

STATISTICS

What can I do with this major?

AREAS

GOVERNMENT

Design surveys and methodology
Implement experiments/Conduct field work
Collect, process, and analyze data
Interpret results
Clinical trial analysis
Reliability and quality control
Operations research
Areas of research include:
 Census
 Education
 Ecology and environment
 Forestry
 Government regulation
 Law
 National defense
 Public health
 Population
 Risk assessment

EMPLOYERS

Federal government:
 Bureau of Economic Analysis
 Bureau of Labor Statistics
 Centers for Disease Control and Prevention
 Central Intelligence Agency
 Census Bureau
 Department of Agriculture
 Department of Commerce
 Department of Defense:
 Army Research Office
 Office of Naval Research
 Department of Energy:
 Office of Energy Research
 Department of Health and Human Services
 Department of Homeland Security
 Department of Justice
 Environmental Protection Agency
 Food and Drug Administration
 National Institutes of Health
 National Science Foundation
 National Institute of Standards and Technology
 National Security Agency

STRATEGIES

Approximately 20% of statisticians work for the federal government, and they are found in nearly all agencies and departments. An additional 10% work in state and local governments.
Plan to earn a master's or doctoral degree to qualify for most "statistician" jobs.
Some positions are available for students with bachelor's degrees in statistics.
Develop a strong background in computers because they are used extensively for statistical applications.
Hone writing and presentation skills.
Assist professors with research projects to gain experience collecting and analyzing data.
Complete an internship with a government organization.
Learn about the government hiring process and plan to apply early. Research special hiring authorizations to be hired and promoted more quickly.

HEALTH AND MEDICINE

Biomedical research
Biostatistics/Biometrics
Biopharmaceutical statistics
Pharmacology
Clinical trials
Epidemiology
Genetics
Public health
Animal health
Health economics
Market research

Pharmaceutical companies
Biotechnology firms
Hospitals
National laboratories
Government agencies:
 Centers for Disease Control and Prevention
 Food and Drug Administration
 National Institutes of Health
 National Center for Health Statistics
World Health Organization
Research universities

Supplement curriculum with courses such as biology, chemistry, ecology, and other natural sciences. This area of statistics blends medicine and mathematics/statistics.
Plan to earn a master's or doctoral degree in statistics, public health, epidemiology, related field.
Seek experience with a statistical software package and learn a programming language.
Learn to work well on interdisciplinary teams.
Complete a relevant internship to gain experience and to test interest in field.

AREAS

EMPLOYERS

STRATEGIES

HEALTH AND MEDICINE

Technical writing

Animal health industry
Scientific journals
Consulting firms

Develop strong written and verbal communication skills. Statisticians in this field may frequently write technical reports and give presentations.

INDUSTRY

Quality control
Reliability
Product testing
Product development and improvement
Management of assets and liabilities
Risk assessment
Financial planning
Market research
Operations research
Purchasing
Management
Engineering applications
Research:
 Agricultural
 Environmental
 Biological
 Chemical
Computer science
Artificial intelligence
Statistical computing
Data processing services
Technical writing
Science journalism
Sports statistics

Research centers and laboratories
Pharmaceutical and biotechnology firms
Environmental clean-up firms
Chemical companies
Software developers
Computer companies
Internet companies
Engineering firms
Manufacturers
Logistics firms
Transportation companies
Communications industry
Utility companies
Financial institutions
Insurance companies
Consumer marketing firms
Statistics agencies
Data collection services
Consulting firms
Nonprofit organizations

Nearly all industries have a need for statisticians.
Conduct informational interviews with professionals in a variety of settings to help determine career goals.
Take a well-rounded selection of courses depending upon areas of interest (e.g., business or science).
Plan to earn a master's or doctoral degree for higher level positions.
Gain relevant experience through internships.
Develop a strong background in computers because they are used extensively for statistical applications.
Learn to work well both independently and on interdisciplinary teams.
Develop the ability to communicate statistical aspects of business decisions to a wide array of people.
Regarding sports statistics: few statisticians work full-time in this field. Some may be hired by professional sports teams or major television networks. Start gaining experience in the field by volunteering or working part-time for local high schools and college sports programs. Seek an internship in sports statistics.

AREAS

EMPLOYERS

STRATEGIES

OPERATIONS MANAGEMENT

Operations research analysis:

- Business strategy
- Facilities layout
- Inventory control
- Personnel scheduling

Production management:

- Line supervision
- Manufacturing management
- Production planning
- Quality assurance

Materials management:

- Purchasing/buying
- Traffic management
- Inventory management

- Manufacturers
- Industrial organizations
- Service organizations
- Logistics firms
- Airlines and other transportation companies

- Develop strong analytical skills and a logical approach to problem solving.
- Take additional courses in management.
- Gain relevant experience through internships.
- Acquire skills in budgeting and cost management.
- Learn to manage multiple situations and problems.
- Develop the ability to communicate effectively with different types of people in various functional areas.
- Earn an MBA to reach higher levels of operations management.

BANKING AND FINANCE

- Corporate and consumer credit analysis
- Commercial lending
- Trust management
- Capital services and mergers and acquisitions
- Mortgage loans
- Originations and packaging
- Branch management
- Operations
- Cash management
- Credit scoring and risk management
- Private banking
- Financial analysis
- Investment banking

- Commercial banks
- Credit unions
- Savings and loan associations
- Savings banks
- Mortgage banks
- Captive finance companies
- Regulatory agencies including:
 - Federal Reserve
 - Federal Deposit Insurance Corporation (FDIC)
 - Office of the Comptroller of the Currency (OCC)
 - Office of Thrift Supervision (OTS)
- Brokerage firms

- Build a solid background in business including marketing, finance, and accounting.
- Gain experience through part-time, summer, or internship positions in a financial services firm.
- Develop strong interpersonal and communication skills in order to work well with a diverse clientele.
- Plan to earn an MBA to enter investment banking.
- Research professional certifications that may be valuable in this field.

AREAS

EMPLOYERS

STRATEGIES

INSURANCE

Actuary science
Risk management/Assessment
Loss management/Control
Underwriting

Insurance carriers
Insurance agents and brokers
Professional, scientific, and technical consulting firms
Government agencies

Take additional courses in mathematics and finance. Complete an internship with an insurance agency to gain relevant experience.
Talk to professionals in the industry to learn more about claims, underwriting, and risk management. Many entry-level positions exist in these areas.
Develop strong communication skills, as many positions require interaction with others and the ability to explain information clearly and concisely.
Learn how to use statistical analysis software and various computer programming languages.
More than half of actuaries work for insurance carriers.
Plan to take a series of actuarial exams to gain licensure from either the Society of Actuaries or the Casualty Actuarial Society. The type of insurance you deal with will determine which path to pursue. Most actuaries take these exams while working full-time, and the process takes several years.

EDUCATION

Teaching
Research

Colleges and universities

Plan to earn a doctoral degree.
Maintain a high undergraduate GPA and secure strong recommendations from faculty.
Volunteer to assist a faculty member with his or her research or find a part-time job as a research assistant.

GENERAL INFORMATION

- Statistics can be used in a wide variety of fields within science, technology, business, medicine, and social sciences. Gain knowledge or take courses in a specific field of interest, such as medicine or finance, to pair with skills in statistics, math, and computers.
- The job outlook for statisticians is very strong because businesses have more access to data than ever before and that data requires analysis.
- Many statistician and upper level research jobs in either government or industry will require at least a master's degree.
- An undergraduate degree in statistics can be used in a variety of business settings if combined with relevant experience and skills. Choose concentrations or minors that will enhance a degree in statistics. Take courses in forecasting and applied time series which are particularly sought after by employers. Plan to complete one or more internships.
- Some positions in business, such as sales and management, are open to any major. Seek experiences and build skills that will help you prepare for these jobs.
- Strong communication skills are essential in the field of statistics in order to communicate statistical information clearly to people who do not have technical backgrounds. Good writing and presentation skills are critical.
- Get involved with campus organizations to build leadership and teamwork skills.
- Conduct informational interviews with professionals in fields of interest to learn more about their work and to build a network of contacts.
- To prepare for graduate school, maintain a high grade point average and secure strong faculty recommendations.
- Statistics can be a good preparation for graduate degrees in other fields such as law, business, or public health.
- Join the American Statistical Association and use its website as a resource to research career opportunities.