

MATH....NOW WHAT?

What Do Mathematicians Do?

Many mathematicians work in academia, earning a Master's degree and teaching at the elementary or high school level, or earning a PhD in their field and teaching at a college or university. But mathematicians work in many other fields, including astronomy and space exploration, climate research, medicine, national security, robotics, animated film, and in a wide range of businesses.

Check out the American Mathematical Society's undergraduate resources

<http://www.ams.org/programs/students/undergrad> and <http://www.ams.org/employment> for more information on careers in math.

Quick Facts: Mathematicians and Statisticians	
2020 Median Pay	\$93,290 per year
Entry-Level Education	Master's degree
Work Experience in a Related Occupation	None
On-the-job Training	None
Number of Jobs, 2019	45,700
Job Outlook, 2019-29	33% (Much faster than average)
Employment Change, 2019-29	14,900

[Found on the Occupational Outlook Handbook, <https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm>]

WHAT ELSE CAN YOU DO WITH A MATH DEGREE?

- **Actuarial and Insurance**
 - Actuary
 - Benefits Specialist
 - Financial Analyst
 - Investment Analyst
- **Computer and Information Sciences**
 - Applications Programmer
 - Computational Scientist
 - Computer Applications Software Engineer
 - Computer Programmer
 - Computer Systems Analyst
 - Cryptanalyst
 - Database Administrator
- **Teaching/Academic Research**
 - College or University Professor
 - Community College Instructor
 - Teacher
- **Operations Research**
 - Operations Research Analyst
 - Systems Engineer
- **Statistics**
 - Biometrician
 - Demographer
 - Econometrician
 - Psychometrician
 - Quality Control Analyst
 - Statistician
- **Business/Industry**
 - Applied Mathematician
 - Business Analyst
 - Communications Engineer
 - Market Researcher
 - Product Developer
- **Health**
 - Biomathematician
 - Biomedical Engineer
 - Ecologist

Some of the largest industries and companies hiring math majors (check out their employment pages for internship or job opportunities)

- Government
- Banks and the finance/insurance industry
- National Security Agency
- US Census Bureau
- General Motors
- Boeing

Actuarial Careers

Here are actuarial companies that have recently recruited UMass Amherst students on campus:

- Aetna
- Anthem
- Aon
- Blue Cross Blue Shield
- Guardian Life Insurance
- MassMutual
- Oliver Wyman
- Sun life
- The Hanover
- Tufts Health Plan
- Voya

Career Planning Resources & Websites

UMass Amherst CNS Career Center

www.cns.umass.edu/careers

UMass Handshake Database of Internships & Jobs

<https://umass.joinhandshake.com/>

FOCUS2 Career and Education Planning

www.umass.edu/careers/planning for sign-in button

CNS Completed Research/Internships database

<https://secure.cns.umass.edu/webforms/internships>

What Can I Do With This Major?

<https://www.umass.edu/careers/planning>

(Click on "What Can I do with this Major" icon on the right-hand column.)

Math-Related Job & Internship Links

* UMass Handshake Database of Jobs & Internships

<https://umass.joinhandshake.com>

* Summer Research Experiences for Undergraduates

<http://www.ams.org/programs/students/emp-reu>

* Natl Science Foundation NSF Summer Research Opps

https://www.nsf.gov/crssprgm/reu/reu_search.jsp

* American Mathematical Society Internships & Co-ops

<http://www.ams.org/employment/internships.html>

* Industry, Research and Govt Companies Hiring Math

<http://www.siam.org/careers/internships.php>

Academic Math Jobs

<http://www.all-acad.com/Jobs/Mathematics>

Actuarial Careers Inc, Jobs Board

<http://www.actuarialcareers.com/about-our-jobs/>

Actuarial Jobs for Pre-ACAS

<http://www.actuarialcareers.com/jobs-for-pre-acas/>

American Statistical Association JobWeb

<http://www.amstat.org/ASA/Your-Career>

Association for Women in Mathematics Jobs Board

<https://awm-math.org/jobboard/>

Casualty Actuarial Society Career Center

<http://careers.casact.org/jobs/>

Commonwealth of Mass Jobs by Category

<https://massanf.taleo.net/careersection>

Computational Fluid Dynamics Jobs

<https://www.cfd-online.com/Jobs/>

Entry-level finance jobs

<https://www.cfd-online.com/Feeds/jobs.php>

* Federal Pathways Program Internships at NASA

<https://www.thebalancecareers.com/>

GIS Jobs Clearinghouse

<https://www.nasa.gov/careers>

GIS Jobs Boards

<http://www.gjc.org/>

<http://www.mygisjobs.com/>

<https://www.gislounge.com/job-listing-sites-in-gis/>

GIS Jobs via Recruiters

<https://www.geosearch.com/job-seekers.html>

MathJobs.org (Mostly academic jobs but not all)

<https://www.mathjobs.org/jobs/jobs>

<https://twitter.com/MathJobs1>

MathPrograms.org (Research opportunities, grants) <http://www.mathprograms.org/db/programs>
Math Assoc of America Jobs Board <http://www.mathclassifieds.org/jobseeker>
Math Programs for Women <https://awm-math.org/programs/>
Mathematics Education Jobs <https://nctm-jobs.careerwebsite.com/>
MathREUPrograms.org <https://sites.google.com/view/mathreu>
Math Science Research Opportunities (MSRI-UP) <http://www.msri.org/web/msri/education>
National Security Agency Careers <http://www.nsa.gov/careers>
Soc for Industrial & Applied Math Research Opps. <https://www.siam.org/students-education/resources/>
Soc for Industrial & Applied Math Jobs Board <http://jobs.siam.org/>
Summer Programs in Math <http://archives.math.utk.edu/undergraduates>
Summer Research Opportunities <https://www.maa.org/programs/students>
Teach for America Internships <https://www.teachforamerica.org/>
Teaching Math to Elementary & High School <http://www.topusajobs.com/cgi/search.cgi?>
Technology Jobs <https://www.dice.com/jobs/>
US Dept of Energy Science Lab Internships <https://science.energy.gov/wdts/suli/>

Career Planning Links

* Careers in Math http://www.cln.org/themes/careers_math.html
Career Fields in Engineering & Computer Science <http://career.berkeley.edu/Engineering>
Career Resources for Women in Math <https://awm-math.org/resources/careers/>
Careers in Applied Math <http://www.siam.org/careers/thinking.php>
Careers for Numbers People <http://www.learnhowtobecome.org/careers>
Edge Program for Women Heading to Grad School <https://www.edgeforwomen.org/>
Federal Agencies Hiring Math Majors <https://gogovernment.org/career-guides/>
* Find a Graduate School Program in Math Sciences <http://www.ams.org/programs/students>
Math Archives <http://archives.math.utk.edu/undergraduates.html>
Mathematical Association of America <http://www.maa.org/careers>
PLUS Magazine Careers In and With Maths <http://www.pass.maths.org/content/careers>
Sloan Career Cornerstone Center <http://www.careercornerstone.org/>
Society for Industrial and Applied Mathematics <http://www.siam.org/careers>
What Do Mathematicians Do? <http://www.ams.org/profession/career-info>

Professional Associations

American Mathematical Society <http://www.ams.org>
American Statistical Association <http://www.amstat.org>
Association of Women in Mathematics <http://www.awm-math.org/ads.html>
Casualty Actuarial Society Career Center <http://www.casact.org/>
Computing Research Association <http://cra.org>
IEEE Computer Society <http://www.computer.org/pubs/computer>
Institute of Mathematical Statistics <https://imstat.org/>
Mathematical Association of America <http://www.maa.org>
National Council of Teachers of Mathematics <http://www.nctm.org>
Society for Industrial and Applied Mathematics <http://www.siam.org>
Society of Actuaries <http://www.soa.org/>
US Census Bureau <https://www.census.gov/>

IMPORTANT TRANSFERABLE QUALITIES TO INCLUDE ON YOUR RESUME FOR MATH-BASED POSITIONS

Critical-thinking skills. Statisticians use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Problem-solving skills. Statisticians must develop techniques to overcome problems in data collection and analysis, such as high nonresponse rates, so that they can draw meaningful conclusions.

Speaking skills. Because statisticians often work in teams, they must be able to orally communicate statistical information and ideas so that others will understand.

Writing skills. Good writing skills are important for statisticians because they need to explain technical matters to persons without their level of statistical expertise.

What Do Employers Look For? (NACE 2020 Job Outlook for Students)

