

ACADEMIC JOB APPLICATIONS

Academic jobs: the who, the what, and the how

Summer CAMP 2023



INTRODUCTION

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Step 5: Repeat.

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Step 5: Repeat.

Step 6: ...

US Academic positions typically start in August, and usually last for integer multiples of one academic year. Job ads for Fall 2024 will start being posted around August. New posts will continue to appear throughout the fall, with most deadlines in the early October to late December window. But note that you may still see new Fall 2024 jobs being posted as late as June!

Timeline: you will likely have deadlines in October. It is probably a good idea to ask for letters to be ready by October 1 or October 15, even if you haven't yet seen deadlines for those dates.

European jobs have much more random deadlines.

Your job application materials tell a story of who you are as a mathematician. Some topics might be discussed in multiple places. Make sure to emphasize the most important aspects of your application – redundancy is good!

Make important details noticeable by those just skimming through.

- 1 Letters of recommendation (typical: 3–5)
- 2 CV
- 3 Research Statement
- 4 Teaching Statement
- 5 Diversity statement
- 6 Website
- 7 Cover letter
- 8 Others (eg, teaching portfolio)
- 9 Some religious colleges require a Faith Statement

- Sound easy? It takes much longer than you might expect to write up all the job materials (a month or more).
- You need to give your letter writers a long time to write their letters. First, you should ask them *early* whether they are willing to write. Then, *once they get your job materials*, they will need at least a month to write the letter since they are very busy.
- It takes a long time to sort through job listings, individualize the cover letters, and submit applications. People often apply to over 100 jobs, if they exist (varies by year).

The only sure thing about the job process is that you **will** receive contradictory advice. Be very suspicious of unequivocal statements (except this one). Seek out feedback and advice from many sources, and then take a linear combination of all the advice you received and your opinion.

LETTERS OF RECOMMENDATION

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This is probably the most important part of your application!

Typical: 3–5 letters. Most jobs have a required minimum of 3 or 4.

Postdocs and research positions: 1 teaching letter, 2–4 research letters

For a teaching-focused position, you might use 2 teaching letters.

Quality > Quantity

Things to consider in choosing letter writers:

- They should be able to describe your work and its importance in detail.
- Different letter writers might discuss different aspects of your work.
- It is good to have some writers who are well-known by other mathematicians, or other mathematicians in your research area.¹
- Especially for research positions, it is good (but not required) if not all letter writers are at your current institution.
- Teaching letters: try to choose someone who has observed you teaching, possibly more than once.

¹But it's useless to have a famous person who can't say anything about you!

How to choose letter writers?

Beyond the points mentioned before, you should ask your advisor's advice on whom to have write for you.

People who may write for you are often busy people! If you are asking someone to write for you for the first time, I recommend asking at least *six weeks* before the deadline. Even if you do this, there is no guarantee that they will agree to write for you!

CV

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
 - Where you have worked (math-related jobs: postdocs, teaching assistantship, course assistant, etc.)
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
 - Where you studied (bachelors degree and above)
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
 - Mailing address, email, website
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
 - List accepted/submitted papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
 - Emphasize courses you were the instructor of record for.
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
 - Outreach, refereeing, conferences/seminars/math events organized
- Talks/posters
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
 - For students, you can include talks at your institution. Later on, only include talks outside of your institution.
- Conferences attended
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
 - Do not include after you graduate and/or you have enough talks, papers, etc.
- Skills/languages

WHAT GOES IN A CV?

- Professional history
- Educational history
- Contact information
- Papers
- Grants/Fellowships
- Teaching experience
- Service/organization
- Talks/posters
- Conferences attended
- Skills/languages
 - Languages, programming languages, LaTeX if applicable
 - Do not include after you graduate and/or you have enough talks, papers, etc.

RESEARCH STATEMENT

RESEARCH STATEMENT

Who will read this?

- Prospective postdoc mentors and/or colleagues in the same area (general experts)
- Prospective colleagues in other areas (nonexperts)
- Your letter writers (specific experts)

What is the purpose of this statement?

In conjunction with your letters, employers may use this to determine whether

- You have a productive and independent research program.
- Your research is interesting to the department hiring.
- Your research is interesting to the community at large.
- Your research has potential for external funding².
- You have the potential to incorporate students into your research.
- Your research has the potential to increase participation in math.
- You can communicate mathematics to nonexperts and/or students.

²generally for tenure-track research positions

Some effective research statements include:

- Generally four or five pages (plus references).
- A general classification sentence near the beginning (i.e., the words “commutative algebra” in the first sentence).
- Some general background that puts your work in context for nonexperts. This may include some classical theorems, questions, or open conjectures.
- Statements of some of your results in Theorem format (with your name in citation to make clear that it’s your work).

Some effective research statements include:

- A clear narrative line of relation between your results and notable theorems, questions, or conjectures of others.
- Questions or directions that you are pursuing or aim to work on later.
- Questions or directions related to your research that would be suitable for students to work on.
- Activities undertaken in or associated with your research that have broadened participation in mathematics.

TEACHING STATEMENT

TEACHING STATEMENT

Who will read this?

- Various faculty members in the hiring department
- Your teaching letter writer(s)

What is the purpose of this statement?

In conjunction with your letters, employers may use this to determine whether

- You are and/or have the potential to be an effective teacher.
- You have an appropriate amount of teaching experience.
- You have experience relevant to a highly specific teaching need (e.g., statistics, math ed., finance).
- You will generate interesting teaching ideas and/or materials useful to department colleagues.

What is the purpose of this statement?

In conjunction with your letters, employers may use this to determine whether

- You have the potential to direct undergraduate research.
- You are likely to be a good colleague and/or fit into the department's vision.
- You will advance the department or university's outreach mission.
- You will bring about more equitable outcomes for diverse groups in your teaching.

Some effective teaching statements include:

- Generally 1 to 3 pages, depending on the position; no references.
- A clear summary of your teaching experience, clearly explaining the range of classes you have taught and in what roles.
- Emphasis on experience in specialized courses (e.g., statistics).
- Concrete descriptions of what you do in the classroom and/or in class-related activities.
- Concrete data or quotes from course evaluations and/or awards that evidence your teaching abilities.
- Interesting techniques or modalities you incorporate in your teaching.
- Any experience you have with undergraduate research and/or outreach, and future plans for these.

DIVERSITY STATEMENT

DIVERSITY STATEMENT

Who will read this?

- Various faculty members in the hiring department
- University/college hiring diversity representatives

Your diversity statement and materials may be used to determine whether:

- You are likely to assist and advance departmental diversity, equity, and inclusion initiatives.
- You have the potential to help advance departmental diversity, equity, and inclusion outcomes.
- You are knowledgeable about diversity, equity, and inclusion.
- You have a positive track record in advancing diversity, equity, and inclusion.
- You have meaningful plans for advancing diversity, equity, and inclusion.

Diversity statements are typically more personal than research and teaching statements. Additionally, diversity statements are the newest class of common types of application materials, so norms for these statements are less established than for others.

Some effective diversity statements include:

- Generally 1 or 2 pages, with no references.
- Statements of values related to your understanding and commitment to diversity, equity, and inclusion (e.g., Ardila's axioms).
- Examples of experiences that demonstrate your commitment to advancing diversity, equity, and inclusion.
- Future plans for advancing diversity, equity, and inclusion.

COVER LETTERS

Your cover letter may be used to determine whether:

- There are particular faculty members in the department who should read your file.
- You generally meet the basic criteria for job.
- There are specific aspects of your file that are particularly relevant to the job.
- You are knowledgeable about the institution/job.
- You are interested in the job (i.e., likely to accept an offer).

Cover letters for postdoctoral or research jobs are generally different from cover letters for teaching jobs or jobs in smaller departments.

Some successful cover letters for postdoctoral or research jobs include:

- Generally 1 page.
- A brief description of research interests, your Ph.D. institution and advisor, and/or current position.
- A list of potential postdoctoral mentors or departmental collaborators.
- A few highlights of your file.

Some successful cover letters for postdoctoral or research jobs include:

- Generally 2 to 3 pages.
- A brief description of research interests, your Ph.D. institution and advisor, and/or current position.
- A list of potential departmental collaborators.
- A few highlights of your file.
- Discussion of particular aspects or initiatives of the department/university that interest you.
- Discussion of your ability to contribute to particular aspects or initiatives of the department/university.

NSF POSTDOC MATERIALS

Eligibility:

- U.S. citizens/nationals and permanent residents
- Can apply either
 - Before graduating or
 - First or second year after graduating.

What it is:

- Grant for a postdoc with a specific mentor (“sponsoring scientist”).
 - The sponsoring scientist and institution is specified in the proposal and can't be changed if funded.
 - Can be your current postdoc mentor; the majority of successful proposals in CA recently have been by applicants in their first year after Ph.D. applying with their current postdoc mentor as the sp. scientist.
- Provides travel funds and decreased teaching over two or three years.
- Can increase your chances of getting a postdoc at a particular place.
- Can extend the length of a postdoctoral appointment.

Materials:

- Project description
- Letters of reference / sponsoring scientist statement
- Miscellany

Materials:

- Project description
 - Five page limit.
 - Can mostly overlap with your research statement, but emphasize future projects and questions more.
 - Should demonstrate that your proposed projects are interesting *and* that you are likely to make substantial progress on them.
 - Must include a (typically 1/3 – 1/2 page) section on *Broader Impacts*
 - Must include a section explaining your choice of mentor/institution.
- Letters of reference / sponsoring scientist statement
- Miscellany

Materials:

- Project description
 - Five page limit.
 - Can mostly overlap with your research statement, but emphasize future projects and questions more.
 - Must include (typically $\sim 1/2$ page) section on *Broader Impacts*, e.g.:
 - organizing conferences, workshops, seminars
 - outreach activities
 - mentoring students
 - developing and/or sharing educational materials
 - **not** about how your work will save the world (unless it is legitimately applied)
 - Must include a section explaining your choice of mentor/institution.
- Letters of reference / sponsoring scientist statement
- Miscellany

Materials:

- Project description
- Letters of reference / sponsoring scientist statement
 - The sponsoring scientist writes a statement of willingness to host you, but cannot write a recommendation letter.
 - Three reference letters; must include Ph.D. advisor.
- Miscellany

WEBSITE

You (no matter your career stage) should make an academic website.

People might meet you at a conference or workshop and want to learn more about what you are working on; if you have a website, they can do this more easily.

Contact your department's IT support or use an independent web host to help you get started.

Things to put on your website:

- Basic info: Name, institution, job title, email address, office number
- Research info: Research interests, papers
- Teaching info: Classes taught
- CV
- A recognizable photo (if you are comfortable with having your image online)

Other things you might put on your website:

- Talk notes/slides from past talks you gave
- Posters you presented at conferences
- Videos of you giving a talk / your CHAMPS elevator pitch
- List of conferences you will be attending soon
- Class syllabi or other teaching materials you've created and are comfortable sharing

How do you make a website?

- Googlesites: free, very easy to make websites, no need to know html
- HTML: github hosts webpages for free (github pages)
- If you don't know much HTML, you can copy and modify someone's source code to make your own HTML file, in particular, another mathematician's.

Make your website easy to find!

- Link to it from your department website
- Add links to your website to your CV and professional online profiles

When should you make a website? Today!

What other things can you do to advertise your work?

- Write beautiful papers.
- Give beautiful talks.
- Post your papers on the arXiv.
- Find your account on MathSciNet, add your picture, email, and website
- Claim your page on googlescholar, add your picture, email, and website. Make sure your publication list is up-to-date.
- Claim your researchgate account, add your picture, email, and website.

MATHJOBS

Most US academic positions in math get posted on mathjobs.org.

Applying in the fall? Make an account today!

- When you fill out the AMS coversheet for the first time, be careful not to send letter requests before your letter writers have been confirmed. Uncheck "email notify writer on submit" until you are ready.
- You can order jobs by most recent (yellow star); reading Mathjobs daily can help you stay on track.
- Careful: using the search feature can make you miss MANY jobs!
- If you're logged in, you can save jobs you are interested in to your own private list.
- When your materials are ready, submitting an application on Mathjobs can take only a couple of minutes! Your answers to repeat questions get saved between different jobs.

- Your materials get organized by type (research statement, cv, etc). You can have as many versions of the same type of file as you like.
- If you change a file (exact same version) after you apply for a job, the file you submitted gets updated automatically.
- You will be notified when a letter writer has submitted their letter. They can submit multiple letters (and you will see only the titles), but typically they will submit only one generic letter. They can update their letter later, and it will be automatically applied to any jobs you've applied for.
- For each job you apply for, you can choose which letters to use.
- You can see which jobs you've applied for under Status.

- For each job you apply for, you will indicate a primary AMS subject class and possibly some secondary ones. You can change the order for different applications. This is an important choice! Search committee members will likely order the applications by subject class. If your application is not under 13, commutative algebraists might miss it!
- Some job listings on mathjobs include the deadline only in the body of the advertisement, so if you sort by the deadline you will not see them in the correct place!
- Some jobs require a separate application outside of Mathjobs. Carefully read all ads so you don't miss this!

However, some job openings are not listed on mathjobs. Also check:

- eims.ams.org (the AMS website “Employment Information in the Mathematical Sciences”)
- higherjobs.com (some smaller schools post here; last year more jobs also appeared later)
- [eager-gen](#) (a listserv for algebraic geometry jobs, includes lots of postdocs and tenure-track positions)

APPLYING FOR JOBS

As soon as your materials are ready, start submitting applications!
You do not need all your letters to have been submitted to apply for jobs.

GET INVOLVED!

It is very important for most employers to see that you have been involved in other professional activities. They want to see that you would join the department full of experience and ideas for how to help make the department function well, and not that you would join and sit in your office with your door closed.

Get involved!