呂桐睿老師實驗室

Part 1 研究主題與核心科學 (Research Focus)

Q1-1 What are the core scientific questions addressed by this laboratory's research topics?

Ans: We are interested in the role of glycans in microbial disease and synthesize chemical tools to address this issue. We are also interested in how phages recognize carbohydrate to infect bacteria

Q1-2 What is the current significance or potential application value of this research field?

Ans: There are widespread applications in health and disease. Glycoscience is a frontier area of biomedical research.

Q1-3 What types of research projects do summer students usually participate in? Do they work on independent small projects or assist with ongoing projects?

Ans: Students work closely with a senior student or postdoc and work on a semi-independent project related to their mentor's project.

Q1-4 What expertise or skills can summer students learn?

Ans: Depending on the project either synthetic chemistry and spectroscopy or phage isolation, production, binding assays and protein expression and purification.

Part 2 實驗室運作與指導方式 (Mentorship)

Q2-1 Who directly supervises summer students?

Ans: They are directly supervised by a senior student or postdoc; occasionally by a research assistant.

Q2-2 What is the PI's approach to teaching research? How will the mentor guide summer students (e.g., guiding their thinking vs. hands-on instruction)?

Ans: Interns get hand-on instruction from their mentor and are encouraged to think to address their research projects. They meet with the PI formally several times during internship and informally on a more or less daily basis.

Q2-3 Approximately how many summer students are accepted each year?

Ans: 1–2

Q2-4 What expectations does the laboratory have for summer students?

Ans: Enthusiasm, a desire to learn, willingness to work hard and follow safety rules, attention to detail and a positive attitude.

Q2-5 During the two-month period, what research concepts or experiences does the laboratory hope to provide to summer students?

Ans: Development of lab skills (see above), learning how to work in an interdisciplinary laboratory, communicate their work and participate in group social activities.

Part 3 能力需求與錄取評核 (Requirements & Selection)

Q3-1 What foundational courses or academic background are recommended for applying to this project?

Ans: Organic chemistry, biochemistry and microbiology

Q3-2 Is prior research or laboratory experience required? If not, can students without experience still apply?

Ans: Not necessary. Project will be tailored to the studnent's experience.

Q3-3 What criteria does the PI use to determine whether a student is a "good fit"?

Ans: Research background interview performance.

Q3-4 What are the evaluation criteria for admission (e.g., weight of grades, content of the statement of purpose)?

Ans: No set formula/weighting.

Q3-5 Is an interview required? If so, what qualities are emphasized during the interview?

Ans: Yes. Enthusiasm, interest, ability to communicate (in English).

Q3-6 Would first- or second-year students, or applicants from different academic backgrounds/majors, face any difficulties when applying?

Ans: Students with less than two years of university are usually at a disadvantage, but not always.

Part 4 技術學習與能力發展 (Skills & Growth)

Q4-1 What specific experimental techniques can students learn during the internship?

Ans: Depends on the project

Q4-2 Will students have the opportunity to work with or observe advanced instruments during the internship?

Ans: Yes, to the degree this is allowed by the various facilities at AS.

Q4-3 After completing the internship, what soft skills will students develop (e.g., designing a complete research workflow independently, analyzing specific types of data)?

Ans: Data analysis, communication, independent thought.