



# Job Applications in Academia

## Job advertisements for academic positions

- Mathjobs <http://www.mathjobs.org/>
- AMS: <http://www.ams.org/profession/employment-services/eims/eims-home>
- SIAM: [http://jobs.siam.org/home/index.cfm?site\\_id=686](http://jobs.siam.org/home/index.cfm?site_id=686)
- UK: <http://www.jobs.ac.uk/>
- Europe: <http://www.euro-math-soc.eu/jobs.html>
- France: <http://www.cnrs.fr/en/join/Tenured-researchers.htm>  
<https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/candidats.html>

## Application package for academic positions

- AMS cover sheet
- Cover letter
- Curriculum Vitae
- List of reference writers
- Research statement
- Teaching statement
- Ask your advisor for input
- Ask a friend to proofread your application materials carefully (in particular, if English is not your native language)

# AMS cover sheet

*This form is provided courtesy of the American Mathematical Society.*

*This cover sheet is provided as an aid to departments in processing job applications. It should be included with your application material.*

*Please print or type. Do not send this form to the AMS.*



Academic Employment in Mathematics

## AMS STANDARD COVER SHEET

Last Name \_\_\_\_\_

First Name \_\_\_\_\_

Middle Names \_\_\_\_\_

Address through next June \_\_\_\_\_ Home Phone \_\_\_\_\_

\_\_\_\_\_ Email Address \_\_\_\_\_

\_\_\_\_\_ Work Phone \_\_\_\_\_

Current Institutional Affiliation \_\_\_\_\_

Highest Degree and Source \_\_\_\_\_

Year of Ph.D. (optional) \_\_\_\_\_

Ph.D. Advisor \_\_\_\_\_

If the Ph.D. is not presently held, date on which you expect to receive \_\_\_\_\_

*Indicate the mathematical subject areas in which you have done research using the Mathematics Subject Classification printed on the back of this form, or on the AMS website. Use the two-digit classification, which best fits your interests in the Primary Interest line and add additional 2-digit numbers in the Secondary Interests line.*

Primary Interest  \_\_\_\_\_

Secondary Interests optional   \_\_\_\_\_

*Give a brief synopsis of your current research interests (e.g.: finite group actions on four-manifolds). Avoid special mathematical symbols and please do not write outside of the boxed area.*

\_\_\_\_\_

\_\_\_\_\_

**Most recent, if any, position held post Ph.D.**

University or Company \_\_\_\_\_

Position Title \_\_\_\_\_ Dates \_\_\_\_\_

**Indicate the position for which you are applying and position posting code, if applicable** \_\_\_\_\_

**If applying for a position which requires U.S. citizenship or U.S. permanent residency, indicate your eligibility**  Yes  No

**If unsuccessful for this position, would you like to be considered for a temporary position?**

Yes  No If yes, please check the appropriate boxes.

Postdoctoral Position  2+ Year Position  1 Year Position

*List the names, affiliations and e-mail addresses of up to four individuals who will provide letters of recommendation if asked. Mark the box provided for each individual whom you have already asked to send a letter.*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Cover letter

- Use the cover letter to introduce yourself.
- What position are you applying for?
- Briefly mention your current affiliation and position.
- What is your area of interest?
  
- Personalize the cover letter (if feasible):
  - Mention any specific professional interest you may have in the institution to which you apply.
  - Mention faculty with whom you expect to interact and work.

## Curriculum Vitae

- Contact information
- Academic positions
- Education
- Awards & Honors
- Grants
- Publications
- Teaching
- Presentations
- Service
- Other work experience, computer skills, ...

### Employment

Spring 2012 Postdoctoral Fellow, Complex and Arithmetic Dynamics program,  
 Institute for Computational and Experimental Research Mathematics (ICERM)  
 2010 – Tamarkin Assistant Professor/ NSF Postdoctoral Fellow, Brown University.  
 Summer 2009 Intern, Microsoft Research, Cryptography group, (mentor: Kristin Lauter)  
 Summer 2008 Center for Communications Research, La Jolla, CA

### Education

2010 Ph.D., University of California, Berkeley (advisor: Bjorn Poonen)  
 2005 B.S., University of Maryland, College Park, cum laude

### Preprints<sup>1</sup>

1. On a uniform bound for the number of exceptional linear subvarieties in the Mordell-Lang conjecture. (with Joseph H. Silverman.) [arXiv:1109.0207](https://arxiv.org/abs/1109.0207) submitted.
2. Higher-dimensional analogues of Châtelet surfaces. (with Anthony Várilly-Alvarado.) (To appear *Bull. London Math. Soc.*) [arXiv:1101.5453](https://arxiv.org/abs/1101.5453)
3. Failure of the Hasse principle for Châtelet surfaces in characteristic 2. (To appear *J. Théor. Nombres Bordeaux.*) [arXiv:0902.3644](https://arxiv.org/abs/0902.3644)

### Publications

1. Failure of the Hasse principle for Enriques surfaces., (with Anthony Várilly-Alvarado.) *Adv. Math.* **226** (2011), no. 6, 4884–4901.
2. Igusa class polynomials, embeddings of quartic CM fields, and arithmetic intersection theory. (with Helen Grundman, Jennifer Johnson-Leung, Kristin Lauter, Adriana Salerno, Erika Wittenborn) WIN—Women in Numbers, Fields Institute Communications, vol. 60, Amer. Math. Soc., Providence, RI, 2011, pp. 35-60.
3. A family of varieties with exactly one pointless rational fiber. *J. Théor. Nombres Bordeaux.* **22** (2010), no. 3., 741–745.
4. Hilbert schemes of 8 points., (with Dustin A. Cartwright, Daniel Erman, and Mauricio Velasco.) *Algebra Number Theory* **3** (2009) 763–795.

### Academic Honors

2010 – NSF Postdoctoral Fellowship  
 2009 – 2010 Ford Foundation Dissertation Fellowship  
 2007 – 2008 Mentored Research Award, University of California, Berkeley  
 2007 Honorable Mention, NSF Graduate Research Fellowship Program  
 2005 Honorable Mention, NSF Graduate Research Fellowship Program

<sup>1</sup>Most recent versions of all preprints are available at <http://math.brown.edu/~bviray>

**Research Talks**

- 2012 Jan. Joint Mathematical Meetings, Boston MA, “Arithmetic Geometry”
- Jan. Joint Mathematical Meetings, Boston MA,  
“Dynamical Systems in Algebraic and Arithmetic Geometry”
- 2011 Nov. Boston College, Number Theory Seminar
- Nov. Banff International Research Station, Women in Numbers 2
- Oct. The University of Maine, Maine-Québec Number Theory Conference
- Sept. Brown University, 40 Years & Counting: AWM’s Celebration of Women in Mathematics
- Jun. Oberwolfach, Algebraische Zahlentheorie
- May Emory University, Ramification in Algebra and Geometry at Emory
- Apr. Brown University, Algebraic Geometry Seminar
- Apr. AMS Special Sessions, College of the Holy Cross,  
“Modular Forms, Elliptic Curves, L-functions, and Number Theory”
- Apr. University of Wisconsin, Madison, Number Theory Seminar
- Apr. Amherst College, Five College Number Theory Seminar
- Mar. Centre International de Rencontres Mathématiques,  
Arithmetic, Geometry, Cryptography, and Coding Theory 13
- Mar. École normale supérieure/Université Paris-Sud, Variétés rationnelles
- 2010 Nov. Boston University, Algebra Seminar
- Nov. University of Connecticut, Algebra Seminar
- Oct. Lorentz Center, Arithmetic of Surfaces
- Oct. Microsoft Research, Workshop on Elliptic Curve Cryptography
- Jul. Schloss Thurnau, Rational Points 3
- Apr. Centre de Recherches Mathématiques, Workshop on Computer Security & Cryptography
- Mar. Rice University, Algebraic Geometry Seminar
- Feb. Stanford University, Number Theory Seminar
- 2009 Dec. University of Michigan, Algebraic Geometry Seminar
- Nov. New York University, Number Theory Seminar
- Nov. Brown University, Algebra Seminar
- Nov. Harvard University, Number Theory Seminar
- Nov. Massachusetts Institute of Technology, Number Theory Seminar
- Nov. AMS Special Sessions, Florida Atlantic University, “Arithmetic Geometry”
- Oct. AMS Special Sessions, Penn State, “Function Fields and their Applications”
- Oct. University of California, Berkeley, Graduate Student Colloquium
- Aug. Microsoft Research, End-of-internship talk
- Apr. Hausdorff Institute, Diophantine Equations Workshop
- Feb. University of California, Berkeley, Number Theory Seminar
- 2008 Nov. Banff International Research Station, Women in Numbers Conference
- June University of Warwick, Algebraic Geometry Seminar
- Apr. University of Maryland College Park, Algebra and Number Theory Seminar
- Mar. Cornell University, Macaulay 2 Conference
- 2007 Oct. Harvard/MIT, Baby Algebraic Geometry Seminar

**Teaching Activities**

- 2011 Fall Primary Instructor, Brown University, Abstract Algebra I (undergraduate)
- 2011 Fall Primary Instructor, Brown University, Linear Algebra
- 2008 Fall Graduate Student Instructor, UC Berkeley, Analytical Geometry and Calculus II
- 2007 Spring Graduate Student Instructor, UC Berkeley, Advanced Linear Algebra
- 2006 Fall Graduate Student Instructor, UC Berkeley, Multivariable Calculus
- 2006 Spring Graduate Student Instructor, UC Berkeley, Linear Algebra and Differential Equations
- 2005 Fall Graduate Student Instructor, UC Berkeley, Calculus II
- 2005 Spring Strauss Teaching Assistant, University of Maryland, College Park, Calculus II
- 2004 Fall Strauss Teaching Assistant, University of Maryland, College Park, Calculus I

**Organizing activities for conferences and meetings**

- 2013 Feb. Co-organizer of AIM workshop on “Brauer groups and obstruction problems: moduli spaces and arithmetic”
- 2012 Jun. Program Committee, Tenth Algorithmic Number Theory Symposium
- 2012 Jan. Co-organizer of a special session on “Rational Points on Varieties” at the Joint Mathematics Meetings
- 2011 Nov. Project leader at Women in Numbers 2.

**Service**

- 2011 – Active member in the Rose Whelan society, a student organization for women mathematicians at Brown University.
- 2011 – Member of Girls’ Angle advisory board.
- 2011 – Member of graduate admissions committee, Brown University.
- 2010 – Mentor at Girls’ Angle, a math club for girls.
- 2009 – 2010 Organizer of Graduate Student Colloquium, a venue for graduate students nearing completion to give colloquium-style talks connected to their theses.
- 2009 – 2010 Graduate student mentor.
- 2008 – 2010 Active member and co-founder of Unbounded Representation, a student group focused on issues of diversity in mathematics at UC Berkeley.
- 2006 – 2010 Active member in Noetherian Ring, a student organization for women mathematicians at UC Berkeley.
- 2006 – 2008 Officer of Mathematics Graduate Student Association(MGSA) at UC Berkeley.
- 2005 – 2006 Co-organizer of Mentor Lecture Series.

## Reference writers

- Usually, three to four letters are required, with one of these addressing your teaching skills, but more letters can be submitted.
- Letters of recommendation are very important. Think carefully about whom you wish to ask:
  - Referees should know you and your work well enough to make a meaningful, sound judgment.
  - If possible, ask referees who are well known in their field and preferably from different places (but only if you feel that they know you and your work well and have the time and interest to write a substantive letter).
  - For the teaching letter, ask somebody who you worked with as a TA; if you taught a course as a lecturer, ask an appropriate faculty member to visit one of your classes to help them write a letter.

Ask your letter writers early, give them plenty of time to submit.

## Research statement

- The first part of your research statement should be accessible to a general mathematical audience (hiring committees may/will include faculty not familiar with your research area). Put your research interests into a broader perspective (Why is your area important? What are the goals? How does your research fit into this vision?).
- The second part should be more specific and address your current and future research interests in more depth, intended for somebody with knowledge of your general area.
- For future research projects, find a good balance between concrete problems that you wish to work on and your long-term vision.
- Prepare research and teaching statements carefully. Have your friends and adviser(s) read them. Keep in mind that the shorter a statement, the higher the chance that it will be read (though you will need some space to adequately outline your interests).



## Teaching statement

- **Descriptive:** What you do when you teach, types of activities or thinking in which you engage your students?  
**Analytical:** Why you teach in the ways that you do, how has your thinking about teaching changed over time?
- **Empirical:** Experiences or observations of student learning on which your decisions about teaching are based.
  - **To what end:** What are your objectives as a teacher? Do you want students to acquire specific skills or develop their critical thinking abilities or work on problem-solving strategies?
  - **By what means:** How do you teach to achieve your goals?
  - **How to test:** How do you test students and measure their performance? How do you design exams and homework?
  - **Why:** Why do you teach? What personal satisfaction and rewards do you receive from teaching students?

## Preparation for the academic job market

- Create and use opportunities to:
  - participate in conferences, give and attend talks,
  - talk with seminar speakers, visitors, conference participants about your and their research,
  - build your own network of contacts, go for lunch or dinner with seminar speakers,
  - work with undergraduates over the summer.
- Seek teaching opportunities and document your teaching.