

Sources and Resources

- Future Faculty Workshops
 - [MIT Rising Stars Program](#) (attended October 2021)
 - [NextProf Nexus Workshop](#) (attended November 2021)
 - [WiscProf Workshop](#)
 - [New England Future Faculty Workshop](#)
- [Preparing Future Faculty](#) – guide written for American Institute of Chemical Engineers (AIChE)
- [TheProfessorIsIn.com](#) – blog about academic positions, applications, and nonsense. Includes more of the “soft” topics, such as “what should I wear to an interview?”
- [The Academic Job Search Handbook](#)

Choosing Job(s) to Apply to

Landscape of US Research Institutions



https://en.wikipedia.org/wiki/List_of_research_universities_in_the_United_States

| | R1 University Doctoral Universities – Very high research activity | R2 University Doctoral Universities – High research activity |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public State-owned, funded, and operated <i>cannot have a religious affiliation</i> | Univ. of Wisconsin Univ. of California Univ. of Minnesota UIUC Penn. State Univ. Georgia Tech | Univ. of Alaska Univ. of Idaho Univ. of Vermont Boise State Univ. Tennessee State Univ. Eastern Michigan Univ. |
| Private Privately-owned, funded, and operated <i>can be for-profit or non-profit, religious or secular</i> | CalTech MIT Yale Univ. Harvard Univ. Univ. of Chicago Univ. of Penn. New York Univ. Boston Univ. | WPI Howard Univ. Lehigh Univ. Brigham Young Univ. American University Univ. of New England Univ. of San Diego Univ. of Dayton |

Types of Professors (in the USA, but analogies exist everywhere)

| Title | Responsibilities |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Professor | What Michele does but typically at 0.75 speed: Conducting research, advising students, course design and instruction, writing grants, service |
| Lecturer / Teaching Professor | Course design and instruction, accreditation, serving on academic committees |
| Research Professor | Research, typically not funded by the university but via grants or university institutes |
| Adjunct Professor | Teaching, typically assumed to be a part-time position while having full-time employment elsewhere |

| Decorator | Meaning |
|---------------------------|----------------------------------------------------------------------------------------------|
| Assistant <> | Pre-tenure, typically 0-6 years after being hired |
| Associate <> | (Typically) with tenure, typically 6-N years after being hired |
| <> | Full professor with global recognition, will often take leadership roles (Dean, Chair, etc.) |
| Emeritus <> | Retired professor with a continued relationship with a university |

Finding Job Calls

- Specific department or university websites
- Academic position aggregating sites:
 - interfolio.com
 - academicpositions.com
 - higheredjobs.com
- Professional Societies:
 - <https://jobs.mrs.org/>
 - <https://careerengineer.aiche.org/>
- list-servs:
 - <https://psi-k.net/list/>
 - <http://www1.maths.leeds.ac.uk/~djread/softmatter.html>

Reading the Job Call

Your application packet will likely be somewhat formed before you read the job call! Your job is to tailor it to the specific posting.

The University of California, Sunnydale's **Department of Materials Science and Engineering** (UCS-DMSE) seeks applicants for **multiple tenure-track** faculty positions with preference for the **assistant professor** level. We have particular interest in **computational materials science**, including data science and artificial intelligence, advanced materials characterization, materials for energy, quantum materials, and biomaterials, but **candidates in all areas will be considered.**

department

number

tenure-eligibility

rank (assistant, associate, open-rank...)

preferred speciality

flexibility

Questions to Ask Yourself:

- Where would I be open to living?
- Does this location have employment opportunities for my partner/spouse?
- What responsibilities would I like my job to include?
- What kind(s) of departments could I see myself joining? (Subject, size, collaborativeness)

Advice I've Heard:

Apply broadly. Do not be overly picky until you are in a position to do.

Do not waste anyone's time. Do not apply to a job unless you would be willing to take it (although this can change).

15 applications is a good number.

Apply to every opening you can.

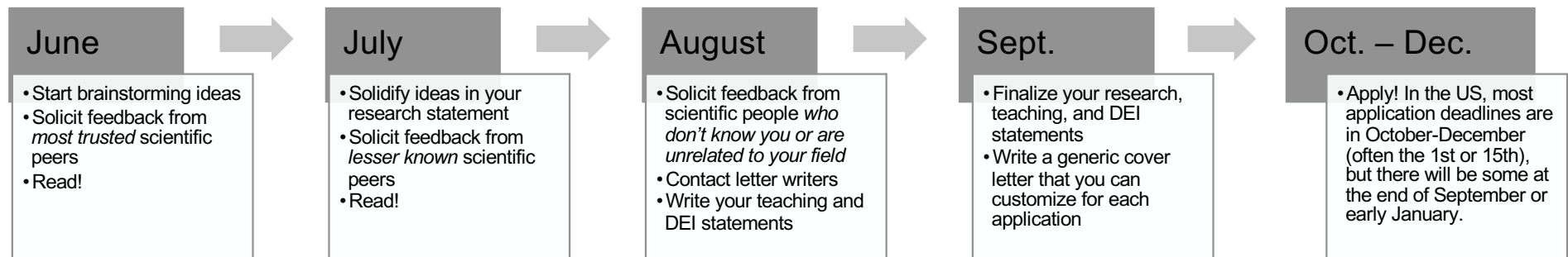
Be yourself. If the ad asks for X but you don't do X, don't pretend you do X.

It takes most candidates 2 cycles to find a job.

Know that prestigious places will get 10X the applications of smaller universities. Adjust expectations accordingly.

Preparing your Application

US Timeline of Applying



- Have an honest conversation with your employer and whoever else the process might affect.
- For me, applying and getting a faculty job was a **9-month process**.
- In the **US**, applications occur on a set “**cycle**”, whereas in **Europe** they can open **year-round**.

Components of an Application: Research Statement

A 3-6 page document explaining the scientific problems you will tackle in your research group.

| Anatomy of a Research Statement |
|---------------------------------------------------------------------------------------------|
| Executive Summary The most important page, and sometimes the only one read |
| Brief Background |
| Aim 1 |
| Aim 2 |
| Aim 3 |
| Future Applications, Cooperative Efforts, and Collaborations |
| Funding |

Best Advice I've Heard:

A research statement is a delicate balance of being understandable to most scientists and impressive to those in your topic area.

Read your statement like a reviewer. What are they supposed to pick up in 30 seconds? 1 minute? 5 minutes?

What is your "unfair advantage"? How will you differentiate yourself from former advisors?

Think in terms of big-picture ideas and directions, not smaller-picture problems and projects.

Show enough to demonstrate that you know what you're talking about, but don't go overboard on details.

Components of an Application: Teaching Statement

A 1-3 page document explaining your teaching philosophy, experience, and goals for teaching.

| Anatomy of a Teaching Statement | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Teaching Philosophy How do you approach teaching? Why do you want to teach? How do you create an environment conducive to learning? | |
| Methods and Examples Do you like to assign reading? Problem sets? Quizzes? Tests? What has worked in the past? What experiences have you learned from? | |
| What existing classes would you teach? | |
| What classes would you develop? | |

Best Advice I've Heard:

If you don't have formal teaching experience, don't pretend that you do. State what experience you do have and how you think that will translate to the classroom.

Think about how you assess your effectiveness in the classroom: what are your objectives for students? what are your assessment tools?

Spend 5-10 minutes checking out a university's course catalog – including class numbers and specific titles shows commitment to the university.

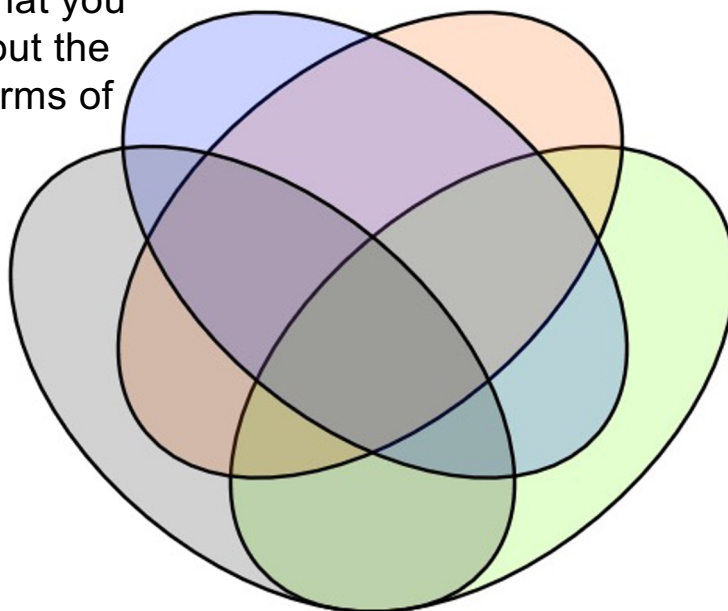
If you have room, include your teaching role models! Including stories and anecdotes helps readers relate and know you're not just spewing off nonsense.

Components of an Application: Diversity Statement

A 1-2 page document explaining your views and commitment to creating a diverse, equitable, and inclusive academic environment

An opportunity to show that you understand and care about the importance of multiple forms of diversity in STEM

Diversity Statement Workshop
Rising Stars 2021
Friday, October 22nd, 2021
<https://mitcommlab.mit.edu/cheme/>



Best Advice I've Heard:

It is not enough to say "I am a member of XXX under-privileged group."

Educate yourself! There are always new framings of DEI, and the work is never done.

You don't need to solve all of the problems. Show how you are passionate about one or two and how you plan to address them.

Be sure to read your statement with a critical lens for implicit bias. Are you equating racial minoritization with poverty? Discussing diversity only in terms of value?

If you discuss specific students or anecdotes, it's good form to ask for permission beforehand.

Components of an Application: Curriculum Vitae (CV)

A multi-page, neutral document outlining all relevant education, experience, and accomplishments.

| | |
|----------------------------------------------------------|---------------------------------------|
| <u>Contact Information</u> | |
| <u>Education</u> | |
| <u>Professional Experience</u> | |
| Publications | |
| Honors, Fellowships, and Awards | |
| Grants and Funding | |
| Seminars, Conference Presentations, and Workshops | |
| Teaching, Mentoring, and Service | |
| Professional Skills (incl. Languages) | Professional Affiliations / Societies |
| Contributions to OSS | Personal Interests |

Resources for Academic CVs:

<https://theprofessorisin.com/2016/08/19/dr-karens-rules-of-the-academic-cv/>

<https://www.careers.ox.ac.uk/cvs>

<https://www.imperial.ac.uk/media/imperial-college/administration-and-support-services/careers-service/public/the-application-process/How-to-Write-an-Academic-CV.pdf>

CoSMo Template:

<https://github.com/lab-cosmo/cosmo-tools/tree/master/tex/cvstyle>

Tip:

If you are writing for the US, do **NOT** include a photo or include personal information such as marital status or number of children.

Components of an Application: Cover Letter

A 1-2 page document introducing yourself to the hiring committee and stating why you want this job.

| | |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Introduction & Credentials | With this letter, I am enthusiastically submitting my application for the position of Tenure-Track Assistant Professor in Bibbly Bobbly Timey Whimey Things at the University of Gallifrey . I earned a Ph.D. in Defense Against the Dark Arts from the Beauxbatons Academy of Magic , conducting my doctoral research with Prof. Olympe Maxime . Currently, I am serving as a postdoctoral researcher in the Xavier Institute with Prof. Orono Munroe . |
| Why do you want this job? | This is an excellent sentence where I directly appeal to why I would fit at this university, above all other universities. |
| Future Plans | My long-term research goal is to ... This will lead to ... In the past few decades, ... By doing ..., I believe that we can propel our community forward in terms of ... |
| Background & Accomplishments | |
| Other Things of Relevance | |

Best Advice I've Heard:

This is not the time to be humble. State your accomplishments factually and neutrally.

This will be *scanned*, not read. Organize it so that the first sentence of each paragraph gives a good idea of the bulk of the paragraph.

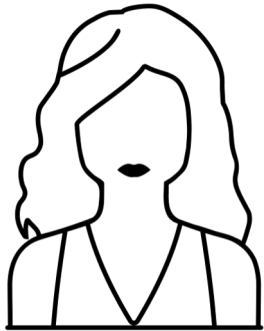
Tailor your cover letter as specifically as you can. Why are you the right person for *this* job?

When talking about their university, don't tell them what they already know (e.g. "I want to apply to XXX because it's the best in the world").

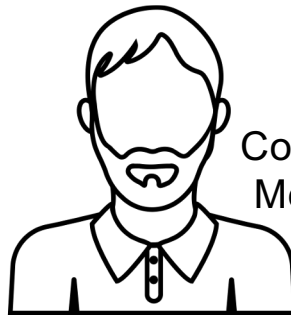
Take ownership in statements about previous work. Don't say "Under Prof. XX, I did YY", but rather "Alongside Prof. XX, I did YY."

Components of an Application: References

The contact information of 3-5 people who can speak to your credentials, experience, and character.



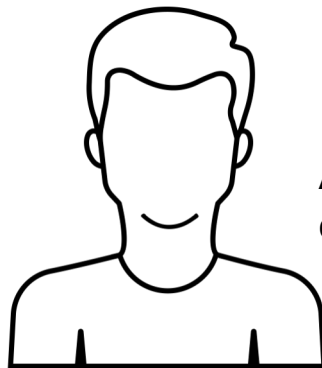
Your
PhD
Advisor



Committee
Members



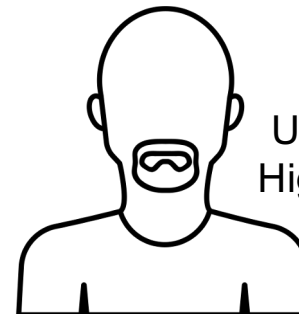
Previous
Instructors



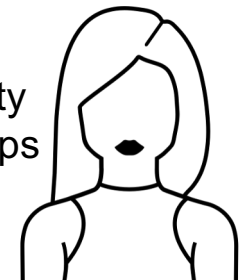
Your
Postdoc
Advisor(s)
or Current
Boss



Previous
Employers



University
Higher-Ups



Components of an Application: References

The contact information of 3-5 people who can speak to your credentials, experience, and character.



Sharon Glotzer

Your
PhD
Advisor

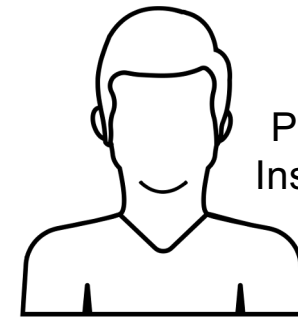


Nicholas Kotov

Committee
Members



Greg van Anders



Previous
Instructors



Michele Ceriotti

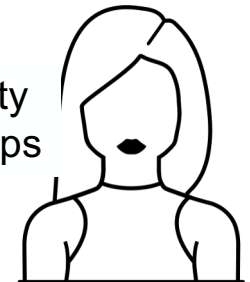
Your
Postdoc
Advisor(s)
or Current
Boss

Previous
Employers



Daniel Burkey

University
Higher-Ups



Tailoring your Application

For programs that you are especially keen on, it is important to customize your application package.

| Questions to Ask Yourself |
|----------------------------------------------------------------------------------|
| Why this university? |
| Who would be my primary collaborators? |
| What are students particularly strong in at this university? |
| Do you have a personal connection to this university? |
| What would you teach here? What is the course curriculum missing? |
| How do I specifically fit the job posting? |
| Do you know who will be reading your package? |
| What sort of facilities are there at the university that would enable your work? |

Best Advice I've Heard:

Reach out to the person at the university with the greatest overlap to discuss areas of divergence and collaboration.

Flatter the students, not the professors.

Everyone wants to live in a beautiful place. Why do you want to be there?

When talking about their university, don't tell them what they already know (e.g. "I want to apply to XXX because it's the best in the world").

Don't customize *too* much, because at the end of the day, you may not be right for what they're looking for.

Applying!

- Great! It's time to apply.
- Give your references a list of places you are applying to. Some places will not ask for letters until later on in the process, but your referees should know where to anticipate contact from.
- Spell-check *everything* and make sure you are submitting what is asked of you.
- Submit!

Advice I've Heard:

Submit as late as you can and take all the time that you can.

Submit early. The committee checks applications on a rolling basis, so they will spend more time on yours than those submitted at the deadline.

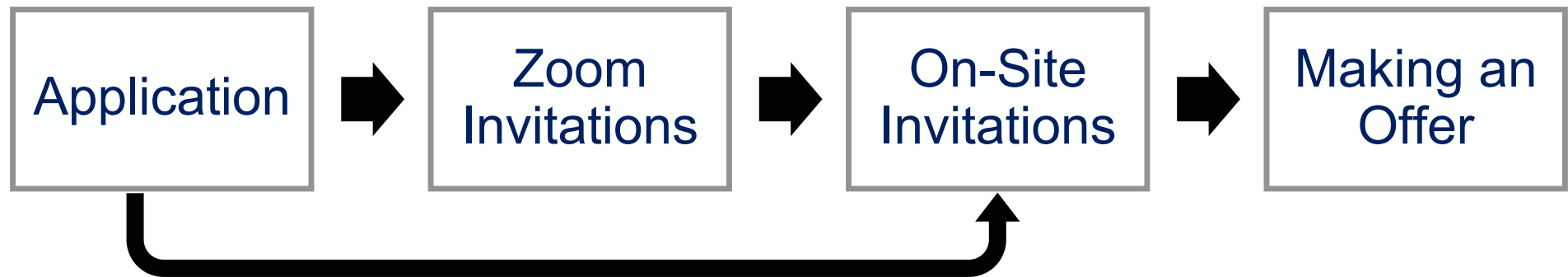
If you know someone in the faculty at the university, email them the minute you apply to let them know that you have done so. Leverage any connections you have.

If there is a big conference coming up that you are attending, apply at least a week before the conference – many places send their committee to pre-vet applicants.

Make a checklist of where you have applied to and deadlines.

The worst part of the process: waiting.

Universities vary greatly in procedure. Some ghost you (it sucks).

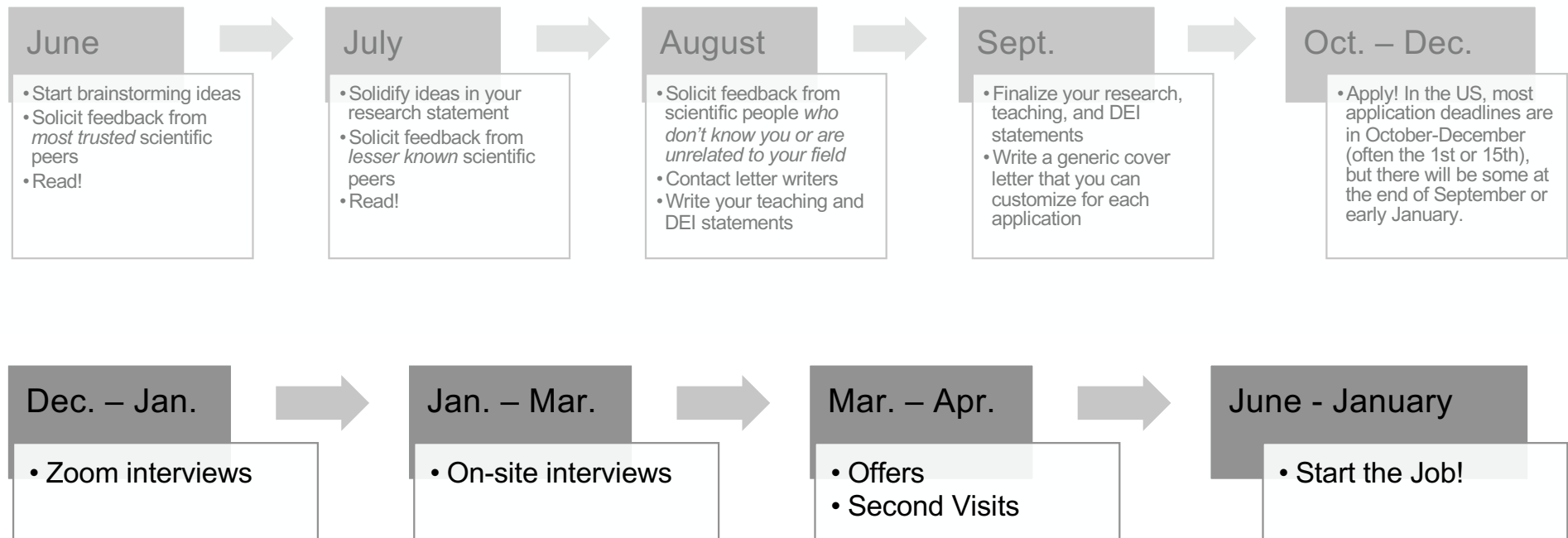


| Stage | Shortest [weeks] | Longest [weeks] | Average [weeks] |
|--------------------------------|------------------|------------------------|-----------------|
| Application to Zoom Invitation | 1.0 | 32.0 | 7.4 |
| Application to Pass | 1.0 | N/A (ghosting happens) | 15.2 |

https://docs.google.com/forms/d/10ZnpgUSsSuPVRBRn4QK1_SYL-SbRw0JHYLYVxc6RpOQ

Interviewing

US Timeline of Applying



Zoom Interviews

A 15-30 minute virtual or phone interview with the search committee sometimes conducted to high-throughput screen candidates or vet a small list of candidates.

| Questions I have often been asked | Other questions I (or others) have been asked | Questions you can ask |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Why this university? | What is the holy grail of your field? | What has changed most about your department since you arrived? |
| What courses at this university could you see yourself teaching? | What collaborations could you see starting at this university? | What is the timeline of this interview process? |
| What does success look like 10 years from now? | What kind of students do you want to attract? | What do you think will be different about the department five years from now? |
| What does DEI mean to you? | Whose work would you compare yours to? Who are your peers? | What meaningful changes is the department / university undergoing right now? |
| How will you differentiate yourself from your past advisors? | Why do you want to be a professor? | How does your department support young professors? |
| Who will your research competitors be? | What textbook would you use for X course? | |

On-Site Interviews

A 1-2 day interview where the candidate visits campus to present to and meet with the faculty.

- Departments typically bring 4-5 candidates on-site per opening.
- These are intense! Schedules can start at 8:00 AM and run until 9:00 PM for two days straight.
- “On-sites” typically contain 3 components: (1) a research seminar, (2) a “chalk talk”, and (3) small meetings with faculty, administration, and students.
- Unless explicitly told otherwise, you are being interviewed every minute you are with a representative of the university/department.

Advice I've Heard:

Wear comfortable shoes.

Ask for a bathroom break any time you need a moment to catch up.

Everyone is rooting for you to succeed.

You are interviewing to be a colleague, not a student. Approach conversations with respectful collegiality.

After the visit I ask myself 3 things: 1) can they teach? 2) can they do research worth funding? 3) do I want to work with them?

Pay close attention to their requests for the visit (what your talks should contain, timing, etc.)

The talks are the most important part, everything else is almost irrelevant.

The student meeting is very important and can sink your candidacy if you take it for granted.

Components of the On-Site Research Talk

A 30-60 minute public talk presenting your past and current research.

Best Advice I've Heard:

Make sure to introduce yourself!

There is no such thing as “over-preparing” for the job talk. Practice it as many times in front of as many different audiences as you can.

Make them dream.

You cannot assume any background understanding of your work. Some people will not even know who you are.

Reach out to the department beforehand and ask about the format and audience.

This will be an assessment of how well you can teach. Even if it feels pedantic, include one or two “teaching moments”.

End with a teaser of your future work.

Do not go over time.

When answering questions, listen patiently and don't pretend to know what you don't know.

Where appropriate, try to say “I” rather than “we” when talking about work conducted.

If you're not given it, ask for 10-15 minutes to practice beforehand. Check your technology. Keep your cool if all hell breaks loose.

If you can, use this time to make your future work obvious. An excellent research talk makes it clear that **you** are the person who is capable of doing the research proposed based upon your past work and excellence.

Components of the On-Site Chalk/“Vision” Talk

A 20-45 minute *closed-door* talk presenting your future research and plans for your professorship. May or may not have slides and varies greatly from institution to institution.

| |
|-----------------------------------------------|
| Introduce Yourself! |
| Past Work |
| Problem Statement and Overview of Aims |
| Aim 1 |
| Aim 2 |
| Aim 3 |
| Funding / Timeline |
| Teaching / Mentoring |
| DEI |

Components of the On-Site Chalk/“Vision” Talk

Top 10 Tips on Preparing for a Chalk Talk

By Ariel Furst and Katie Galloway

1. If the department doesn't provide information on the logistics of the chalk talk, reach out to the department and ask for the format.
2. Remember that you are interviewing them as much as they are interviewing you.
3. Faculty are invariably going to miss your seminar – include a short recap as needed for background of your chalk talk.
4. Include an outline across the bottom of your slides so faculty can follow where you are.
5. Be prepared for different group/room sizes and expertise.
6. You don't have to know the answer to every question as long as you are respectful in your response.
7. Big picture questions are very common – know where your research fits in the larger picture of the field.
8. Point out potential collaborations with members of the department.
9. If you cite specific funding sources (especially newer ones), make sure you know what they are for and can explain them briefly.
10. Know the major players in your field and your potential competitors.

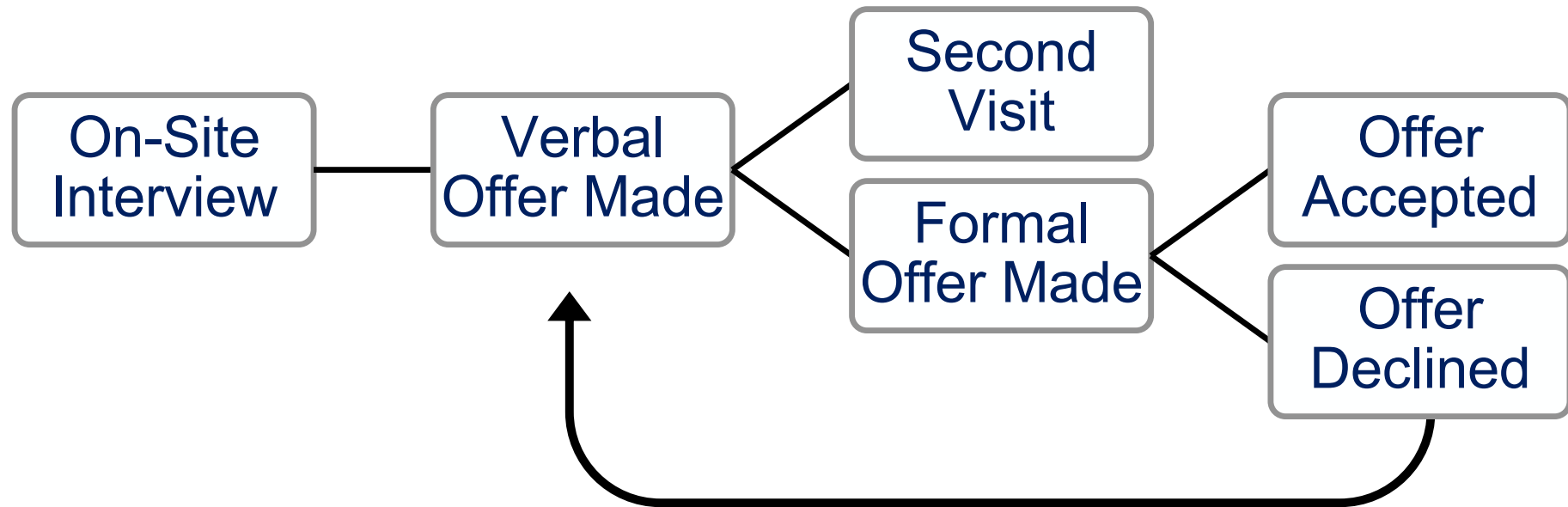
Components of the On-Site Small Meetings and One-on-Ones

30-60 minute meetings or meals with one or a few faculty members.

| Questions I have been asked | |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| What questions do you have for me? (If this is the first question they ask, they have not read your packet.) | Who will write your tenure letters? |
| | What does success look like 10 years from now? |
| | Whose work would you compare yours to? Who are your peers? |
| Can you look at XX problem and machine learn it for me? | What attracts you to a scientific problem? |
| How will you differentiate yourself from your past advisors? | What is your backup plan for XX? |
| Why do you want to be a professor? | Why is your research significant? |
| Questions you can ask | |
| What is your tenure rate? / How many professors have been denied tenure in the past ten years? | What is the infrastructure for student mental and physical well-being? |
| How are teaching assignments decided? | How do you support the success of young professors? |
| What is the ICR? What types of internal funding are there? | What are the areas of growth for the department? |
| What are good strategies for recruiting? | What is the computational infrastructure model? |
| What qualities do you factor into your admissions process? How are students matched with their advisors? | What are you most recently excited about? |

The worst part of the process: waiting.

Universities vary greatly in procedure.



Some places make only one offer, others go down their list of candidates until one accepts.

Negotiating

The Startup Package

Before your first grant hits, what do you need to be successful?

(some places will ask for this on the visit, some will ask at the verbal offer stage)

| Questions I Asked before Writing My Startup |
|-----------------------------------------------------------------------------------------------|
| What is the computational infrastructure model? Do I need to build my own cluster? |
| What is the overhead for a student? a postdoc? |
| How long are students covered by the department / university (including TA responsibilities)? |
| How long do I have to use my startup? |
| What shared resources / facilities are there? |
| What have similar hires been given in the past? (do your research on this one) |

Negotiating

Things With Some Room to Negotiate Things With Little Room to Negotiate

- Decision date
- Start date
- Spousal appointment at the University*
- Relocation Costs
- Lab Space
- Funds for Students / Postdocs
- Office Space and Equipment
- Travel Funds
- Teaching Load and Schedule
- Timeline on Startup Funds
- Titles and named positions
- Anything you can get anywhere else to negotiate

- Salary (usually mandated to $\pm \partial$) for assistant profs
- Spousal appointment outside of the University (they can *help*, but no guarantees)
- Tenure clock

Things I have heard of People Negotiating

- Daycare spots (in busy cities)
- Parking
- Involvement on Certain Grants

Starting the New Job

- TBD check back in Jan 2023.