Career Opportunities in Science, Technology, and Public Policy

Science, Technology & Public Policy is a maturing policy field focused on the interactions among scientific developments, technological change, social values, and governmental activities at both international and domestic levels. It is concerned with the ways in which citizens and professionals in industry, government, labor, academia, and non-profit organizations understand these interactions and apply their understanding to solve social, environmental, human health and economic problems, as well as promote and manage scientific and technological systems that could serve as solutions.

Career Paths and Entry Salaries

Recent graduates with science policy degrees work in research, analysis, or management with such job titles as research analyst, program or policy analyst, legislative analyst, or the more specific environmental protection specialist. Beginning salaries range from the upper $30's to the mid $40's. Salaries may be higher for candidates who have technical/scientific undergraduate or graduate degrees or significant work experience in the field, on Capitol Hill, or in federal agencies, nonprofit think tanks, or industry.

Career paths in policy making, policy analysis, and policy research require different kinds of skills and capabilities as well as different types of training and work styles. In addition, career paths leading to similar positions may differ. For example, senior executive-level policy making positions in federal agencies often require scientific or technical credentials, whereas senior congressional committee policy making positions are less demanding of technical qualifications and more demanding of political skills. The same may be said of policy management careers. A person entering the field as a research or policy assistant might expect to move to analyst or technical consultant, to project director or senior professional staff, and ultimately to policy making positions such as assistant secretary, executive director, or vice president. With some exceptions, a Ph.D is usually required for movement to senior levels, and generally the closer the position is to academe or high-level think tanks, the more a Ph.D is needed.

Qualifications Necessary/Application Procedures to Enter Field

To be successful, interested students should develop their analytical skills, both qualitative and quantitative. Knowledge of the policy environment and the significant issues affecting policies and information management skills are needed. Other needed skills include effective reporting and communicating skills (verbal and written), a strong background in economics, political and persuasive skills, especially diplomacy when working with diverse groups.
In addition, good teamwork and networking talents, substantive knowledge of` a specialized area such as biotechnology, defense, space or the environment, and a technical degree (i.e. Ph.D, MS, or BS in physics or engineering) may be
required for positions in some science and technology organizations.

Sample Employers

- Agency for International Development, www.usaid.gov
- American Physical Society, www.aps.org/
- Analytic Service Inc., www.anser.org/
- Battelle Memorial Institute, www.battelle.org/

- Center for Strategic and International Studies, www.csis.org
- Central Intelligence Agency, www.cia.gov
- Congressional Research Service, www.loc.gov/crsinfo/
- Department of Agriculture, www.usda.gov
- Department of Commerce, www.commerce.gov
- Department of Defense, www.defense.gov
- Department of Energy, www.doe.gov
- Department of Interior, www.doi.gov
- Department of State, www.state.gov
- Environmental Defense Fund, www.environmentaldefense.org
- Environmental Protection Agency, www.epa.gov
- Federal Bureau of Investigation, www.fbi.gov
- Government Accountability Office, www.gao.gov
- Global Technology Partners, www.gtp1.com/
- House Committee on Science, http://science.house.gov/
- Lockheed Martin, www.lockheedmartin.com/
- NASA, www.nasa.gov/
- National Academy of Sciences, www.nas.edu/
- National Imagery and Mapping Agency, http://egsc.usgs.gov/nimamaps/
- National Institutes of Health, www.nih.gov
- National Science Foundation, www.nsf.gov/
- Northrop Grumman Corporation, http://www.northropgrumman.com/
- Pew Initiatives, www.pewtrusts.org
- RAND Corporation, www.rand.org/
- Raytheon Company, www.raytheon.com
- Rockwell Automation, http://www.rockwellautomation.com/
- Science Applications International Corporation, Inc. (SAIC), www.saic.com/
- SRI International, www.sri.com/
- Stockholm Environment Institute, http://www.sei-international.org/
- Tellus Institute, www.tellus.org
- Union of Concerned Scientists, www.ucsusa.org
- Winrock International, www.winrock.org/
- World Bank, www.worldbank.org

Demand and Future Challenges of Profession

Public sector employers have traditionally hired more science and technology policy graduates than any other employer. Federal agency demands have increased since September 11, 2001 because of the need for science and technology experts working in national security policy plus computer and telecommunications issues, as well as public health and environmental hazards. Continuing growth in demand at the state level, where there is also a need for scientific and technical policy expertise, is contingent on the ability of states to overcome present fiscal cutbacks. In the international arena, there is a need for science and technology policy specialists to assist with bilateral negotiations, agreements, research, and grants management, especially around issues such as genetic engineering and its effect on international trade and health policies.

Private sector employers have tended to hire science and technology graduates with engineering or technical backgrounds and excellent analytic skills. Openings also occur in regulatory, strategic planning or external relations departments for candidates with extensive congressional or federal experience. In research and consulting organizations that serve the federal government, there is a growing demand for science & technology specialists, especially for those with expertise in the environment, telecommunications, the

conversion of defense industries, public health issues, and technology transfer.

There is increasing awareness of the economic, political, and social consequences of decisions in the science and technology policy field in such areas as computers and telecommunication regulation, genetic engineering, cloning, biological weapons development, and global climate change as well as other technological areas. The need to build bridges and integrate diverse national and international institutions linking governments and universities with the private sector and with newly emerging consortia of businesses and research organizations is becoming increasingly important. In addition, enhancing the scientific literacy of the public is paramount to making better political and societal decisions about science and technology. Expertise in science, technology and public policy will be essential to help nations, citizens, and industry recognize their common interdependence, their common problems and to agree on solutions and ways to pay for them.

Resources For More Information

Associations/Websites

- AAAS Guide to Graduate Education in Science, Engineering and Public Policy, http://www.aaas.org/spp/sepp/sepsl.htm
- American Association for the Advancement of Science, www.aaas.org
- American Chemical Society, www.acs.org
- American Physical Society, aps.org
- Association for Public Policy Analysis and Management, http://www.appam.org
- Federation of American Societies for Experimental Biology, www.faseb.org
- National Academy of Sciences, www.nas.edu

Directories (Available in career library)

- EPA's National Network for Environmental Management Studies Fellowship Program, Catalog for 2003, Environmental Protection Agency (2003)
- The Complete Guide to Environmental Careers, CEIP Fund, Island Press (1989)
- The Environmental Career Guide, Nicholas Basta, John Wiley & Sons, Inc. (1991)
- 2002 Conservation Directory, The National Wildlife Federation, Island Press (2002)
- World Directory of Environmental Organizations, 6th edition, Ted Trzyna (Editor), International Center for the Environment and Public Policy (2001)

Publications

AAAS Guide to Graduate Education in Science and Engineering and Public Policy, the American Association for the Advancement of Science (online at www.aaas.org/)

Graduate Education and Career Directions in Science, Engineering, and Public Policy, Teich, Albert H., Barry D. Gold, and June M. Wiaz (1986)