

1993



**Research
Triangle
Institute**

1993 Annual Report

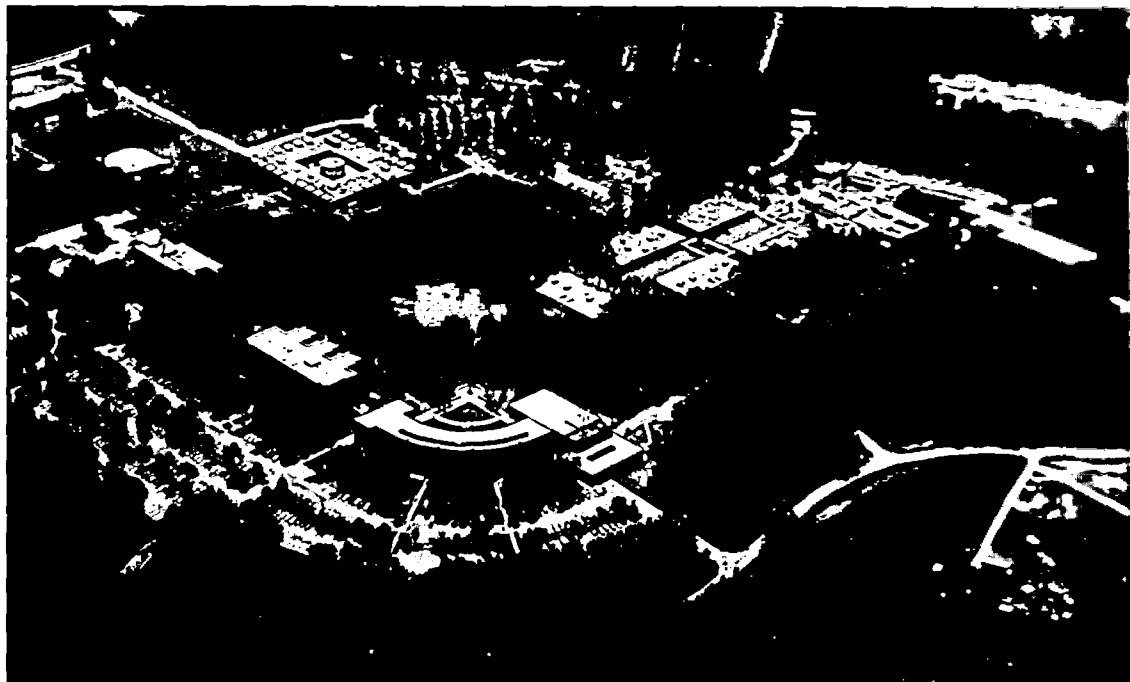


RTI

Introduction

On the Cover: In 1993, RTI opened a new Medicinal Chemistry laboratory building. Early in 1994, RTI will reopen the existing Hermann Building as a laboratory for multidisciplinary research in chemistry and life sciences. This will complete a five-year project in which RTI has expanded and reconstructed most of its laboratories for chemical and biological research.

Above: RTI's main facility in the Research Triangle Park includes 565,000 square feet of laboratory, computer and office facilities.



"Change" has become such a common theme in CEOs' statements that it has nearly lost its meaning. Yet as RTI completes its 35th year, external change has never been more profound, and how the Institute proposes to adapt has never been more important to clients and to RTI staff.

RTI relies on decentralized decision-making by research managers who are close to the clients RTI serves. This ensures that the Institute's

priorities match the nation's needs for applied research in public health, medicine, environmental protection, advanced technology and social policy.

This approach, however, risks overlooking the broader issues that influence those needs. In 1993 we established a broadly based planning process that brings RTI's research and administrative managers, officers and staff together. These people are coordinating their efforts to adapt RTI and its research programs to the future we all share.



These efforts focus on the future, but are grounded in the values of those who founded RTI and nurtured its growth. These values, which shape RTI's service to its customers, are presented on the following page.

Tom Wooten, President
January 1994

Mission

RTI is dedicated to improving the human condition through multidisciplinary research, development, and technical services that meet the highest standards of professional performance.

Values

Integrity. We perform with the highest principles of individual and group integrity and honesty. We communicate openly, sensitively, and realistically with each other and with our clients.

Excellence. We conduct our research, administrative, and support activities with excellence as a fundamental goal, providing our customers with exceptional value and delivering on our promises.

Innovation. We encourage the independent thinking and entrepreneurship of our staff. We employ the team approach to foster a vision for the future, and we utilize multidisciplinary collaboration to produce innovative approaches to meet the requirements of our clients.

Respect for the Individual. We treat one another fairly, with dignity and equity, and maintain a work environment that motivates each of us to develop to our full potential.

Fiscal Responsibility. We operate with the fiscal responsibility that assures cost competitiveness and continuing financial strength.

Respect for the Institute. We recognize that the strength of the Institute is our collective commitment to its values, goals, and practices.

1993 Operating Highlights

Research Triangle Institute's revenue was \$121.1 million in the year ending September 30, 1993, a 2.6% increase from the previous year.

At the end of the fiscal year RTI's regular staff included 1,472 people, compared with 1,523 a year earlier and 1,435 two years ago. Two-thirds of RTI's staff are professional and technical specialists working in research programs.

RTI's revenue comes mainly from competitively won contracts for applied research and development in a wide range of chemical, life, physical, statistical, and social sciences, as well as engineering.

Research for industry continued a decade-long pattern of strong growth, increasing to \$17.3 million, 14.5% of overall activity. This work is for companies in industries such as biomedical products, electricity generating, electronics, manufacturing, and chemicals.

The US Department of Health and Human Services (DHHS) remained RTI's largest client, accounting for 40.3% of the RTI total. Most of this DHHS activity is with the National Institutes of Health in research to help prevent and treat diseases such as cancer and public health threats such as drug abuse.

The US Environmental Protection Agency continued to be among RTI's most important clients, accounting for 16.7% of technical activities in 1993, up slightly from 16.6% the previous year.

Research for the US Agency for International Development grew from \$8.4 million last year to \$9.6 million, 7.9% of the RTI total.

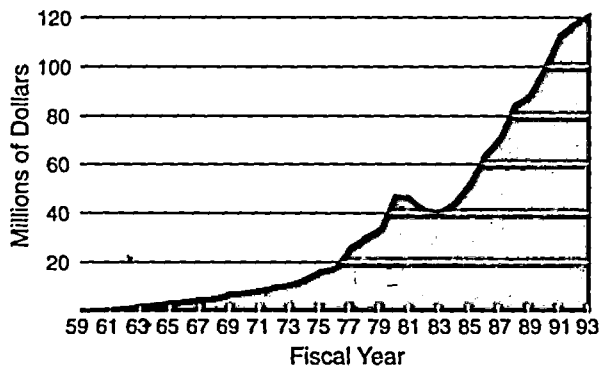
Other major federal sources of funding for RTI's scientists are the US Department of Defense (7.1%), the US Department of Education (4.7%), and the National Aeronautics and Space Administration (2.5%).

Organizations such as the World Bank, the United Nations, and US state and local governments accounted for 1.5% of technical activities in 1993.

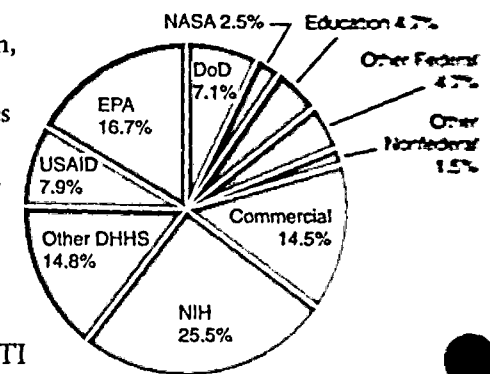
The Institute's physical plant includes a 565,000-square-foot research and headquarters facility in the center of the Research Triangle Park, and 23,000 square feet at four other U.S. locations. In addition, RTI has project offices in seven nations.

Construction was completed in 1993 on a 58,850-square-foot Medicinal Chemistry laboratory building on the main campus. In addition, renovation of most existing chemistry and biology laboratories will be finished in 1994.

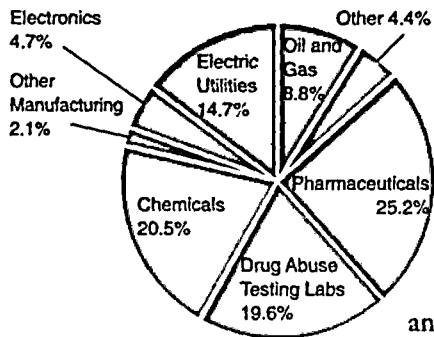
Research Revenue



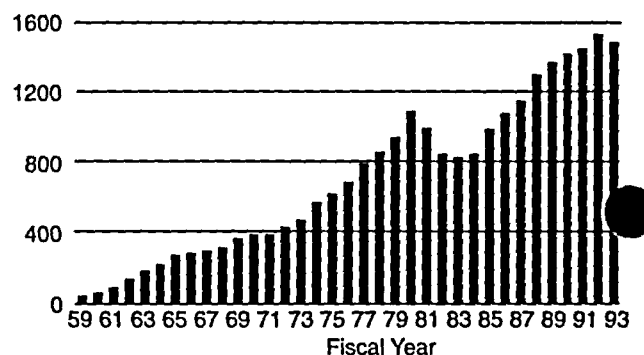
Sources of Revenue



Private Sector Revenue



Staff



Public Health and Medicine

Prevention is a powerful public health tool, and RTI is expanding its work to determine the most effective approaches to prevent risk behaviors, drug and alcohol abuse, violence and mental illness. RTI develops and demonstrates effective public health efforts to encourage healthy lifestyles via community-based interventions on issues such as smoking, diabetes, drug abuse and HIV.

RTI conducts research on HIV and other retroviruses in the U.S. and abroad, conducting epidemiology, clinical research, prevention research, needs assessments and pharmaceutical R&D.

Women's health has been recognized as a unique medical and public health concern, and RTI has responded by coordinated application of its epidemiologic, clinical, survey and life sciences research capabilities.

As the U.S. health-care system changes, RTI is applying its broad-based experience in applied statistical research, policy analysis and economic analysis for improved health-care utilization, access, quality, financing and cost-effectiveness. RTI is developing vital information on the needs of people who have the greatest needs for health care, such as the elderly, children, minorities and those with illnesses such as asthma, diabetes, cancer, AIDS and addiction.

RTI develops new pharmaceuticals through applied research in natural products chemistry, molecular modeling, biochemistry, immunology, isotopic synthesis, pharmacokinetics and pharmacology. RTI assesses the potential of new therapeutic compounds through toxicology and clinical research. This research focuses on applications such as contraception, central nervous system disorders, cardiovascular disorders, cancer, parasitic infections and infectious diseases.

With biomedical engineering and computational intelligence methods, RTI develops medical devices and reliable software for drug delivery, diagnostics, sensory prosthetics and clinical monitoring.

RTI helps developing nations realize the public health benefits of basic services for water, sanitation and disease prevention.



Epidemiology



Pharmaceutical R&D

Research Priorities

Environmental Protection

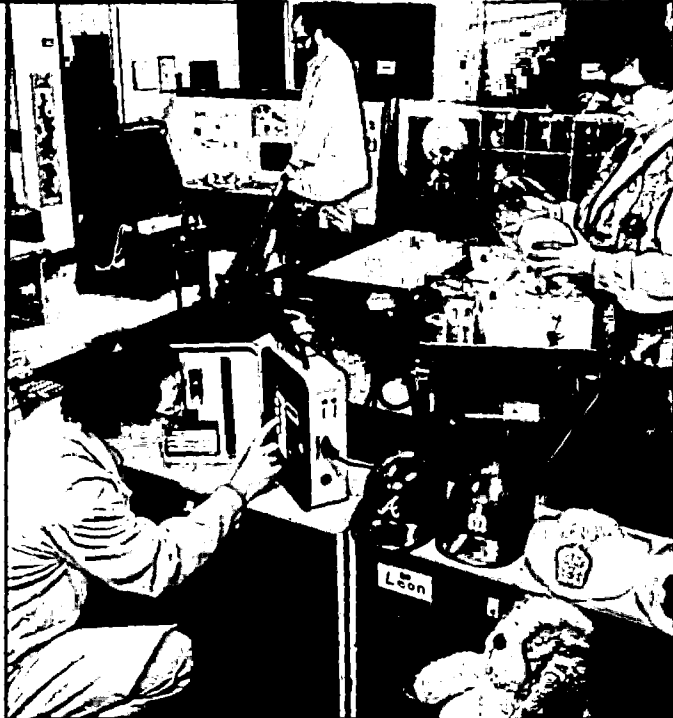
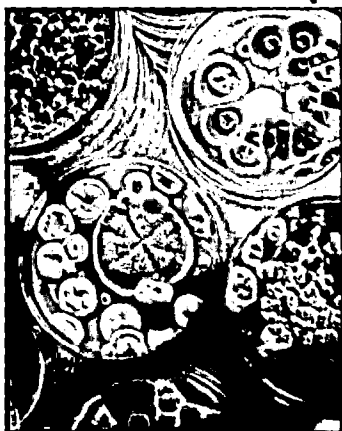
RTI continues to be a leader in understanding the ecologic, health, economic and social impacts of the release of pollutants. Now RTI is helping industries such as chemicals, energy and consumer products to realize the benefits of pollution prevention. This effort relies on RTI's unique ability to combine economic analysis, regulatory support and technology development.

Indoor air quality is a significant factor in human exposure to toxic pollutants. RTI did pioneering research to identify this issue, continues to improve understanding of it, and now is developing cost-effective methods to address its effects on human health.

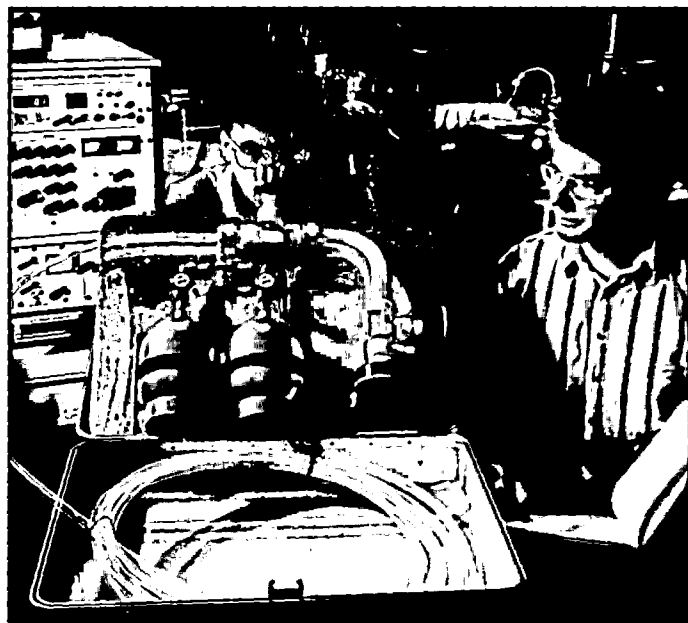
To focus environmental decisions on the most significant chemicals, RTI applies chemical, environmental measurement, toxicological, biological, biomedical engineering and statistical methods to determine the exposure and health effects of xenobiotic compounds in animals, humans, plants, foods and environmental media. In addition, RTI develops improved methods in toxicology, genetics and environmental measurements.

Regulatory and public health analysts at RTI conduct risk assessments and combine the results of a comprehensive range of applied research to recommend cost-effective policies for clean air, clean water, hazardous materials management and reduced exposure to toxic pollutants.

As nations around the world expand, and in many cases rebuild, their industries, RTI helps them to develop and implement realistic pollution prevention and environmental cleanup policies at both local and national levels. RTI has extended its environmental policy and management skills into Central Europe, Asia and Africa.



Environmental microbiology



Exposure assessment

Research Priorities

Advanced Technology

In applied research for industry, RTI's scientists and engineers apply the knowledge and abilities they have developed in their federally funded research. The private sector's interest in using the Institute as a source of innovation has made industry RTI's fastest-growing source of R&D funding. RTI staff are responding with initiatives in dual-use technology, Small Business Technology Transfer Research, and outreach to both small and large companies.

Information technology provides the means to meet needs in many marketplaces, and RTI develops applications of virtual reality, multimedia, computational intelligence, signal processing, modeling and rapid prototyping.

New energy technology is needed both to improve efficiency and to prevent pollution. RTI has patented new clean-coal technologies, and has joined forces with industry to demonstrate methods for needs such as acid-gas prevention.

In semiconductor research, RTI continues to achieve successes with synthetic diamond materials, coatings, photovoltaic devices, novel transistor structures and low-temperature processing. Development of new surface cleaning and ultra-clean technology improves electronics manufacturing quality and helps meet environmental goals.

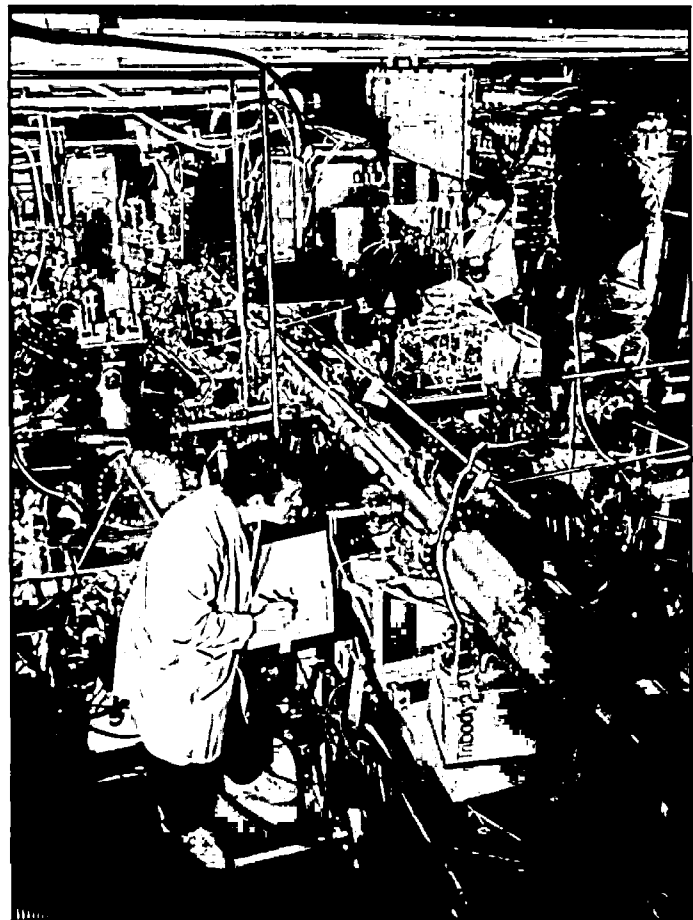
RTI develops and validates polymers that meet performance specifications such as strength, heat resistance, permeability and environmental degradability.

In aerospace technology, RTI analyzes flight and launch safety, develops and evaluates electromagnetic technology, and develops graphics applications for advanced flight systems.

RTI is in its 28th year of success in defining unmet marketplace needs, identifying relevant technology at NASA and other government laboratories, and involving industry in applying this technology for new products and processes.



Virtual reality



Semiconductor R&D

Research Priorities

Social Policy

For goals ranging from reduced drug abuse to reduced energy use, RTI's policy analysts seek the most effective use of public resources to achieve social benefits.

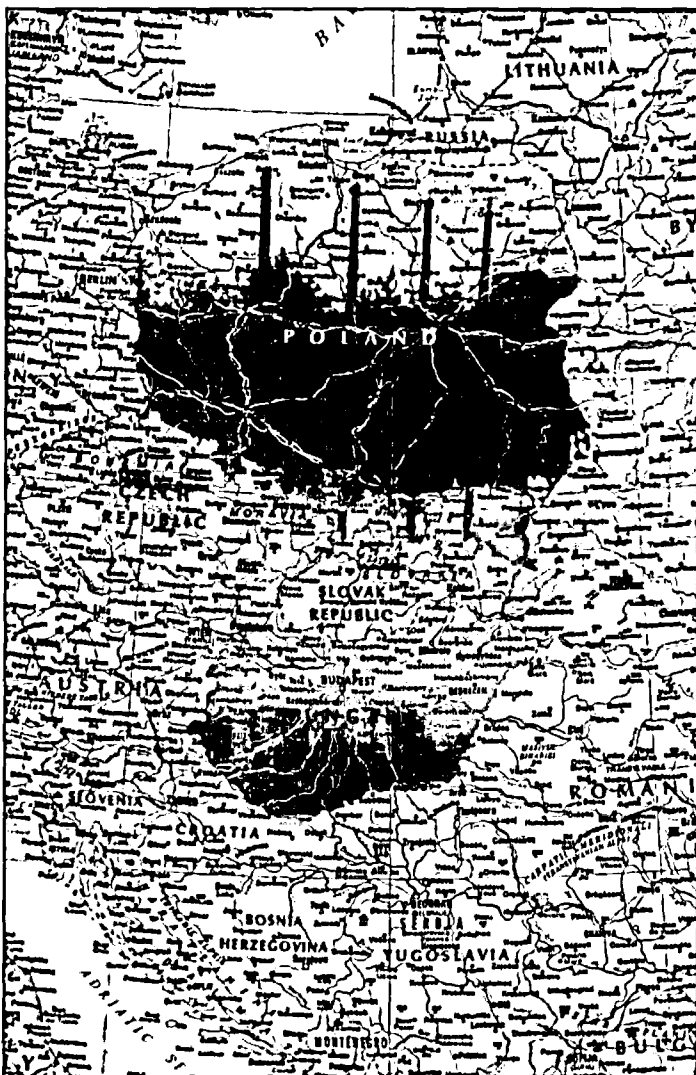
Through applied statistics and social research, RTI determines the extent, nature, context and causes of alcohol and drug abuse. RTI evaluates the effectiveness of prevention and treatment programs, and assesses impacts on employment and crime.

On four continents, RTI helps growing nations to enhance their human resources and social services and to strengthen their financial and infrastructure management. RTI also is helping develop the kinds of local government capabilities that are needed under democracy in newly independent countries such as Russia.

By evaluating education and training initiatives at the federal, state and local levels, RTI helps devise effective policies on issues such as vocational education, employment training, school-to-work transition, adult education, early-childhood education and drug-free schools.

RTI conducts survey research to provide fundamental national data for policy decisions on issues such as drug abuse, family growth, education, nutrition, employee benefits, public health and the environment.

Electric utilities rely on RTI to identify the best technologies and approaches for load management and conservation. RTI conducts technical and economic analyses of the energy usage effects of demand-side management programs and of the potential of alternative energy technologies.



International development



Drug abuse prevention and treatment research

Board of Governors and Corporate Officers

Of the 29 Governors: Five hold seats by virtue of their positions: the presidents of The University of North Carolina, Duke University and the Research Triangle Institute and the chancellors of NC State University and the University of North Carolina at Chapel Hill; three are specified in the Bylaws: William C. Friday, George R. Herbert and Marcus E. Hobbs; nine are appointed annually to represent Duke University, The University of North Carolina general administration, NC State University, and UNC-Chapel Hill; up to 15 Governors are selected from the business and scientific communities.

Chairman:

Earl Johnson, Jr.,* Chairman, Southern Industrial Constructors, Raleigh

Vice Chairman:

George R. Herbert,* President Emeritus, Research Triangle Institute

Executive Committee Chairman:

Marcus E. Hobbs,* University Distinguished Service Professor Emeritus of Chemistry, Duke University

John C. Bailar, III, Professor and Chair, Epidemiology and Biostatistics, McGill University

Erich Bloch, Distinguished Fellow, Council on Competitiveness, Washington, DC

Norman L. Christensen, Jr.,* Dean, School of the Environment, Duke University

Ivie L. Clayton,* Business Consultant, Raleigh

Pedro Cuatrecasas, President, Parke-Davis Pharmaceutical Research, Ann Arbor, Michigan

William C. Friday, President, William R. Kenan Jr. Fund, Chapel Hill

Pamela B. Gann, Dean, School of Law, Duke University

Steve C. Griffith, Jr., Executive Vice President and General Counsel, Duke Power Company, Charlotte

Paul Hardin, Chancellor, University of North Carolina at Chapel Hill

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Franklin D. Hart,* Interim President/CEO, MCNC, Research Triangle Park

I. Garland Hershey,* Vice Chancellor for Health Affairs, University of North Carolina at Chapel Hill

William G. Howard, Jr., Consultant, Scottsdale, Arizona

Nannerl O. Keohane, President, Duke University

Matthew Kuhn, President, EconTech, Research Triangle Park

William F. Little,* Vice President for Academic Affairs and Senior Vice President, The University of North Carolina

Richard L. McCormick,* Provost, Executive Vice Chancellor, and Vice Chancellor for Academic Affairs, University of North Carolina at Chapel Hill

Eugene J. McDonald, President, Duke Management Company

Larry K. Monteith, Chancellor, North Carolina State University

Charles E. Putman,* Executive Vice President for Administration, Duke University

Thomas A. Rose, Chapel Hill

C.D. Spangler, Jr., President, The University of North Carolina

Phillip J. Stiles, Provost and Vice Chancellor for Academic Affairs, North Carolina State University

Charles B. Wade, Jr., Winston-Salem

F. Thomas Wooten,* President, Research Triangle Institute

Phail Wynn, Jr., President, Durham Technical Community College, Durham

Members of the Corporation

The Members are the equivalent of RTI shareholders. As such, they elect the Governors who represent the business and scientific communities.

Of the nine Members of the Corporation: four are the chairmen and presidents of The University of North Carolina and Duke University; one is George Herbert, a lifetime Member of the Corporation; two are elected annually from and by the Duke University Board of Trustees; and two are elected annually from and by the Board of Governors of The University of North Carolina.

Members of the Corporation representing Duke University are: John W. Chandler, Washington, DC; John A. Forlines, Jr., Granite Falls; Nannerl O. Keohane, Durham; Thad B. Wester, Raleigh.

Members of the Corporation representing The University of North Carolina are: Samuel H. Poole, Raleigh; W. Travis Porter, Durham; Hon. Robert W. Scott, Haw River; C.D. Spangler, Jr., Chapel Hill.

Corporate Officers

RTI officers, including the research vice presidents, are elected by the Board of Governors.

F. Thomas Wooten, President

Alvin M. Cruze, Executive Vice President

William H. Perkins, Jr., Vice President, Finance

Rick C. Sisson, Treasurer

Walton J. O'Neal, Controller

Woody H. Yates, Assistant Treasurer

Suzanne P. Nash, Corporate Secretary

Carolyn J. Harris, Assistant Corporate Secretary

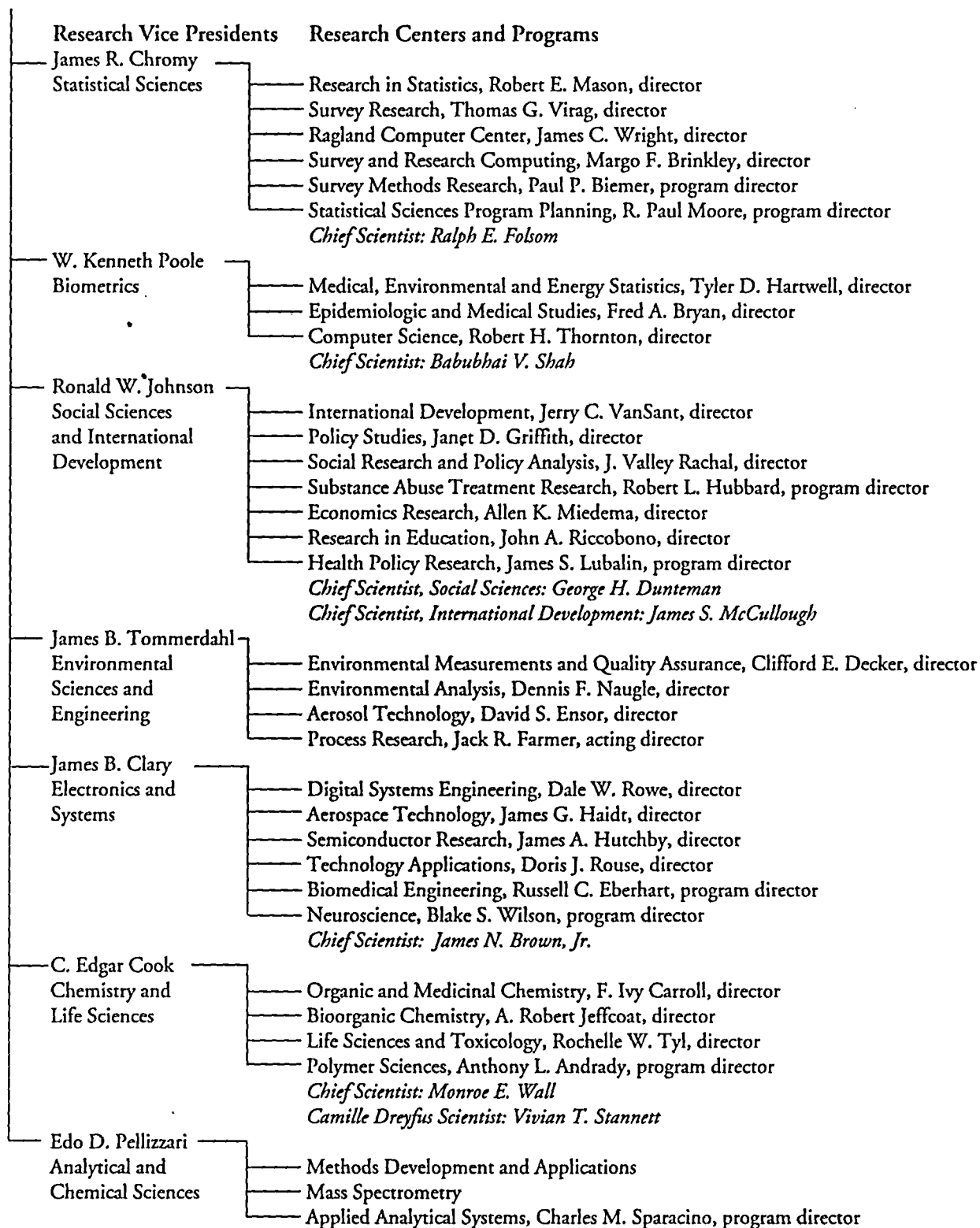
* Member, Executive Committee

Research Organization

Board of Governors
Executive Committee

F. Thomas Wooten, President ——— Administrative Organization

Alvin M. Cruze, Executive Vice President



Research Programs

Statistical Sciences

James R. Chromy, Vice President

Designs and conducts statistical studies and scientific sample surveys. Analyzes survey data and other scientific databases. Collaborates in policy, economic, social, environmental, and health research.

Telephone: 919-541-6220

FAX: 919-541-7198

Biometrics

W. Kenneth Poole, Vice President

Produces statistical information on health care, the environment, and energy management. Conducts clinical trials, epidemiologic studies, pollution surveys, and energy-use analyses.

Telephone: 919-541-6394

FAX: 919-541-6178

Social Sciences and International Development

Ronald W. Johnson, Vice President

Applies economic, sociological, psychometric, and policy analysis methods to develop and evaluate policies for governments and companies. Studies public health, education, social welfare, substance abuse, crime, public utilities, environmental protection, and economic development.

Telephone: 919-541-7482

FAX: 919-541-5945

Environmental Sciences and Engineering

James B. Tommerdahl, Vice President

Develops basic information, regulatory strategies, and technologies for environmental protection. Provides measurements, quality assurance, risk assessment, technology assessment, chemical engineering, air quality analysis, pollution prevention, and contamination control.

Telephone: 919-541-6885

FAX: 919-541-5929

Electronics and Systems

James B. Clary, Vice President

Develops electronic technologies for aerospace, manufacturing, and medicine. Technical areas include materials and devices, reliable high-performance systems, virtual reality, communications, automation, software engineering, and computational intelligence.

Telephone: 919-541-7379

FAX: 919-541-6965

Chemistry and Life Sciences

C. Edgar Cook, Vice President

Designs, makes and assesses pharmaceuticals, abused drugs, and agricultural, industrial and environmental chemicals. Performs research in synthetic and bioorganic chemistry, metabolism, immunology, toxicology, and polymers.

Telephone: 919-541-6673

FAX: 919-541-6499

Analytical and Chemical Sciences

Edo D. Pellizzari, Vice President

Develops fundamental analytical methods and applies them in research on exposure assessment, indoor air quality, pharmaceuticals, and toxicity research of pollutants, drugs, and industrial processes.

Telephone: 919-541-6507

FAX: 919-541-7208



Survey research



Analytical chemistry



Environmental Chemistry

Main Campus:
Research Triangle Institute
3040 Cornwallis Road
Post Office Box 12194
Research Triangle Park, North Carolina
27709-2194 USA

Telephone: 919-541-6000
FAX: 919-541-5985

Research Offices
1615 M Street, NW, Suite 740
Washington, DC 20036-3209
Telephone: 202-728-2080
FAX: 202-728-2095

3000 N. Atlantic Avenue, Suite 108
Cocoa Beach, Florida 32931-5029
Telephone: 407-799-1607
FAX: 407-799-0948

525 Butler Farm Road, Suite 108
Hampton, Virginia 23666-1564
Telephone: 804-766-3825
FAX: 804-766-3905

RTI Overview

Research Triangle Institute (RTI) is a non-profit contract research organization located in the center of North Carolina's Research Triangle Park. RTI was established in 1958 by the University of North Carolina at Chapel Hill, Duke University, and N.C. State University.

For clients in government and industry, RTI conducts applied and basic research in public health, medicine, the environment, advanced technology, and social policy.

Organization and Staff RTI's organization supports the formation of multidisciplinary teams to address complex research issues.

The staff of 1,475 includes 60 percent professionally trained research personnel, two-thirds with advanced degrees. Their backgrounds include more than 115 degree fields. Areas of training and experience include:

Social Sciences: economics, econometrics, benefit-cost analysis, evaluation research, urban and regional planning, international development, health services and health policy research, agricultural development, sociology, psychology, social psychology, education, business administration, public administration, municipal financial management, criminology, law, political science, and the humanities.

Survey Research: sample design and selection, survey planning and execution, data collection and management, and research and development of survey methodology.

Mathematics, Statistics, and Computer Sciences: data management and analysis, statistical methods development and analysis, biostatistics, clinical trials, epidemiology, computer-aided engineering, systems software, software verification, computer assurance, modeling, and virtual reality.

Environmental Sciences and Engineering: pollution prevention, environmental controls and engineering, environmental chemistry, environmental health, industrial hygiene, hazardous materials management, and hydrogeological and earth sciences.

Chemical and Biological Sciences: analytical, organic, inorganic, physical, polymer, and medicinal chemistry; toxicology, pharmacology, genetics, neuroscience, biology, biochemistry, and microbiology.

Engineering and Physics: electrical, electronics, systems, computer, semiconductor, chemical, biochemical, energy, industrial, mechanical, manufacturing, materials, biomedical, aerosol, civil, petroleum, aeronautical, and transportation engineering.

University Affiliations RTI was created as the first scientific organization of North Carolina's Research Triangle Park, a science park based on the strengths of three universities.

RTI's capabilities are supplemented by frequent collaboration with university scientists. Additional relationships include adjunct faculty appointments and cooperative research.

Laboratory and Office Facilities RTI's main campus includes 565,000 square feet of laboratory, computer, and related facilities. RTI also has facilities at project locations in the U.S. and abroad.

Computer Facilities In-house facilities for data management/analysis, modeling, software R&D, computer-aided engineering and laboratory management include microcomputers, a computer center, and daily traffic with national and regional scientific networks.

Library Facilities The RTI Technical Information Center provides on-line information services. RTI subscribes to more than 1,000 professional periodicals. Specialized libraries are maintained in RTI research buildings.

RTI staff have on-line and courier access to the libraries of the nearby universities, which are cross-cataloged.

