



Four Science Careers

1. **Nanotechnology** is manipulation of matter on an atomic, molecular, and supramolecular scale.

Nanotechnology as defined by size is naturally very broad, including fields of science as diverse as surface science, organic chemistry, molecular biology, semiconductor physics, energy storage, microfabrication, molecular engineering, etc. Until 2012, through its National Nanotechnology Initiative, the USA has invested \$3.7 billion, the European Union has invested \$1.2 billion and Japan has \$750 million.

2. **Agronomy** is the science and technology of producing and using plants for food, fuel, fiber, and land reclamation. Agronomy has come to encompass work in the areas of plant genetics, plant physiology, meteorology, and soil science. Agronomists use biotechnology to extend and speed up the development of desired characteristics. Biotechnology is often a lab activity requiring field testing of the new crop varieties that are developed. In addition to increasing crop yields agronomic biotechnology is increasingly being applied for new uses other than food.
3. **Environmental science** is an interdisciplinary academic field that integrates physical, biological and information sciences (including ecology, biology, physics, chemistry, plant science, zoology, mineralogy, oceanology, limnology, soil science, geology, atmospheric science, and geodesy) to the study of the environment, and the solution of environmental problems.

Atmospheric sciences

Atmospheric sciences focus on the Earth's atmosphere, with an emphasis upon its interrelation to other systems.

Ecology

Ecology is the study of the interactions between organisms and their environment

Environmental chemistry

Environmental chemistry is the study of chemical alterations in the environment. Principal areas of study include soil contamination and water pollution.

Geosciences

Geosciences include environmental geology, environmental soil science, volcanic phenomena and evolution of the Earth's crust. In some classification systems, this can also include hydrology, including oceanography.

4. **Medicine** is the science and practice of the diagnosis, treatment, and prevention of disease. Medicine encompasses a variety of health care practices evolved to maintain and restore health by the prevention and treatment of illness. Contemporary medicine applies biomedical sciences, biomedical research, genetics, and medical technology to diagnose, treat, and prevent injury and disease, typically through pharmaceuticals or surgery, but also through therapies as diverse as psychotherapy, external splints and traction, medical devices, biologics, and ionizing radiation, amongst others.