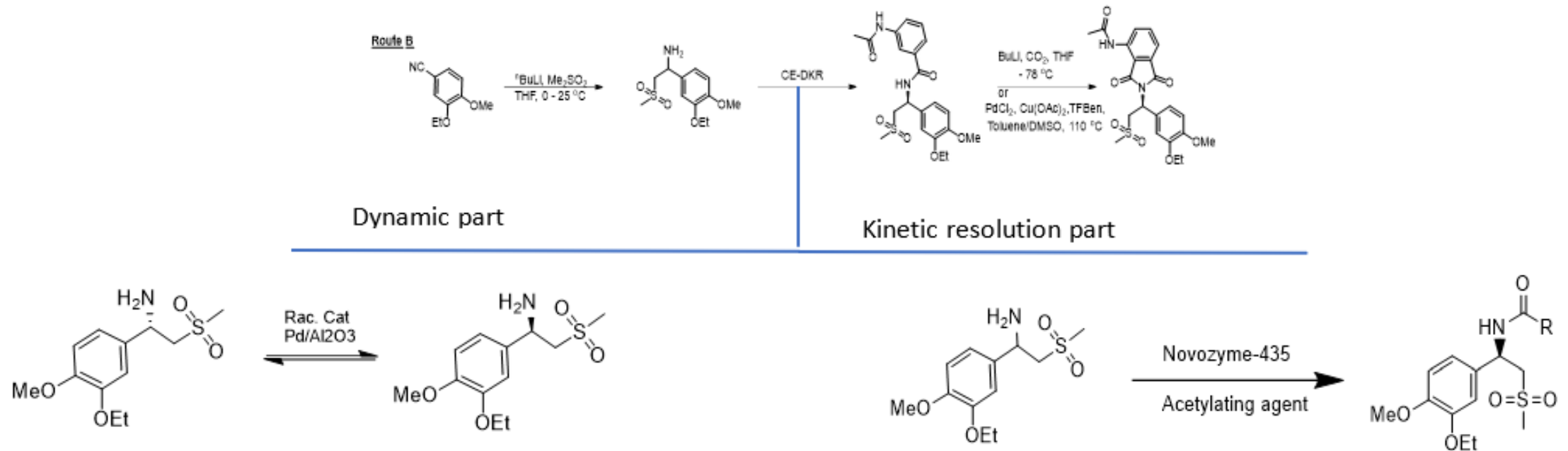
Research Experience

- HKU-ICL joint program
- White City Campus
- supervised by Prof. Mimi Hii
- An efficient synthesis of Apremilast via dynamic kinetic resolution



An efficient synthesis of Apremilast via dynamic kinetic resolution

- Apremilast is a drug to treat psoriasis



Advanced Machines

- Multiple NMR machines (Bruker Avanced III 600 MHz NMR)
- EasyMax 102 Advanced Thermostat system

(allows precise parameter control high-quality process data providing key information and records of chemical reactions)

(-40 °C - 180 °C)

(Half a million)



Comfortable Workplace



Conclusion



Not only learning how to
conduct research



But also learning how to
adapt to unfamiliar
environment

Thank you

