COMPUTATIONAL SCIENCE

What can I do with this Major?

AREAS	EMPLOYERS	STRATEGIES
Acoustics Basic and Applied Research Development Teaching Consulting Administration Testing	Colleges and universities Government laboratories Nonprofit research centers Industry e.g., electronics, building design, medical instrumentation, communications, engineering, noise pollution, sound recording, film production	-Supplement program with courses in psychology, physiology, communications, political science, and sociology. -Obtain a graduate degree in computational science or physics for opportunities in industry. -Maintain an interest in music, the arts and humanities. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
Aerospace Propulsion Fluid Mechanics Thermodynamics Structures Celestial Mechanics Acoustics Guidance and Control	Aircraft, guided missile, and space vehicle industries Communications equipment manufacturers Commercial airlines Federal government departments: Defense National Aeronautics and Space Administration (NASA) Business and engineering firms	*Discipline uses cutting edge technology to deal with challenges of aeronautics, space, mass transportation, environmental pollution, and medical science.* AEROSPACE -Keep abreast of status of federal funding for defense and space programs. -Seek co-op opportunities. -Develop effective verbal and written communication skills. -Learn to work well within a team. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
Genetics Research and Development related to: Animals Plants Humans Genetic Counseling Education	Colleges and Universities Pharmaceutical companies Large producers of seed, livestock, and poultry Government laboratories such as: Department of Agriculture Fish and Wildlife Service National Institutes of Health Biotechnology industry Hospitals and medical centers	-Acquire a broad background in sciences, mathematics, and computer technology. -Obtain a Ph.D. for teaching and advanced positions in research and management. -Earn a master's degree from an accredited program for genetic counseling. -Complete an undergraduate research project with a professor. -Find a related internship with an organization in the area of your interest. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/

Bioinformatics Research and Development Education	Biotechnology Industry Pharmaceutical companies Government research laboratories Universities and colleges	-Double major or minor in computer science. -Acquire experience working in teams. -Develop in-depth programming and relational database skills. -Learn molecular biology packages, web design, and programming skills. -Complete an internship in your area of interest. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
Biomedical Physiology Biophysics Biochemistry Pharmacology Immunology Pathology Research and Development Education	Colleges and universities Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture Clinics and hospitals Private research foundations Pharmaceutical companies Federal laboratories and regulatory agencies Independent testing laboratories Public health departments Agricultural experiment stations Industrial laboratories including chemical, petroleum, food processing, drug, and cosmetic manufacturers	-Obtain a Ph.D. for college and university teaching and advanced research positions. -Acquire a background in physics, organic and physical chemistry, mathematics, and anatomy. -Take courses in area(s) of specialization and/or consider an advanced degrees; some may require an M.D. -Complete a related internship with an organization in the area of your interest. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
Air Quality Management Engineering Planning Analytical Chemistry Environmental Quality Analysis Meteorology Risk Assessment Safety and Health Management Toxicology Project Development Compliance	Federal, state, and local government Private industry Consulting firms Nonprofit organizations	-Develop a specific skill in the areas of engineering, chemistry or laboratory work. -Work at state and local agencies as a way to start an air quality career. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/

Hazardous Waste Management Hydrogeology Quality Control Risk Assessment Environmental Engineering Public and Environmental Health Industrial Hygiene Law Biology Chemistry Geology Chemical Engineering Planning Compliance	Federal, state, and local government Private companies that generate hazardous waste in production Hazardous waste management firms Consulting firms Nonprofit organizations	-Consider double major in hard science or engineering. -Attend public meetings on this issue. -Get laboratory experience. -Gain computer expertise. -Work in government office or regulatory agency. -Get experience with technical writing. -Get involved with local chapters of citizen watch groups. -Become familiar with Superfund and its activities. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
MONEY MANAGEMENT Research Trading Marketing Portfolio Management	Portfolio management firms Commercial banks Investment banks Federal Reserve banks Insurance firms	Most positions require an advanced degree in economics, finance or business and many years of financial experience. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
INVESTMENT BANKING Corporate Financial Analysis Mergers and Acquisitions Equity and Debt Underwriting Institutional Bond and Equity Sales Retail Bond and Equity Sales Business Valuation Business Sale Transactions Currency Trading Derivatives, e.g. options Trading Venture Capital Fund Management New Venture Analysis	Investment banking firms (Changes in laws have created a fluid situation in this industry; Mergers and acquisitions continue to take place.) Financial services firms Insurance firms (The Gramm Leach Bliley Act of 1999 allowed financial services firms to acquire or build investment banking subsidiaries and vice versa.)	An M.B.A. is required to move beyond the entry-level analyst position in investment banking. Investment banking is highly competitive. Be prepared to work many hours of overtime per week, start at the bottom, and pay your dues. Develop strong analytical and communication skills. Cultivate personal ambitiousness. Obtain a Series 7 License for both institutional and retail broker sales positions. Work toward the CFA designation. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/

HEALTH PHYSICS Basic and Applied Research Development Teaching Consulting Administration Monitoring/Inspection	Colleges and universities Government laboratories Government agencies e.g., Department of Defense, Department of Energy, Department of Public Health Service Nonprofit research centers Industry e.g., health physics instrumentation, nuclear power, nuclear weapons, radioisotope products, nuclear accelerators, nuclear reactors Environmental firms Hospitals	Earn a Ph.D. and certification by the American Board of Health Physics (ABHP) for top university teaching, research and administrative positions. Complete a master's degree and certification by the ABHP for professional health physicists positions. Specialize in health physics and obtain technician certification from the National Registry of Radiation Protection. Acquire knowledge of government standards and Regulations. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/
ELECTRONIC MEDIA DESIGN/4D DESIGN Digital Multimedia Film Title Television Graphics Video Games Computer Graphics Motion Graphics Animation Website Design Interactive Media	Film studios Motion picture production firms Television stations Computer systems design firms Video game designers Software firms Video production houses Internet media companies Online publishers Online retailers	This is a highly specialized area of design Develop excellent computer skills in a variety of platforms and design software Become familiar with as many computer graphics and design software packages such as Quark, Photoshop, and Illustrator. Plan to stay up-to-date on new developments in the industry Gain relevant experience through part-time jobs and internships Volunteer to design the website for a student or local community organization Work for the campus television station. To work in television and film, consider relocating to areas of the country where the entertainment industry is more prevalent Stay current with media and cultural trends Participate in design contests. Supplement your studies with art, communication, graphic communication and information technology. -For more information about salary, job outlook and general descriptions: http://www.bls.gov/ooh/

General Information:

- A degree in computational science provides a great deal of career options. The multidisciplinary training procided allows for a multi-level set of marketable skills that employers find appealing.
- The modern discipline of computational science has its roots in physics. The need to precisely compute large quantities of data with very limited computational resources was essential in projects such as regeneration of ballistics tables for military use, the Apollo moon landings and space shuttle missions and the design of early integrated circuit chips.
- Computational Science is heavily used in the engineering disciplines for design of aircraft, integrated circuits, construction equipment and aerospace structures.
- Computational Science is also used a variety of other fields such as biology, chemistry, environmental science, geology, meteorology, financial markets, physical education, acoustics and computer graphics.
- A Bachelor's degree will qualify one for work in education, industry, government, museums, parks, and gardens.
- Master's degrees allow for more opportunities in research and administration. Some community colleges will hire Master's level teachers.
- Doctoral degrees are necessary for advanced research and administrative positions, university teaching, and independent research.-
- An advanced degree provides the opportunity to specialize under the different areas of the sciences.
- The sciences are good preparation for a career in healthcare such as medicine, dentistry, and veterinary science, but professional degrees and licenses are also necessary to practice in these fields.
- Learn laboratory procedures and become familiar with equipment.
- Obtain summer, part-time, volunteer, co-op, or internship experience to test the fields of interest and gain valuable experience.
- Develop strong computer, mathematics, and verbal and written communications skills.
- Join professional associations and community organizations to stay abreast of current issues in the field and to develop networking contacts.
- Read scientific journals related to your area of interest.
- Maintain a high grade point average to improve chances of graduate and professional school admission.
- Become familiar with the specific entrance exam for graduate or professional schools in your area of interest.
- Secure strong relationships and personal recommendations from professors and/or employers.
- Consider completing a post doctoral experience after graduate school.
- For more information on your major visit: http://www.onetonline.org/