Session 4:
The Application and Decision Process, Part II

Thursday, October 12, 2023, 7pm ET

CSGRAD4US & mentoring program

Computer and Information Science and Engineering Graduate Fellowships

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Computing Research Association
Widening Participation

NSF

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Education

REMINDER!!
Please complete the CSGrad4US Entry survey administered by our external evaluator (Center for Evaluation & Research for STEM Equity @ UW)

email from

From Name: Erin Carll

From Email: noreply@qemailserver.com

Reply Email: ecarll@uw.edu

Subject: CSGrad4US Evaluation Survey

Closes on Sunday, October 15

The Application and Decision Process, Part II

Previous sessions
- Preparing a strong PhD application (general guidelines)
- Identify what you are looking for in a PhD program
- Identify potentially suitable programs
- Understand the admissions process

Session 4
- Revisit
  - Contacting a possible adviser
  - Identifying letter writers
- Choices to make: research area, adviser, research topic
- The importance of campus visits

Contacting Potential Advisors

Very common: Applicants are accepted if a faculty commits to advise.

What should I do?

- Explore and identify programs <u>and</u> faculty in your areas of interest

Before reaching out to faculty: Do your homework!

- Look out for specific instructions on their webpage about what to do **before** contacting them.

- Are you familiar with their recent research activities?

- Have you reviewed samples of their papers or presentations?

- What work interests you the most?

- **Not:** Dear X, I am very interested in your research area …

Contacting Potential Advisors (2)

Send an email
- Include your CV and (briefly) introduce yourself
- State that you have a fellowship (include a 1-pager about CSGrad4US)
- If you graduated 5+ years ago, consider highlighting relevant working experience
- Talk to your coach on what to highlight in the email

Two options when to contact
1. Before you apply
    - You get a sense of interest and whether it is a good match.
    - You may or may not apply
2. After you have applied
    - You should have mentioned the name in the application. They most likely have read the application before talking to you

Contacting Potential Advisors (3)

- What if I don't get a reply?
  - Mail got lost, not taking on new students, not interested
  - Can send a reminder, but no more
- What if their webpage states "Do not contact", "Put my name into your application"?
  - Follow the guidance
- What if their webpage is quite outdated?
  - It happens
  - Publications and some activities can be found in other ways (e.g., Google scholar)

Contacting Potential Advisors

After your email …

- If you receive a positive response:

    - Request a meeting (call or Zoom)

    - Prepare to talk about <u>their</u> research and <u>your</u> experience/interests

If your letter writers (or coach or area adviser) know faculty of interest, ask whether they would make contact and advocate for you

CS versus I-school: Expected background

Applying to a CS program

- The majority of the students will have a BS/BE in CS/CE
- If background is equivalent to a minor in CS, some additional coursework may be recommended
- An admitted student can generally switch advisers

Applying to an I-school program

- I-schools contain diverse and broad subareas, with each subarea generally having its own background expectations/skills of admitted PhD students
- Identifying the faculty/subareas of research interests is crucial
  - Explicitly asked to identify multiple faculty / interests in application
- Reach out to the faculty about background expectations for admissions and working with them
  - Focus your application on those characteristics

CISE Programs @ UW

- Paul G Allen School of Computer Science & Engineering
  - Offers PhD in Computer Science
  - admission is highly competitive; about 5% acceptance rate with 3000 applications
- Information School
  - PhD degree in Information Science; requirements are flexible and CISE content depends on research area
  - about 17% acceptance rate with 150 applications
  - Faculty has diverse backgrounds
- Department of Human Centered Design and Engineering
  - Contains CISE research areas and CISE faculty (e.g., Kate Starbird)
  - A Department in the College of Engineering
- Electrical and Computer Engineering
  - Contains CISE research areas and CISE faculty

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CISE Programs @UC Irvine

- [Bren School of Information and Computer Science](#)
  - 3 departments: Computer Science, Informatics, and Statistics
  - PhD programs in CS and Informatics are CISE; Stat is not CISE
- PhD Admission to the Bren School
  - CS and Informatics have faculty with joint appointments
  - PhD admission is separate (each department has 2 PhD programs).
  - Compared to CS, [Informatics](#) has very [different course requirements](#) and a different qualifier system
- [EECS Department](#) in School of Engineering
  - The CS part of EECS offers a CISE PhD program; other parts of EECS may not (circuits and systems, EE systems)
  - "*Professor of Electrical Engineering and Computer Science*" refers to a person in EECS, not CS

Does the PhD program structure matter?

Need/want more background and more breadth?

- Choose a program with more required courses

Want to explore different research areas?

- Choose a program that gives flexibility on required breadth areas

Want to focus on research right away?

- Choose a program with fewer required courses

Already have an MS?

- Can credits be transferred?

Want to gain teaching experience?

- Are graduate students allowed to teach?

No program has a really easy to explore expected background, PhD milestone and requirement description.

More on Letter Writers

- Some letter writers will ask you which schools you plan to apply to before they agree to write a letter
- Academics know how to submit recommendation letters
  - May be new or unfamiliar for a colleague or boss
- Letter writers should know you/remember you. Help them remember!
- Many faculty keep records
  - Digital records (e.g., emails, Gradescope submissions)
- Top performance in an advanced course is often meaningful

How to Ask for a Recommendation (from Session 2)

- ***Ask at least a month in advance***
- ***Ask if they can write a strong, positive letter and give them a way to say "no"***
  - *"I'm applying to graduate school. Would you feel comfortable writing a positive letter for me? If so, I'd be grateful. If you are not able to do this for any reason, I'll certainly understand."*
- ***Provide "fodder" for their letter***
  - Application (resume, statement of purpose, transcript)
  - Reminder of significant/shared events that you participated in and excelled at
  - We will provide a letter describing the Fellowship
  - Offer to have a conversation to update them on your career and goals
- ***Provide industry writers with guidance on what to include***
  - Concrete experiences and projects
  - Strengths and weaknesses
  - Personal characteristics - independence, creativity, motivation, follow-through, communication, leadership, teamwork, etc.
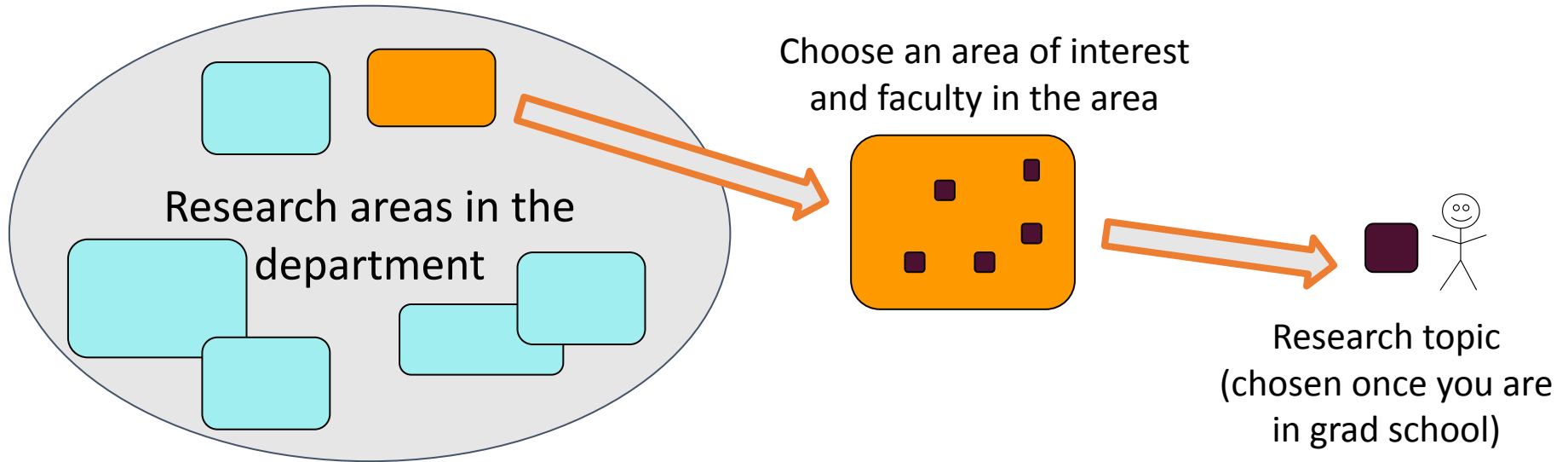
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Questions?
Clarifications?

Most important decisions a PhD student makes start at application time

Research areas in the department

Choose an area of interest and faculty in the area

Research topic
(chosen once you are in grad school)

Choose a research (sub)area, an adviser, a research topic

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Common research areas

Security / Privacy / Information Assurance

Social Computing / Social Informatics

Human-Computer Interaction

Artificial Intelligence / Machine Learning

Robotics / Vision

Theory and Algorithms

Networking

Software Engineering

Quantum Computing

Graphics / Visualization

Operating Systems

High-Performance Computing

Computing Education

Scientific / Numerical Computing

Programming Languages / Compilers

Information Systems

Databases / Information Retrieval

Information Science

Informatics: Bioinformatics / Other Science

Hardware / Architecture

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Choosing a Research Area
(at application time and/or in year 1)

- What research topics excite you and why?
- How much knowledge and experience do you already have in that area?
- How strong are the department and research groups in this area?
- How many faculty members work in this area? What are their academic ranks?
- Is interest in the research area existing and growing?

Choosing a Research Advisor

- Renowned vs. beginning researchers
- Do your homework! Check out the following for a potential advisor:
  - How many students have graduated and when did they graduate?
  - How many papers (and where) did students publish with the advisor?
  - Where are those students now (academia, industry)?
- Determine if PhD students do industry internships that lead to publications
- Talk to students working with potential advisor
- Read faculty members' papers and watch research talks online
- Talk to faculty on Zoom

Choosing a Research Advisor (2)

- What is the advisors collaboration style like?
  - How responsive are they to email or stopping by their office?
- What is the frequency and duration of group and 1:1 meetings?
- Do students work on individual projects or in groups? Are there post-docs?
- Do they have funding for students as RAs and conference travel?
- Are they taking on new students? Taking a leave?
- How do they decide to accept new students?
- Do they co-advise students with other faculty?
- More viewpoints in a PhD Adviser Guide from CS@Columbia

Choosing a Research Advisor / Group

Research groups can have different organizations, interactions, and collaborations among the students and post-docs.

Common questions include

- How do new students learn about research?
- How do individual students find their individual thesis topics?
- How do group members collaborate?
- Do group members do peer-mentoring, especially for junior members?
- How is credit assigned on collaborative papers?

Breakout Session

What adviser-student interaction style do you feel will work best for you?

How are your choices influenced by supervisors you had?

Your personality?

Examples:

- Hands-off or hands-on adviser?
- Develop your skills independently or with peers?
- Work better alone or in a group?
- Self-motivated or want goals set?
- What is most important to you?

Choosing a Research Topic

- Want to be passionate about it
- Want advisor to be committed to it
- Want topic to still be of community interest (and funded) in 3-4 years
- Want a topic where you can make significant contributions over 3-4 years
  - avoid incremental or exceptionally difficult problems
  - potential for the future is important for an academic career
- Want a topic for which the needed resources are available

Note: An adviser may make an RA offer to work on a specific funded research topic. Can be a difficult decision for a student

Choosing a Research Topic (2)

- Don't state your research topic at the time of your application
  - okay to list topics of interest
- An adviser may make an RA offer to a student to work on a specific funded research topic.
  - can be a difficult decision for a student
- Changing adviser?
  - unclear what happens to the research topic
  - will be discussed more in session 5

Review of CSGrad4US Mentee Timeline

- Undergrad degree in CS or related area
- Industrial experiences
- Interest in a PhD

❏ Ask letter writers
❏ Give them resume, personal statement & transcripts
❏ Finalize application materials and get feedback
❏ Submit applications

| Before being selected as a Fellow | ➤ | Early Fall 2023 | ➤ | Late Fall of 2023 | ➤ | Spring 2024 |
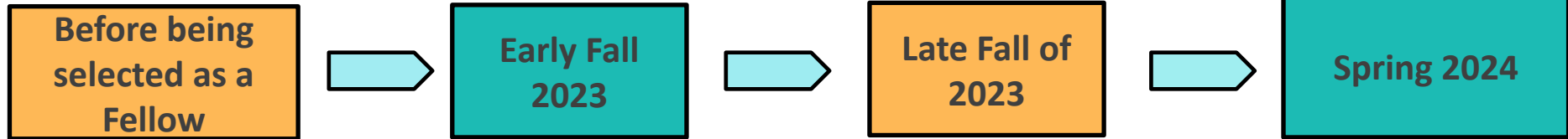
❏ Update your resume
❏ Draft personal statement
❏ Identify letter writers
❏ Select schools to apply to and identify possible advisers
❏ If needed, study for and take GREs

- **Hear from schools**
- **Visit schools**
- Make a decision!

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A Typical Research Timeline

Foundational coursework to prepare for research.
Join a lab with advisor & initial project.

Year 1

Obtain preliminary results and publish papers. Formulate PhD research plan. Identify PhD committee. Begin writing proposal.

Year 2

Complete a majority of your coursework.
Take qualifying exam.
Identify research area.
Potentially earn Master's degree "along the way".

Year 3

Continue to publish.
Write & defend dissertation. Prepare and interview for next job.

Year 4

Complete and defend PhD proposal.
Continue with research and publishing your results. Identify your future career path.

Years 5-6

see also **https://cra.org/csgrad4us/#Guidance**

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Deciding Between Admissions Offers?

You should go on campus visits before making a decision…..

Campus Visits
(Winter/early Spring semester)

Go on Campus Visits!

- Many schools invite applicants for a campus visit (most after admission, some before admission decisions)

- Make use of it (often free) and meet people and see the department!

- If you get too many invitations, prioritize based on your factors. Ask your coach for guidance.

- If you can't make a school's scheduled "visit day", ask if you can visit some other time.

Campus Visit Checklist

- ☑ Book your accommodations through the university (if possible)

- ☑ Set up meetings with faculty and grad student staff

- ☑ Ask to meet with Ph.D. students

- ☑ If you have special needs, meet with the appropriate campus office

- ☑ Inform yourself about the department before the visit

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Meetings with Faculty in your Area(s) of Interest

- Explain your NSF Fellowship
  - fellowship support for 3 years
  - institution provides support for remaining 2-3 years
- What projects are in their current/near term agenda?
- Do they expect to be taking on new students?
- What is the departmental culture?

More questions to consider asking

- Do you consider yourself more of a 'hands-on' or 'hands-off' advisor?
- How is the lab structured? Are there research collaborations between students in your group?
- How often do you meet your students? Individually or in in groups? What is typically discussed?
- What progress do you generally expect from a student in the course of a semester?
- What projects are in your current/near term agenda?
- What do you do when students are struggling?
- Do you expect to be taking on new students? What factors will affect whether or not you take a student?
- How do you integrate new students into the lab?
- Do you think our research interests are a good match?
- In general, do you tend to give your students projects/topics or have them select their own?
- Are there any specific courses that students in your lab take?
- What do your students do during summers?
- Are there other faculty in the department you think I'd be a good match for?

Meetings with Graduate Program Director and Support Staff

- What are the PhD requirements and expected timeline?

- What is the typical semester course load?

- What happens when a student has difficulty finding an advisor/funding?

Meetings with Graduate Students

Find out about the culture within the department and their labs

- Academic environment
- Support for interdisciplinary work
- Mentoring styles
- Professional development
- Career support (internships and initial positions)
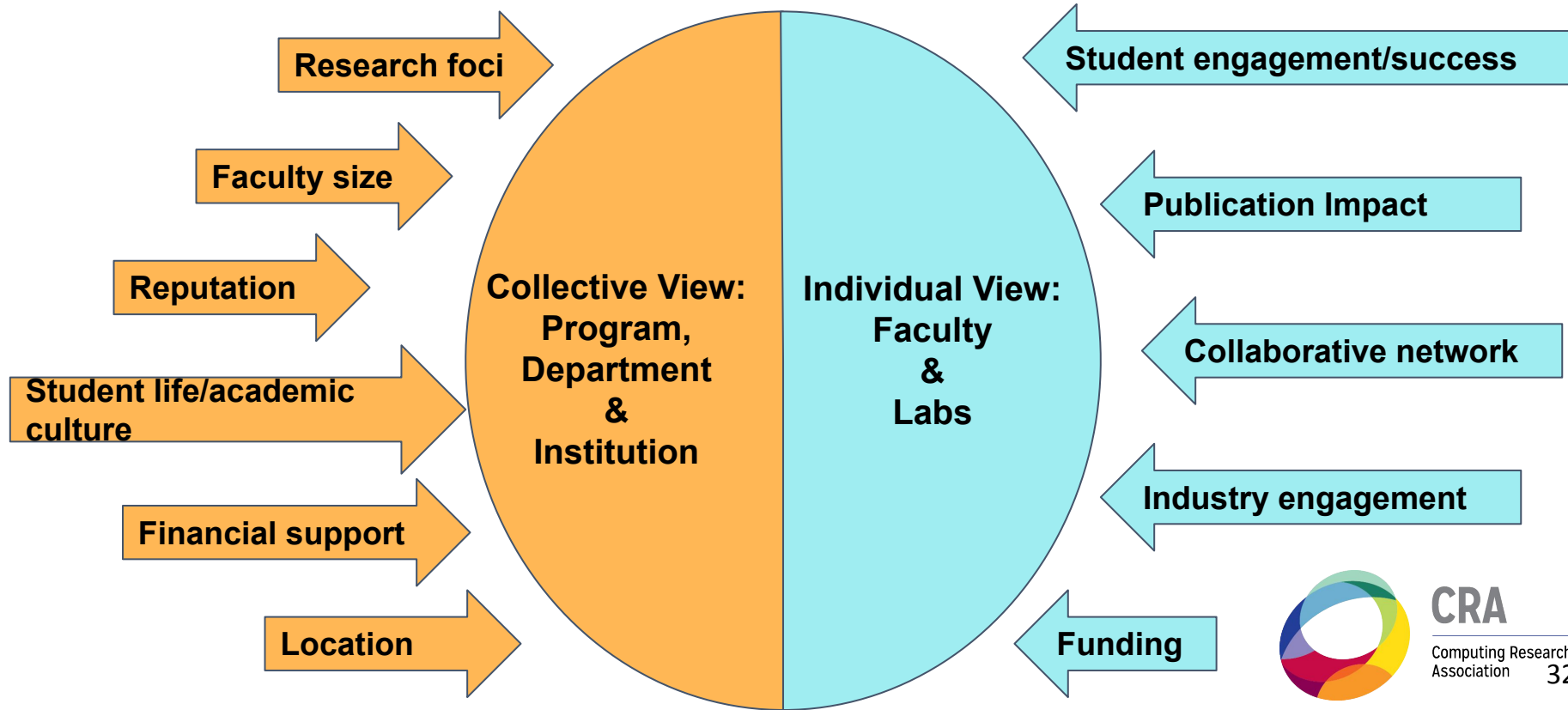- Social environment

Living situation

- Cost of living
- Quality of life

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Revisit the Factors You Previously Considered

Research foci

Faculty size

Reputation

Student life/academic culture

Financial support

Location

Collective View: Program, Department & Institution

Individual View: Faculty & Labs

Student engagement/success

Publication Impact

Collaborative network

Industry engagement

Funding

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Thank You's and Regrets

- Send a note of appreciation to every person (faculty, staff or student) who **notably** interacted with you

- Ask faculty any outstanding questions
  - When will they expect to know if they are interested and able to accept you into their lab?
  - Provide feedback if you have made some firm decisions
    - would definitely accept if you receive an offer
    - would be very interested if you receive an offer
    - enjoyed your visit and look forward to hearing from them
    - enjoyed your visit, but have decided to accept another offer
  - Always be honest!
    - It is a small world. You will see many of these people again and again
- Once you accept an offer, let other departments know asap

Finally, **Document** Your Efforts

- Each program you investigated or plan to investigate
    - Summarize the important information
        - pros and cons, size, …
- For each program, which faculty look like potential advisors
    - Summarize the important information
        - pros and cons, research areas, productivity
- For each potential advisor
    - Relevant info about their research areas, productivity, funding, etc.
- Status of your application
    - Accepted/Not accepted/Didn't apply; visit plans
- Recommend a spreadsheet that you share with your coach

Review all application-related material we covered

You should have questions!
Talk to your coach, come to office hours.
Keep working on your application material

Coming up next ...

Panel 2: Q&A with Cohort 1 and 2 CSGrad4US Fellows

Thursday, October 19, 2023, 7pm

Panel 3: What I Wish I had Known Before Attending Graduate School

Thursday, November 2, 2023, 7pm