Science and Technology Policy Issues of Concern to Ohio's Leaders: A Report of the Science Policy Advisory Committee of The Ohio Academy of Science

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ABSTRACT. **Biotechnology, education reform, environmental protection, technology development, and cancer prevention were the leading science and technology policy issues most on the minds of Ohio's leaders at the end of 2000 according to a mail-response survey by The Ohio Academy of Science. Biotechnology received the greatest number of mentions (9) out of 108 specific issues identified by 38 respondents who identified up to five science and technology policy issues. The survey audience included legislators, professional organizations, registered lobbyists, university presidents, corporate vice presidents for R&D, regulatory agency directors, state and local elected officials, and environmental groups. The results of this survey will serve the Academy's continuing effort to provide informed scientific advice to Ohio.**

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INTRODUCTION

In late 2000, the Science Policy Advisory Committee of The Ohio Academy of Science began to organize state scientific and technology resources to address science policy issues. The Committee's first objective was to identify science policy issues of concern to Ohio's leaders in areas such as government, academics, technology, and the environment. Later the Committee will involve the Academy membership in the issues' consideration, and prioritize and technically elaborate these issues for wider communication. The Committee has identified the most important issues for consideration, and in doing so will serve the Academy's continuing effort to provide science policy advice to Ohio's leaders.

MATERIALS AND METHODS

To survey the science and technology issues of concern to the state's leaders, over 400 requests for science policy concerns were mailed with personalized letters. The survey audience included legislators, professional organizations, registered lobbyists, university presidents, corporate vice presidents for R&D, regulatory agency directors, state and local elected officials, and environmental groups.

The mailing included a personalized letter; a long form and short form open-ended questionnaire; a comprehensive, alphabetical list of science and technology policy issues; and a return-mail envelope. Recipients were asked to identify and elaborate on the top five science policy issues perceived or anticipated for Ohio.

RESULTS

Interesting and thoughtful responses (n = 38) were received from all groups, including ten percent of the members of The Ohio General Assembly. Overall responses, some of which provided significant detail, fell into five primary areas: biotechnology, education reform, environmental protection, technology development, and cancer prevention. Tables 1 and 2 are verbatim summaries of the specific issues identified by respondents, with biotechnology receiving the greatest number of mentions (9). Figure 1 conceptually interprets and summarizes the major categories of responses.

TABLE 1

Initial tally of science and technology policy topics with two or more mentions.

Nine Mentions
Biotechnology
Four Mentions
Cancer Prevention
Government/University Partnerships in Science
Three Mentions
Education Reform
Environmental Protection
Technology Development
Technology Education
Two Mentions
Brownfield Recovery
Cloning
Ethical Dilemmas
Genetic Testing & Policy
Intellectual Property
Medical Privacy
Politics of Education Reform
Public Understanding of Science
Science Education Standards
Urban Sprawl
Water Quality

TABLE 2

Verbatim, alphabetical list of all issues mentioned. Number following issue indicates the total number of times topic was mentioned.

Ability of K-12 Science Educators
Aerospace
Aging of the Baby Boomers
AIDS
Balancing Conservation of Natural Resources vs. Needs of Population
Bio Food Growth
Biodiversity
Bioethics & Cloning
Biological Invasions
Biological Warfare
Biotechnology (9)
Biotechnology Growth
Bolstering Science Education
Brownfield Recovery (2)
Cancer Prevention (4)
Civic Participation and Leadership
Climate Change
Cloning (2)
Combined Sewer Renovation
Communication & Technology
Computer Technology
Countering Terrorism
Creationism
Digital Divide
Diseases
Drinking Water Quality
Early Science Education
Education Reform (3)
Education Standards
Education – Strive for Excellence – Not Just "Passing"
Energy & Environment
Energy Use and "Production"
Environmental Policy – Next Generation
Environmental Protection (3)
Escalating Cost of Doing Research
E-Security
Ethical Dilemmas (2)
Family Violence
Farm Land Preservation
Flood Control
Food Safety
Future of Computing & Telecommunications
Future of Global Market
Future of US Economy
Gene Selection
General Scientific Literacy
Genetic Predisposition Factors Knowledge
Genetic Testing & Policy (2)
Global Climate Change
Global Warming
Government – University Partnerships in Science (4)
Hazardous Waste Disposal
High Energy Physics Investment
High School Graduation Requirements

TABLE 2 (*Cont.*)

Importance of a Complete "Well-Rounded" Education
Increased Science Funding
Infant Care and Child Development
Information Technology – Analysis of Databases
Integrated Pest Management
Intellectual Property (2)
Internet Privacy
IT Venture Capital
K-12 Higher Education Curriculum
K-12 Math, Science, Engineering, Technology, Education
Lack of US Students to Enter the Sciences
Land Use
Legal Challenges
Long Term Healthcare
Longevity of Life with Quality
Medical Privacy (2)
Missile Defense
Natural Disasters
Need More Granting Agencies to Provide Dollars for High-risk Research
Nuclear Waste Disposal
Nutrition
Patented Genes
Pathophysiology of Addictions
Politics of Education Reform (2)
Public Education for Supporting Science & Research
Public Understanding of Science (2)
Public Utility Reform
Public vs. Private Research
Qualifications, Competency, and Training of Science Teachers in Junior High and High School
Recycling of Materials
Refocusing on US Math and Science Education
Reform of Teacher Training
Reforming Undergraduate Science Education
Resources for Educational Facilities Teaching Undergraduate Science
Role of National Labs
Science & Math Teacher Shortage
Science Education in K-12
Science Education Standards (2)
Shortage of RN's & Doctors in Rural Hospitals
Shortage of Science Teachers
Social Ills
Teacher Shortage
Technology and Growth
Technology Development (3)
Technology Education (3)
Tort Reform
Transportation
Urban Education
Urban Sprawl (2)
US Policy to Control "International Copying" of US Inventions
War Devastation
Waste Disposal
Water Quality (2)
Water Scarcity

DISCUSSION

Starting in 2002, to assure consideration by a wider audience, these concepts or issues will be raised for consideration by the Academy membership via its web page (http://www.ohiosci.org), through this article, and by the media. The wide range of issues or topics identified by respondents (108 different issues) reflects a healthy interest in many science and technology based public policy issues. Virtually all of these issues require contemporary knowledge of science for their full understanding, discussion, and resolution. Aside from some metropolitan clubs, the OP-ED pages of newspapers, and some hearings in the Ohio General Assembly, few, if any, forums or mechanisms exist for the inter-

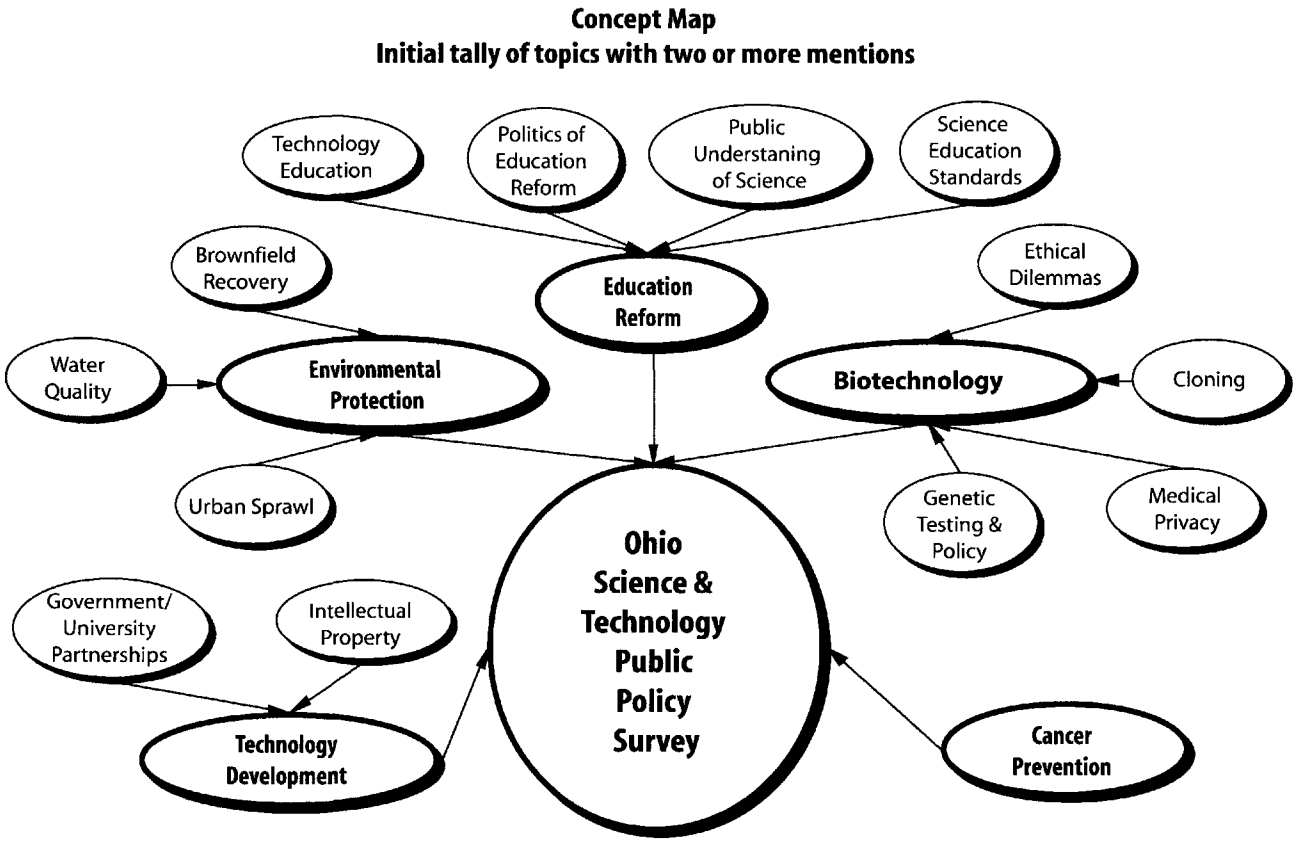

FIGURE 1. Conceptual interpretation and summary of major categories of responses.

action of policy leaders with Ohio's scientific community as embodied in the membership of The Ohio Academy of Science. The results of this survey will serve the Academy's continuing effort to provide informed scientific advice to state and local government.

Although this survey was conducted in 2000, such issues as biotechnology, education reform, environmental protection, technology development, and cancer prevention continue in the popular press. For example, education reform as embodied in the recent debate over the inclusion of evolution and the exclusion of intelligent design in the first drafts of Ohio's *Science Education Standards* has played out on front page articles and on the editorial and OP-ED pages of most Ohio newspapers. This issue also has appeared in *Time, The New York Times, The Washington Post, Science* magazine, and on the British Broadcasting System. (See a small sampling of stories in the references at the end of this report.)

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