2000

Research Triangle Institute

WEB-ENABLED PANEL SURVEYS

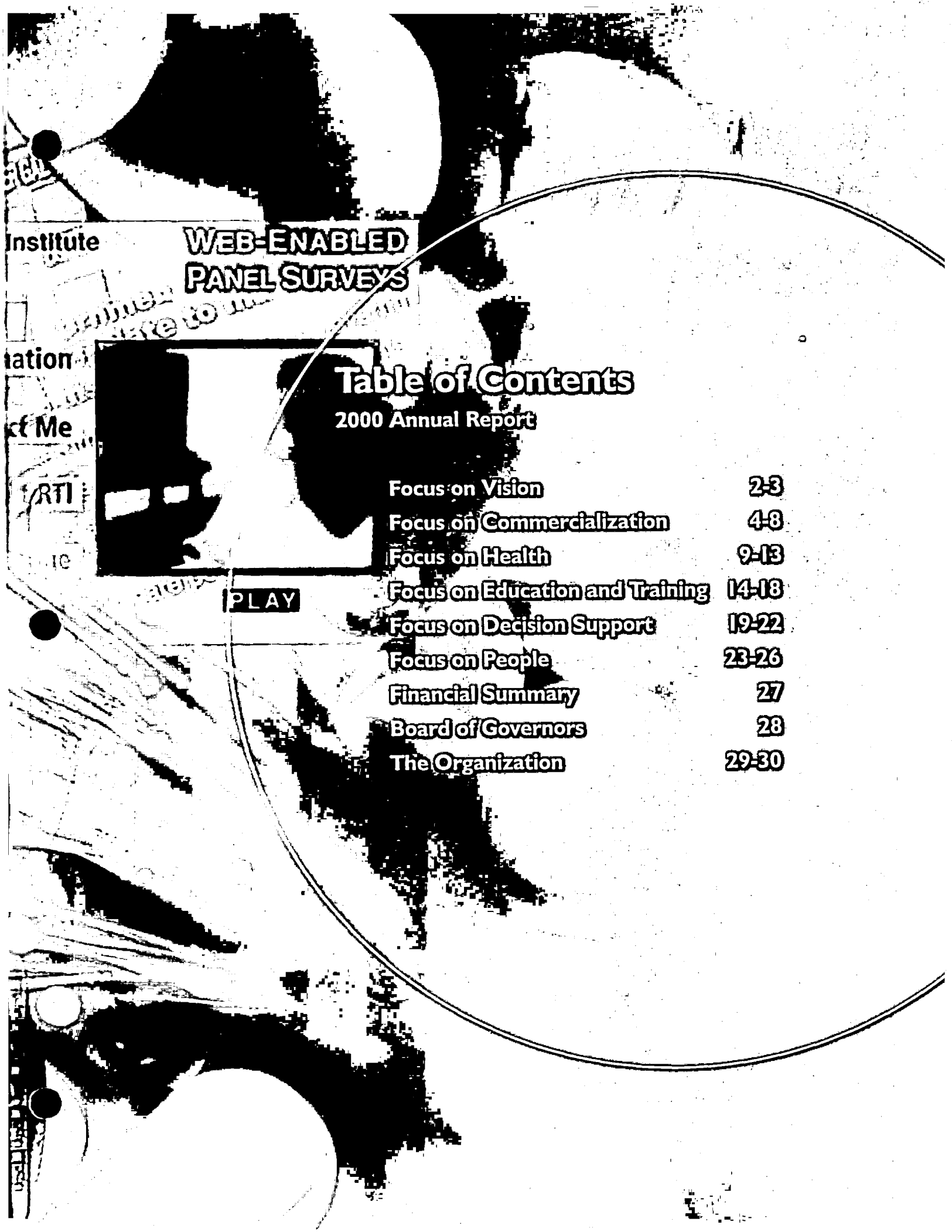
/RTI Research Triangle Institute

2000 Annual Report

About the Cover

One of the innovative changes we made in 2000 was to streamline the process of getting the results of our research into the marketplace. Commercializing our research generates cash for reinvestment in RTI, making it possible for us to thrive and grow. This, in turn, improves our ability to achieve our mission. The cover illustrates several activities that are aimed at getting RTI's research into the marketplace. These include launching a new company to commercialize technology that makes it possible to build 3-D integrated circuits and forming a new business unit focused on health economics, outcomes, and survey research for pharmaceutical and related industries. Other examples include working with industry to develop a process to reduce the sulfur content of gasoline and licensing a compound that has the potential to become the first drug for treating cocaine addiction.

C-112 molecule illustration on the cover and on page 6
Wayne Mascarella, Ph.D., RTI Chemistry and Life Sciences.



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2000 Annual Report

Focus on VISION

2000 was a year of innovation for RTI, made possible by the continued dedication and creativity of our staff.

By its very nature, RTI nourishes innovation. Researchers from over 125 disciplines continually realign themselves in project teams to tackle complex national and global problems. For example, in 2000, survey researchers, chemists, and child development experts developed new approaches for assessing children's exposure to environmental pollutants. Also in 2000, a multidisciplinary team of psychologists, ethnographers, and statisticians investigated innovative strategies for curbing the global spread of AIDS. You will read more about these efforts and others in this year's annual report.

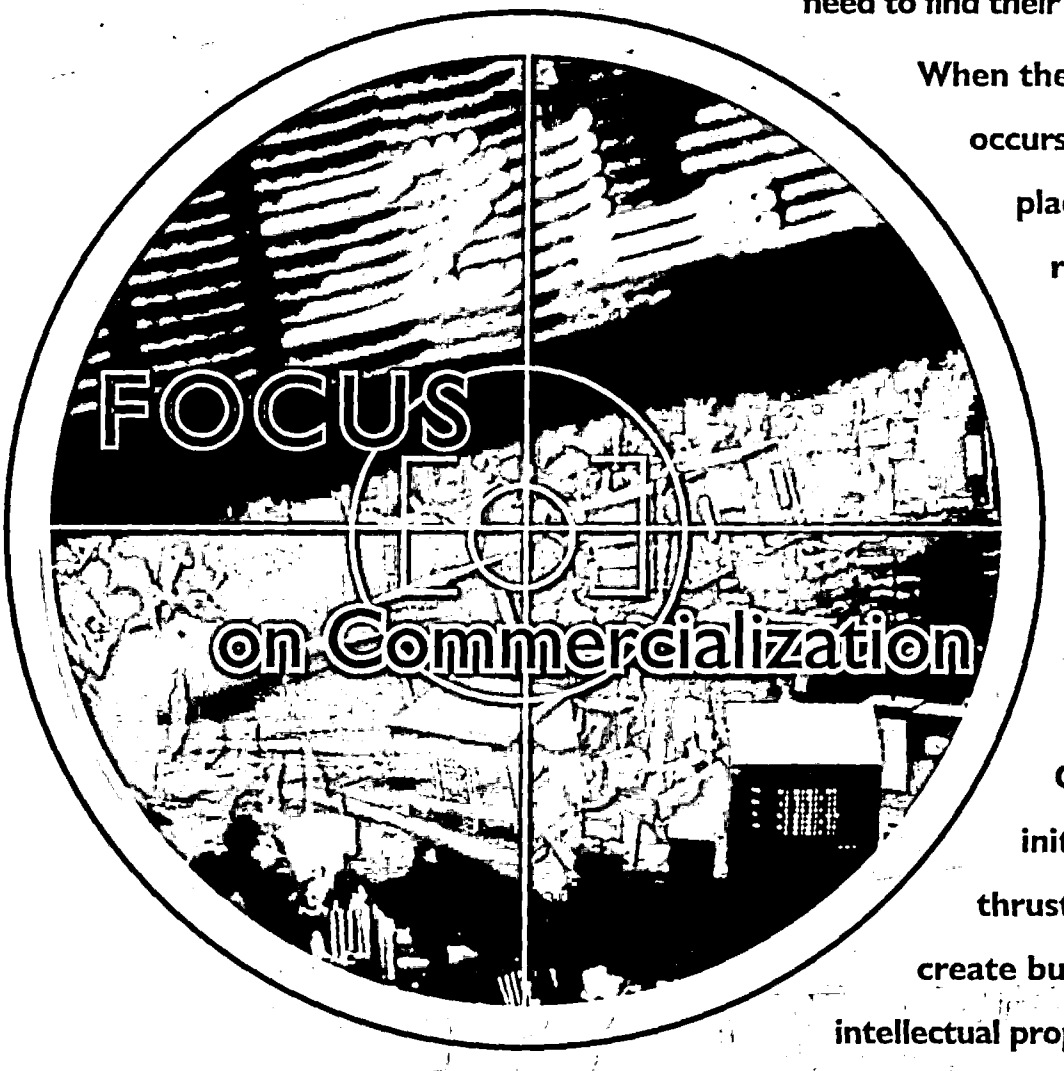
During the past year, we dedicated significant energy to strategic planning. We identified two objectives: to lead in innovation and to generate financial strength for reinvestment. To achieve these, we are developing and applying new science, technology, and systems throughout the Institute. We are also developing and integrating cross-Institute capabilities to capture new business opportunities, and we are working to commercialize intellectual property.

Our innovative approaches are working. We grew in size and stature during 2000, making progress toward achieving our vision of being recognized as the premier independent research institute in the world. RTI revenue grew 16 percent this past year, reaching $239 million and surpassing the year's goal of 15 percent growth. Net income continued to grow, increasing by 19 percent to nearly $10 million. Our staff increased from 1,738 to 1,826, and they received unprecedented peer recognition for their scientific accomplishments. Also during 2000, we opened new research offices in Portland, Oregon, and Pretoria, South Africa. RTI now has 11 locations on four continents.

As we grow, RTI will focus its considerable energies on commercialization, health research, education and training research, and decision support services. By concentrating our efforts in these areas of strength, we will be in a better position to fulfill our mission: to perform research and provide services that improve the lives of people around the world.

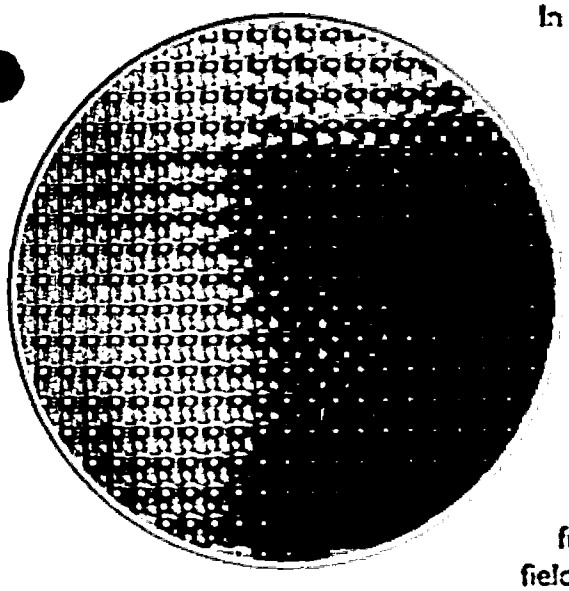
Victoria Franchetti Haynes

To fulfill our mission of improving the human condition, the results of our research need to find their way into the marketplace. When they do, an added benefit occurs. Success in the marketplace generates cash for reinvestment in further research and development, leading to even more discoveries that can improve the lives of people around the world.



Our commercialization initiative has two major thrusts. The first is to create businesses to exploit our intellectual property, and the second is to license our technology to others. To make sure this series of events is repeated as often as possible, RTI created three organizational entities: a Technology Ventures unit, a Commercialization Review Team, and an Office of Commercialization and Intellectual Property (OCIP). In addition, we crafted a new intellectual property policy to provide us with the flexibility we need to approach the marketplace with our technology. "Deals that were previously foreign to us are now on the table for consideration," explains Scott Merrell, OCIP senior director and counsel.

Ziptronix



In October 2000, RTI spun off a company—Ziptronix, Inc.—to commercialize a technology that makes it possible to build 3-D integrated circuits in existing foundries. This new design avoids the "integration penalty" that results when current technology is used to connect chips in packages or on circuit boards. Circuits fabricated using Ziptronix technology are faster, smaller, lighter weight and less expensive, and they consume less power than existing circuits. The possibilities for using Ziptronix integrated circuits in wireless, cellular, fiber optics, Internet, handheld, and graphics applications are endless.

Already, Ziptronix has secured $6.5 million in venture capital. The lead investor is Atlanta-based Alliance Technology Ventures. "Ziptronix has such a huge potential because it represents a fundamental technology. It can enable great strides in a number of fields," says RTI President Victoria Franchetti Haynes, Ph.D. "We are excited about this business because it is the first of many technologies that we plan to commercialize."

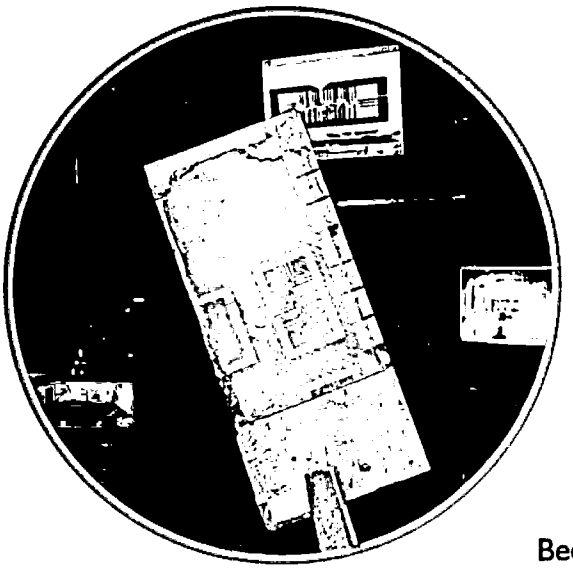
Virtual Emergency Medicine Simulator

Originally developed for the U.S. Army Medical Research and Materiel Command, RTI's Virtual Emergency Medicine Simulator (Virtual EMS) is also a valuable tool for students, educators, emergency medical technicians, nurses, physician assistants, and trauma physicians who want to sharpen their assessment and decision-making skills.

Virtual EMS is an interactive, multimedia, 3-D, virtual-reality-based simulation that provides realistic practice for trauma care providers. The RTI-developed software presents the user with trauma incidents—including gunshot wounds, vehicle collisions, falls, and explosions—and patients with real-time, true-to-life physiological behavior. Users also have access to a variety of tools to treat their virtual patients, including a stethoscope, penlight, bandages, dressings, splints, two-channel physiological monitor, intubation devices, cervical collars, and medications. Virtual EMS records all user interactions so they can be reviewed after a training session.

"Virtual EMS is the first in a family of simulation systems aimed at providing training for the medical community," explains Paul Kizakevich, RTI biomedical engineer. "Planned enhancements include additional trauma and interventions; pediatric patients; chemical terrorism agents; infectious disease, including bioterrorism agents; and disaster triage simulation."

Thermoelectric Technology

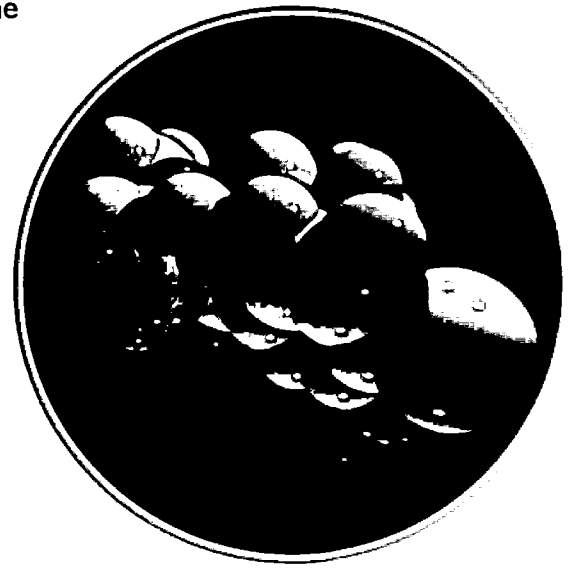


This year we made progress toward our goal of developing an affordable thermoelectric device through structural engineering at the nanoscale level. Using innovative, thin-film superlattice material deposited via an RTI-patented process, we developed a novel approach to improve the efficiency and lower the cost of thermoelectric devices. In addition, we filed several other patents for the application of this technology. Our major clients and partners have included the Office of Naval Research and the Defense Advanced Research Projects Agency. The military will continue to be a major user of thermoelectric technology in applications that range from the cooling of electronics and sensors to portable electric power generation.

Because thermoelectric devices historically have been relatively inefficient and expensive, they have not gained widespread use. However, our technology will make it possible to broaden the use of these devices in a range of emerging commercial applications, including high-performance microprocessors for visual computing, handheld devices, and cooling of multi-chip-module electronic packages. Early development efforts have already produced working prototype devices that can be applied to cool microelectronic circuits. Currently, we are in the beginning stages of commercializing this technology.

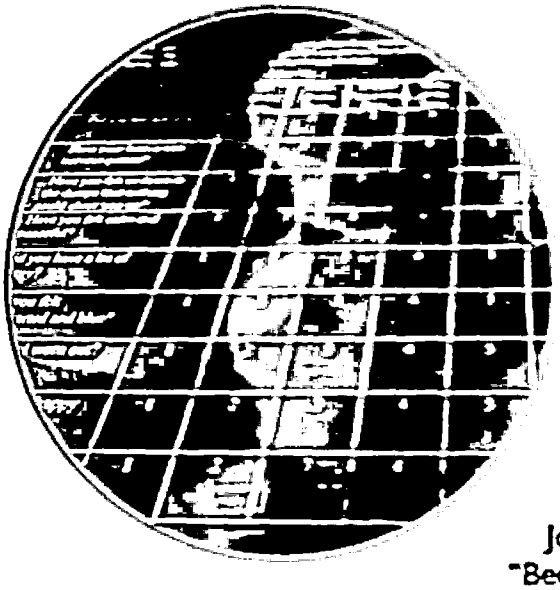
Cocaine Addiction Treatment

In 2000, RTI teamed with Addiction Therapies, Inc. (ATI), to win a National Institute on Drug Abuse (NIDA) cooperative agreement to support the development of a novel class of compounds that show promise as a treatment for cocaine addiction. The compounds were discovered and patented by F. Ivy Carroll, Ph.D., Vice President of Chemistry and Life Sciences, and by Michael Kuhar, Ph.D., now at Emory University. RTI has licensed the compounds to ATI, a biotechnology company that develops and commercializes medications for smoking cessation and for the treatment of drug addiction and alcoholism.



Basic research, largely supported by NIDA, has shown that cocaine addiction should be treated as a disease. At present, however, no medications are available for the approximately 1.2 million heavy users of cocaine in the United States and Europe who seek treatment each year to overcome their addiction. The four-year NIDA grant will support advanced preclinical studies and initial human clinical trials by a team that includes RTI, ATI, and three universities. It is one of the largest grants ever provided for development of a cocaine medication, and it is a result of NIDA's efforts to promote ties between government, industry, and academic scientists.

Health Solutions



RTI Health Solutions, RTI's newest business unit, started in October 2000. Their charge is to further develop—and, in fact, grow exponentially—the business in health economics and outcomes research, as well as survey studies, for the pharmaceutical, medical device, and biotechnology industries. Current clients include AstraZeneca, Bristol-Myers Squibb Co., Immunex Corp., GlaxoSmithKline, The Johnson & Johnson Family of Companies, Medical Scientists, Inc., Merck & Co., Inc., Novartis AG, and Pfizer.

"Market analysis showed that these industries have a large and growing need for rigorous independent studies, especially in collecting health outcomes data directly from patients," explains Josephine Mauskopf, Ph.D., RTI Health Solutions Executive Director. "Because of the experienced, multidisciplinary teams we can bring together to meet complex client needs, RTI Health Solutions is uniquely suited to do this type of research."

While Health Solutions remains part of RTI, its administrative and financial structures are designed to ensure success in the commercial arena. "This initiative is one of the most important new business models at RTI," notes RTI President Victoria Franchetti Haynes, Ph.D. "We are watching the innovative approaches used by the Health Solutions team closely."

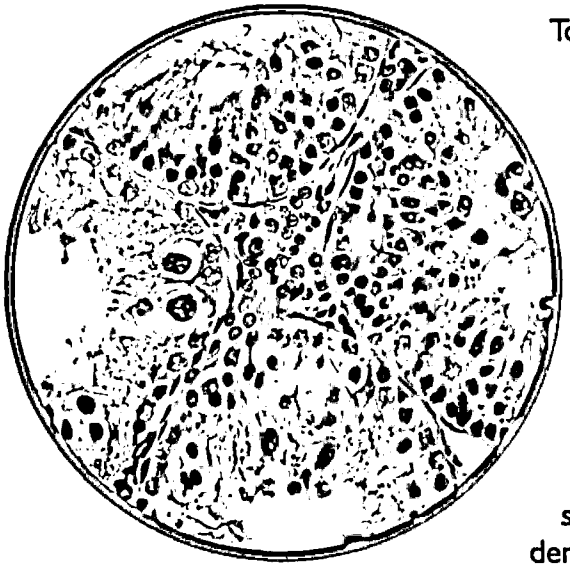
Program Evaluation

When Glaxo Wellcome (now GlaxoSmithKline) was planning a new effort to increase HIV testing and treatment in African-American communities, staff at the pharmaceutical company knew that assessing the program's impact was going to be a challenge. They turned to RTI for help because we have years of experience gathering sensitive information from hard-to-reach populations for government and other public sector clients.

"Glaxo Wellcome's initiative coincided with a basic public health goal—persuading a high-risk, underserved, socioeconomically disadvantaged population to get tested for HIV and to understand and access treatment options," explains senior epidemiologist Scott Royal, Ph.D., who led the study. "That goal is right in line with RTI's mission to improve the human condition."

Dr. Royal and his RTI colleagues developed and administered a baseline survey (a paper-and-pencil interview) to a random sample of 300 African-American households with annual incomes below $15,000. Months later, they administered the same survey to another random sample of 300 people, providing Glaxo Wellcome with valuable information about its program's effectiveness.

Toxicology Services



Toxicology support for commercial pharmaceutical [illegible] commodity chemical companies is a large and growing [illegible] research for RTI. In 2000, we worked with over [illegible] national companies providing toxicity and efficacy [illegible] product development, for preclinical pharmaceutical [illegible] and for commodity chemicals and pesticide [illegible]

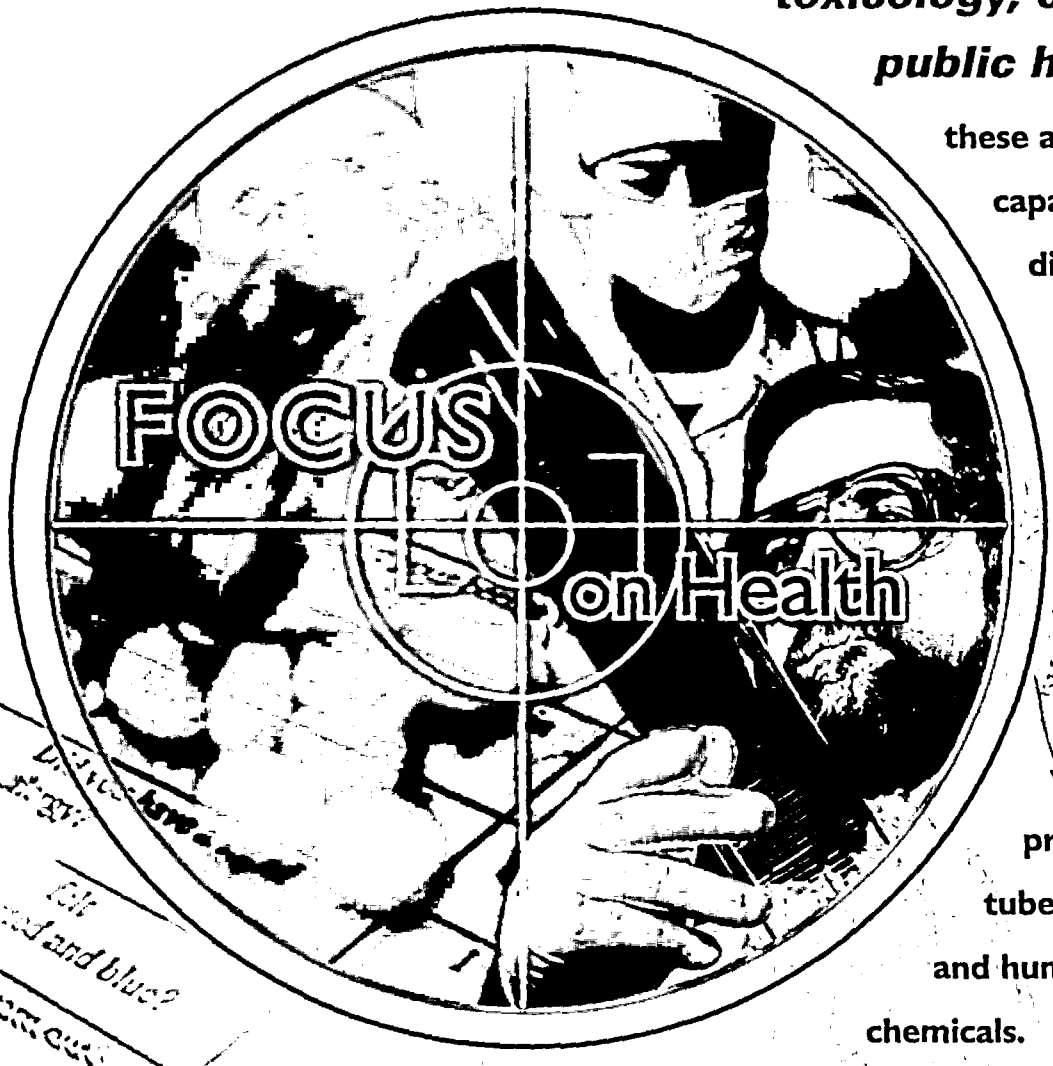
Our basic and applied research and testing services [illegible] wide range of toxicology studies for companies that [illegible] meet EPA, FDA, and other regulatory requirements. [illegible] we perform acute through chronic studies, reproductive and developmental toxicity studies, adult and developmental [illegible] studies, and endocrine toxicity and mechanistic studies. [illegible] services are commissioned by companies independently [illegible] demonstrate responsible care and good chemical stewardship. One study, led by RTI reproductive toxicologist Rochelle W. Tyl, Ph.D., and completed this past year, ranks as one of the largest, most definitive, and most comprehensive multigenerational studies to date. In 2001, RTI toxicologists are working to identify new opportunities and to develop ways to collaborate with researchers in other disciplines at RTI to meet the needs of the pharmaceutical, agrochemical, and commodity chemical industries.

Ultra-Clean Gasoline

Building on over 15 years of research aimed at finding ways to remove sulfur from coal, RTI researchers are now focusing their efforts on developing an inexpensive way to remove sulfur from gasoline. Low-sulfur fuels are important because sulfur contributes to noxious air pollutants and its presence in fuels reduces the effectiveness of catalytic converters. By 2005, EPA will require all cars to use low-sulfur gasoline.

RTI holds seven patents related to technology to remove sulfur from gasoline, and three patents are pending. Recognizing our strong technical base, the U.S. Department of Energy awarded us a cooperative agreement for $1.3 million in September 2000 to develop a process to reduce the sulfur content of gasoline. Compared to existing processes, the approach we are developing has lower capital costs, lower operating costs, and a higher yield of refined fuel. During the two-year project, we are planning to partner with industry to install the process we are developing at an existing oil refinery.

Epidemiology, statistics, environmental science, geography, economics, survey research, toxicology, chemistry, and public health research—



these are some of the many capabilities found in multi-disciplinary teams at RTI working to improve both human and environmental health. We have worked in these areas for over 30 years, and in 2000 we tackled some of the world's most complex problems, including AIDS, tuberculosis, drug abuse, and human exposure to toxic chemicals.

Also in 2000, we teamed with two area universities on additional projects that focus on health. With Duke University, we are evaluating the acute efficacy and safety of St. John's wort as a treatment for depression. And with the University of North Carolina at Chapel Hill, we are serving as an Evidence-based Practice Center.

In addition, much of our work continues to focus on environmental health. We provide a range of chemistry support to the National Toxicology Program, and through exposure studies, we are assessing the impact of environmental pollutants on people of all ages.

Preventing the Spread of AIDS

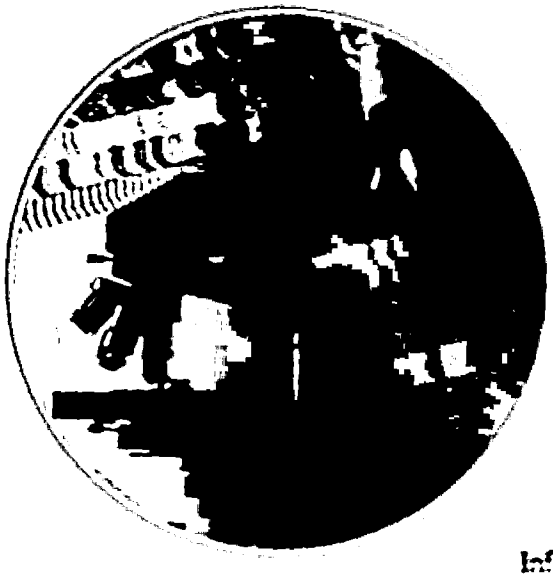
At the 13th International AIDS Conference held in [illegible] July 2000, AIDS was called the "most serious infectious [illegible] threat in recorded human history" and "Africa's worst [illegible] catastrophe since slavery." Clearly, much research is needed to bring the epidemic under control, both in Africa, where the epidemic is at its worst, and in the rest of the world. RTI researchers representing over 20 disciplines are working on several projects that aim to minimize new HIV infections and lessen the impact of the epidemic on people around the world.

For example, in a project for the National Institutes of Health, we are serving as the data-coordinating center for an innovative, global project to prevent the spread of HIV and other sexually transmitted diseases. We will be collecting data from six countries—China, India, Uganda, Peru, Russia, and Zimbabwe—using audio computer-assisted self-interviews that will be conducted in eight languages. In 2000, we coordinated ethnographic studies and assessed risk behaviors to develop prevention interventions appropriate for the six different countries. These interventions will be implemented in 2001 and 2002. Results will be measured, the lessons learned documented, and the information shared with researchers around the world.

Lessons Learned Locally, Shared Globally

Also in 2000, we shared results of a project for the National Institute on Drug Abuse with attendees at the 13th International AIDS Conference. Wendee Wechsberg, Ph.D., director of RTI's Substance Abuse, Treatment, and Evaluation program, presented the results of a woman-focused HIV-prevention program for African-American crack abusers conducted in Wake and Durham counties in North Carolina. "We found that the greatest reduction in risk behavior and the greatest improvement in social support occurred when participants were assigned to a more Afrocentric intervention," Dr. Wechsburg explains.

Besides the effectiveness of behavioral interventions, RTI researchers studied specific groups of people who seem to be at higher risk of contracting HIV, such as women probationers. We also looked at how best to deal with the mental health issues that AIDS creates. At the same time, we provided analytical chemistry services to researchers developing drugs to treat HIV infection. Also, we provided data to a biotechnology company about the most cost-effective methods of testing AIDS patients.



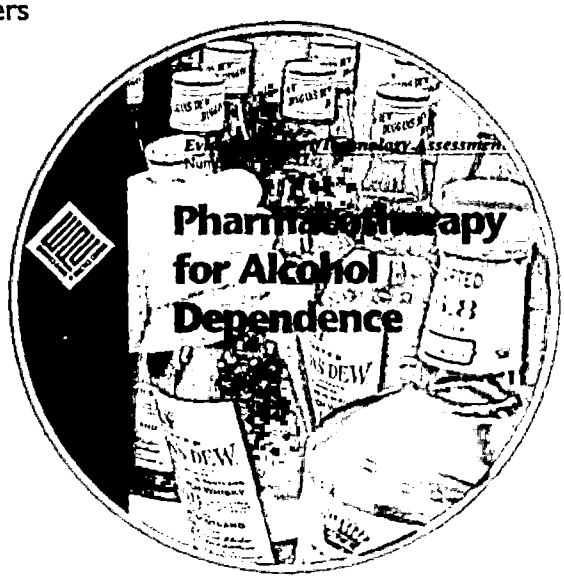
Tuberculosis

Tuberculosis (TB), one of mankind's oldest scourges, today kills more people than any other infectious disease. More than 2 million people died of tuberculosis last year, and with the spread of HIV/AIDS and drug-resistant forms of TB, the problem is growing. Although scientific advancements hold great promise for TB drug development, industry has had little incentive to pursue this market, believing that TB mainly affects those in developing countries who cannot afford to pay for medication.

Recognizing this dilemma, the National Institute of Allergy and Infectious Diseases established a comprehensive tuberculosis compound screening and technology transfer program for which RTI provides drug transfer support. This year, the Global Alliance for TB Drug Development, of which RTI is a member, is bringing together representatives from academia, public health agencies, and the pharmaceutical industry to accelerate the discovery and development of new cost-effective TB drugs. With support from the National Institutes of Health, we are working with the Global Alliance to assess global tuberculosis trends, analyze the market for new TB drugs, and identify promising compounds for TB therapy. We will present our findings to pharmaceutical companies and develop strategies for them to participate in developing promising compounds. To reduce the industry's cost and risk in TB drug development, RTI will facilitate the formation of public/private partnerships involving industry, the Global Alliance, and other organizations.

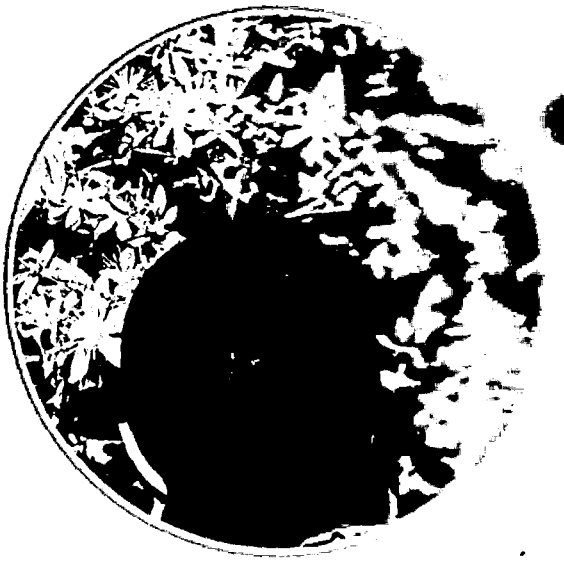
Evidence-Based Practice Centers

We continued our collaboration with the University of North Carolina at Chapel Hill in 2000 as one of 12 Evidence-based Practice Centers in the United States and Canada. These centers, funded by the U.S. Agency for Healthcare Research and Quality (AHRQ), review all the relevant literature on designated topics related to prevention, diagnosis, treatment, and management of common diseases and clinical conditions. Their systematic evidence reviews provide health care clinicians, administrators, and the public with important guidance for medical practice and health care decision-making.



For example, in December 2000, the RTI-UNC team released a report revealing that certain drug therapies and diagnostic tools can have a positive outcome on the treatment of preterm labor. Also with UNC, we are continuing to produce multiple evidence reports for the U.S. Preventive Services Task Force and the National Institute on Dental and Craniofacial Research. In other work, we are investigating the properties of tests intended to identify persons eligible for Social Security Administration disability on the basis of speech and language disorders. In addition, we are developing a report for AHQR on systems for grading the quality and strength of scientific evidence as input for a congressionally mandated study.

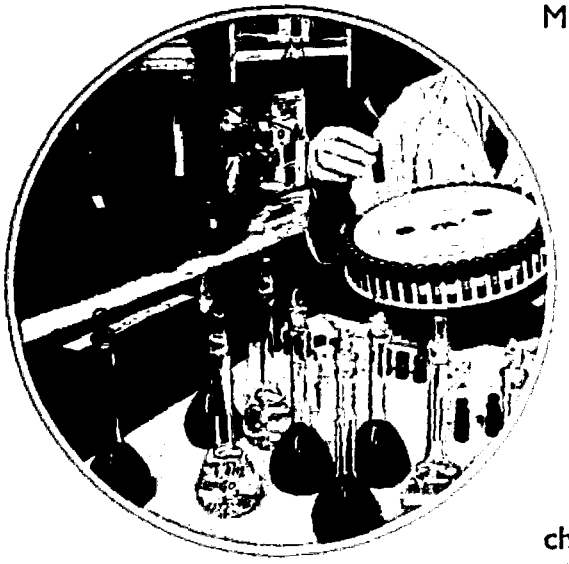
Evaluating St. John's Wort



St. John's wort is widely used in Europe to treat depression, but doctors in the U.S. are reluctant to prescribe it because U.S. researchers have not conducted definitive studies of its antidepressive properties. To address the need for such studies, the National Center for Complementary and Alternative Medicine and the National Institute of Mental Health funded a three-year study to test the efficacy and safety of a standardized extract of St. John's wort as a treatment for depression.

RTI is serving as the data management and statistical analysis center for the study, which is being coordinated by Duke University Medical Center and Duke Clinical Research Institute (DCRI). A total of 340 patients were enrolled in the study and were randomly assigned to one of three double-blind treatment groups: one that received St. John's wort, one that received a selective serotonin reuptake inhibitor, or one that received a placebo. Each treatment group was followed for an initial eight-week period. Subjects who responded to treatment were followed for an additional four months to determine if the acute efficacy and safety could be maintained for an extended period. Currently, RTI statisticians and programmers are working with clinical site management staff at DCRI to finalize and lock the database. They will then begin the final analysis. Results are expected in the summer of 2001.

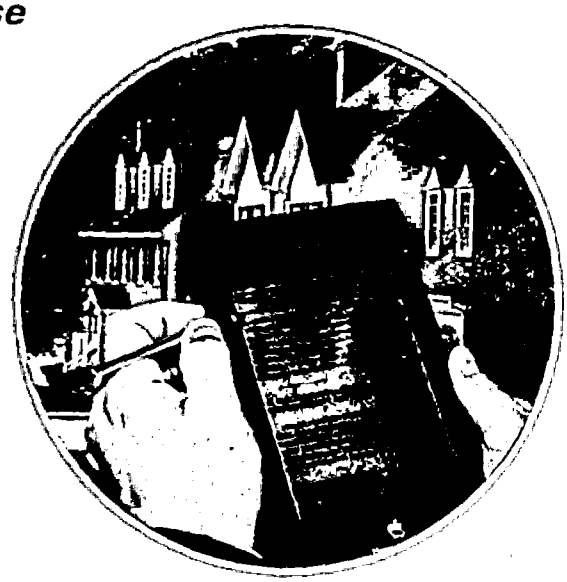
National Toxicology Program



More than 80,000 chemicals are registered for use in commerce in the United States. They are found in foods, personal care products, prescription drugs, household cleaners, industrial chemicals, and lawn care and agricultural products. While relatively few such chemicals are thought to pose a significant risk to human health, safeguarding public health depends upon identifying those that do.

To determine the effects of industrial and consumer chemicals and the levels at which they might become potentially hazardous to humans, the Secretary of the Department of Health and Human Services established the National Toxicology Program (NTP) in 1978. NTP coordinates toxicology research and testing and provides information about potentially toxic chemicals in industrial and consumer products to the public and to regulatory and research agencies. In addition, NTP researchers work to advance the field of toxicology. For the past 16 years, RTI has played a key role in providing chemistry support to NTP, and in October 2000, we were awarded a five-year contract, our fourth, to continue that support. RTI analytical chemists develop and apply chemistry and toxicological methods to ensure that the identity, purity, and stability of chemicals tested by NTP researchers are well established. Also, we conduct biological studies to provide information on the identity, distribution, and levels of some of the NTP test chemicals.

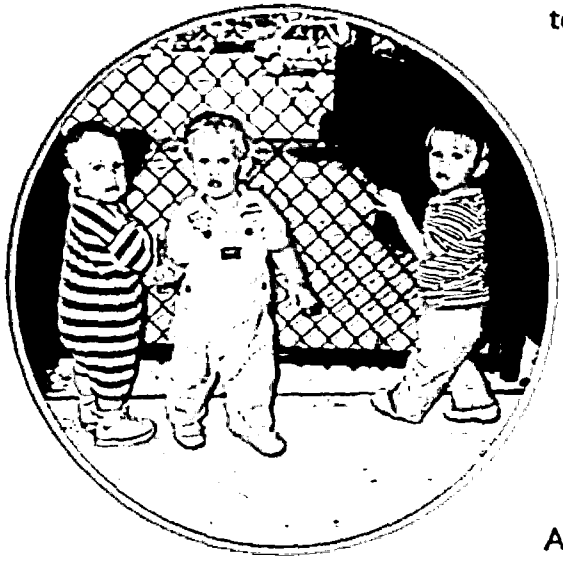
National Household Survey on Drug Abuse



Helping our country understand the nature and extent of drug abuse, cope with the problems it spawns, and reduce its prevalence have been major areas of research at RTI for decades. By far, our largest effort in this arena continues to be the National Household Survey on Drug Abuse (NHSDA), which we have conducted for the Substance Abuse and Mental Health Services Administration since 1988. This annual survey provides current estimates of tobacco use, alcohol use, use of illicit drugs, and nonmedical use of prescription drugs. Many people use NHSDA data—including state, local, and federal government agencies—to research substance abuse issues, to assess the need for treatment programs, and to design and evaluate programs.

"We have made many improvements to the survey since we began working on it in 1988," explains Thomas G. Virag, project director. "For example, the 1999 NHSDA results, which were released in August 2000, included estimates for individual states for the first time." Also, the sample size for the 1999 survey increased fourfold from previous years. Data are now based on information obtained from almost 70,000 people. In addition, a new, interactive, bilingual, computer-based questionnaire was introduced in the 1999 survey. Earlier surveys relied on paper-and-pencil questionnaires.

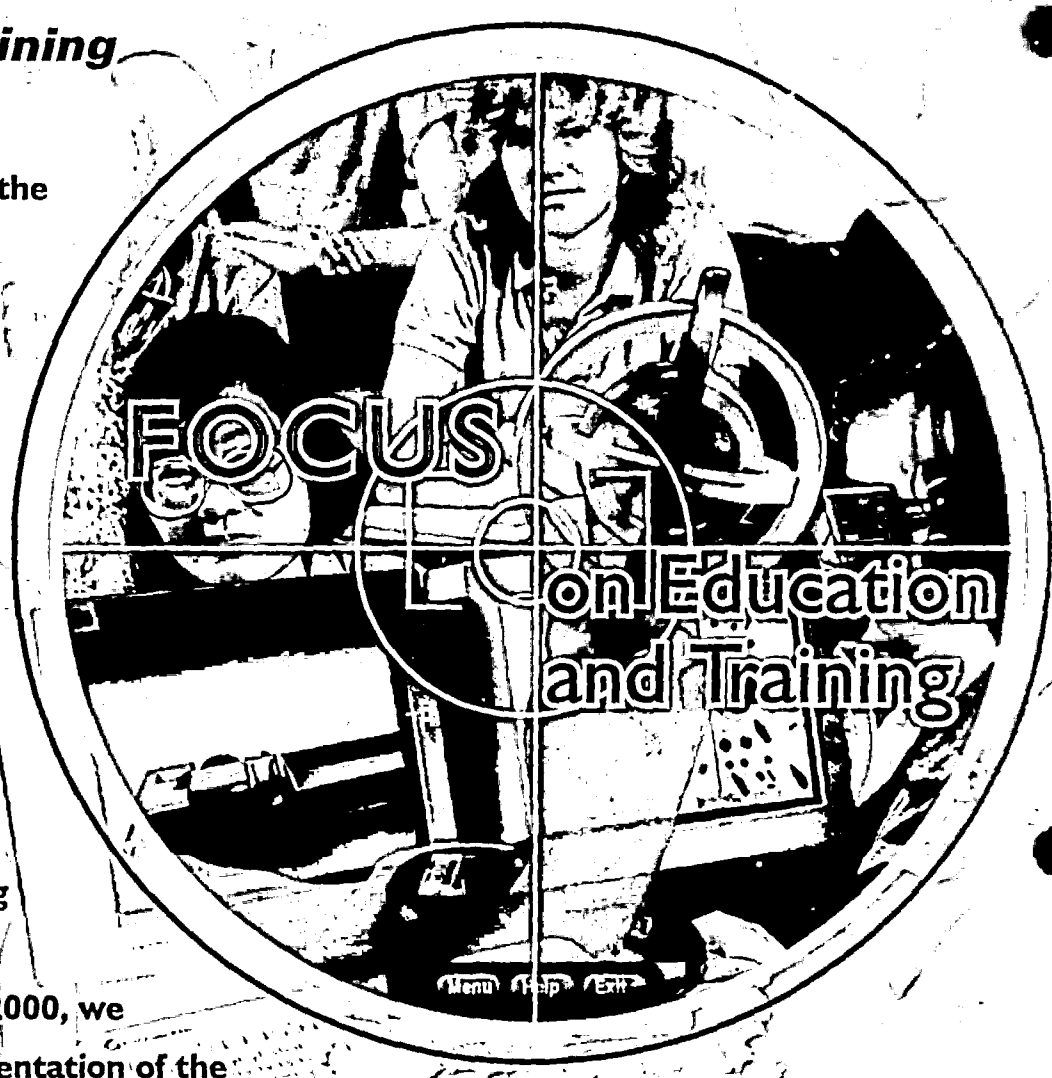
Understanding Children's Exposure to Pesticides



Children's rapidly developing neurological, immunological, and other biological systems make them especially susceptible to exposure to pesticides and other chemicals in the environment. At the same time, children's behavior patterns—playing outside in the dirt and putting their hands in their mouths, for example—put them in greater contact with environmental chemicals. To better understand children's exposure to chemicals, RTI researchers —including survey specialists, chemists, statisticians, engineers, and early childhood educators—have teamed on a project for the U.S. Environmental Protection Agency.

In 2000, we gathered data for this project in a number of ways. "For example, by videotaping young children in different settings, we learned that children aged 1 to 3 touch various surfaces and then their food about 20 times each time they eat," explains Edo D. Pellizzari, Ph.D., Vice President for Analytical and Chemical Sciences. "By measuring leftover foods touched by the child, we learned that this handling can increase contamination by a factor of 10. This suggests that current risk assessments based solely on measuring contaminants in food before it has been prepared and handled by a child can underestimate risk." Other ongoing exposure studies that will extend into 2001 include measuring the total pesticide exposures of siblings living in the same household in urban and agricultural areas of Minnesota.

During the past 30 years, RTI has built a strong foundation in education and training research.

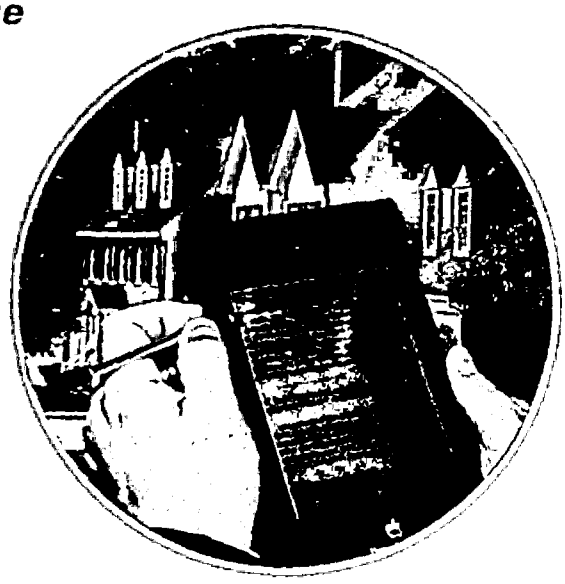


Our projects have spanned the globe, involving researchers from numerous disciplines, including education, statistics, survey research, computer science, psychology, engineering, and international development.

In 2000, we helped both the U.S. and countries around the world—including South Africa—reform their education systems. Also in 2000, we began assessing the implementation of the Workforce Investment Act of 1998, we carried out research on distance learning, and we continued longitudinal studies that are gathering information about the role schools, teachers, community, and family play in a young adult's development. In addition, we studied the access that persons with disabilities have to information technology, and we developed technologies for training military personnel to maintain complicated equipment.

With the ability to pull together multidisciplinary research teams to address a wide range of issues both in the U.S. and abroad, we are well equipped to help the world meet the education and training challenges of the 21st century.

National Household Survey on Drug Abuse



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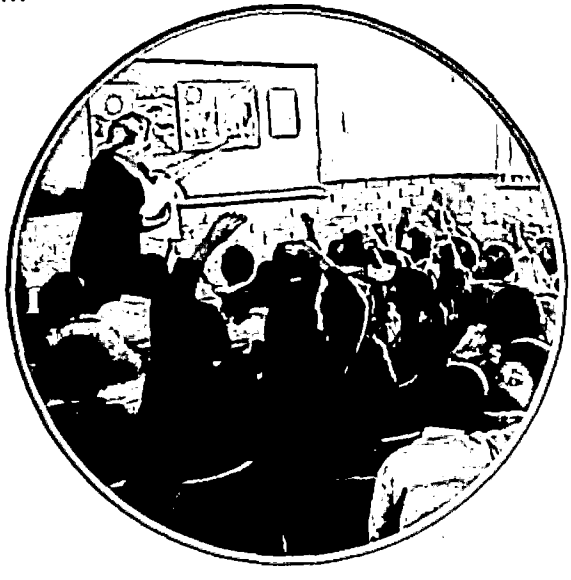
National Education Longitudinal Study

Since 1972, the U.S. Department of Education (ED) has conducted longitudinal studies that focus on critical transitions experienced by young people as they develop, attend school, and embark on their careers. The longitudinal design makes it possible for researchers to examine the role that schools, teachers, community, and family play in promoting growth and positive outcomes.

During 2000, RTI conducted the fourth follow-up of the National Education Longitudinal Study, known as NELS:88/2000. This follow-up included interviews with 12,000 26-year-olds from the cohort of 8th graders selected in 1988. The study focused on employment, postsecondary education, and family formation. Products, which are expected to be available in September 2001, will include a data analysis system on CD-ROM. In addition, an electronic codebook with restricted-use data will be available from ED. In April 2000, we were awarded a contract to conduct the Education Longitudinal Study: 2002 (ELS:2002), the fourth in the series of decades-long education longitudinal studies sponsored by ED (NELS:88/2000 was the third). Data collection from a new cohort of more than 20,000 10th graders will begin in the spring of 2002.

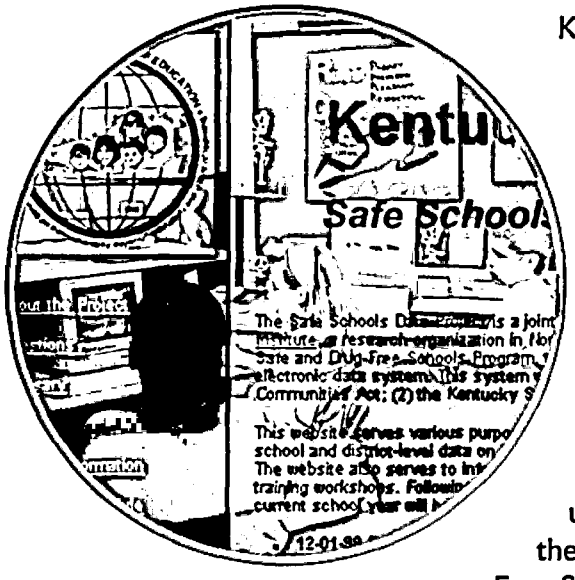
Education Reform

For the past decade, RTI has developed a comprehensive and systematic approach to sustained education reform known as Education Reform Support (ERS). "We defined processes that enable and empower people at both the national and local levels to come up with their own set of complementary solutions to education problems," explains Luis A. Crouch, Ph.D., director of RTI's Center for International Development. "Besides working on these policy reform issues, we provide technical assistance and advice in specific technical aspects of education reform, such as education finance, learning assessment, and information systems." One of our countries of focus has been South Africa. We helped the government there with the transition from the apartheid education system to a new system that provides an increasingly equal education opportunity for all South Africans. This year, we worked with the U.S. Agency for International Development (USAID) and the South African government to improve education management, quality assurance, and funding systems at school, district, and national levels.



Also, we are assisting with education reform efforts in Ethiopia, Bulgaria, and Guinea. In 2000, we began a partnership with the Soros Foundation to promote education improvement through the ERS framework in a number of Central Asian, East European, and other democratizing regions.

Monitoring Drug Use and Violence



Kentucky schools now have a Web-based reporting system that can track data on school violence, student discipline, school safety measures, and drug and violence prevention activities, thanks to RTI education researchers. We developed the site, which includes data from 1,437 schools, under a three-year grant from the U.S. Department of Education. RTI has designed similar systems for South Dakota and Maine.

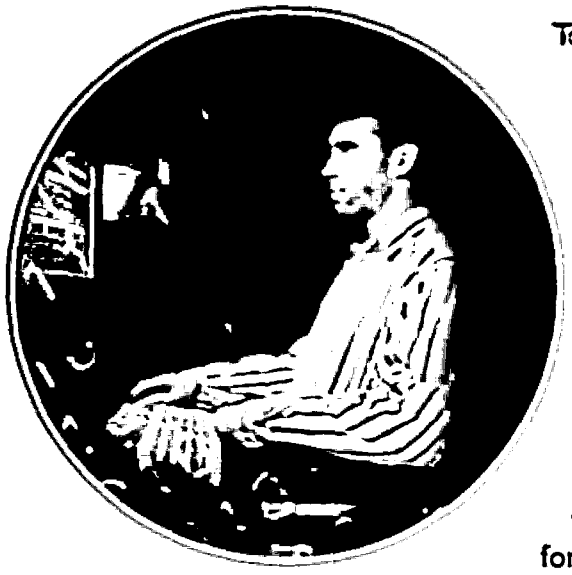
With the Web-based data collection system, the turnaround time is much shorter than that of reporting systems that rely on paper data collections. Also, the system has built-in checks to ensure high-quality data. The site is being used for a number of different purposes. For example, it generates the state report card, as well as federal reports for Safe and Drug-Free Schools and the Gun-Free Schools Act. Schools and districts use data on the site to assist in program planning, comparisons, and evaluation. The site's security features, which permit different levels of access, provide users with the information they need. In the fall of 2001, when the system is fully developed and tested, we will turn its maintenance over to the Kentucky Department of Education.

School Health Policies and Programs

During 2000, RTI completed data collection for the largest and most comprehensive nationwide study ever conducted of school health policies and programs at the state, district, school, and classroom levels. Conducted for the Centers for Disease Control and Prevention, the School Health Policies and Programs Study 2000 (SHPPS 2000) is examining the characteristics of eight components of school health programs at the elementary, middle/junior high, and senior high school levels. These include health education, physical education and activity, health services, food service, school policy and environment, mental health and social services, faculty and staff health promotion, and family and community involvement.

In 2000, we collected SHPPS data through computer-assisted personal interviews with school staff and through mail surveys of state and local district officials. Each state, approximately 600 school districts, and about 950 schools participated in the study. Results, which will include topic- and state-specific summaries, will be released in the summer or fall of 2001 in a special issue of the *Journal of School Health*. For more information, visit the SHPPS 2000 Web site at www.cdc.gov/nccdphp/dash/shpps.

Technology Access

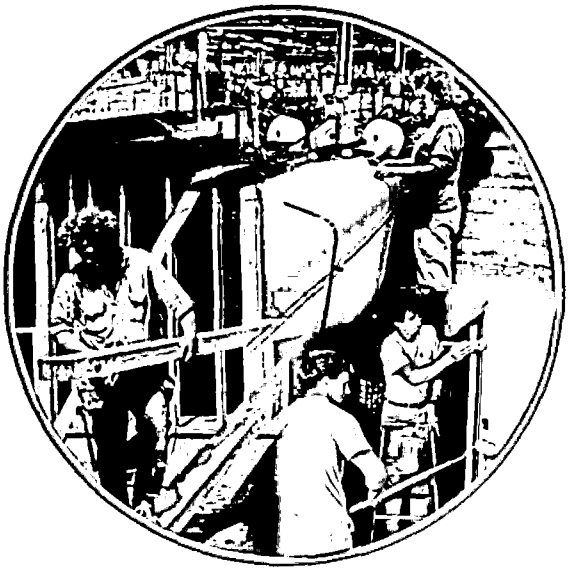


Today, people rely on the Internet and other forms of information technology to learn new things, to help them at their jobs, to be part of their communities, and to keep in touch with friends and family. But what about persons with disabilities? Are these resources available to them, as well? To find out, the National Institute on Disability and Rehabilitation Research contracted with a team of education researchers and technology assessment experts at RTI to examine the existing infrastructure for assistive technology and accessible information technology. Assistive technology devices include driver-modified vans, screen readers for computers, augmentative or alternative communication devices, and workplace accommodations. Services include training in the use of devices, assistance with identifying funding for assistive technology, and maintenance and repair of devices.

"Our goal is to determine if individuals with disabilities can readily acquire and use technology for education, employment, and community and social participation," explains Becky J. Haywood, Ph.D., RTI chief scientist. "Also, we are identifying ways to improve access to assistive technology and information technology for people with disabilities. This could involve removing or reducing barriers, training persons with disabilities to use available technology, or working with researchers to develop new technologies."

Workforce Investment Act

The Workforce Investment Act (WIA) of 1998 established a new "one-stop" career center system, through which many federally funded education and training programs now recruit and serve their consumers. Partners in the new system are the vocational rehabilitation program administered by the U.S. Department of Education's (ED's) Rehabilitation Services Administration and adult education and literacy programs in ED's Division of Adult Education and Literacy.



In 2000, these two government programs contracted with RTI to assess how WIA is being implemented at both state and local levels. To determine how the one-stop system affects interagency collaboration and the delivery of services, we are conducting site visits in 18 states. We are talking with state officials responsible for administration of vocational rehabilitation and adult education as well as local educators, one-stop partners, and consumers who are working to improve their education and employment status. As part of this study, we are also looking for new and better ways the one-stop system can serve people who need vocational rehabilitation and adult education services.

Virtual Humans

In 2000, we put our proprietary AVATALK® technology to work teaching police officers how to interview mentally ill individuals. Recognizing that it is critical for officers to use proper and legal interviewing techniques to correctly assess the mental state of a suspect and to determine the proper course of action, the National Institute of Justice contracted with RTI to develop a state-of-the-art training program. AVATALK's computer-generated "virtual partners" will offer a vast improvement over the passive learning and playacting techniques used in the past to train police officers to interview people who might be mentally ill.

A suite of computer technologies, AVATALK makes it possible to have a natural, interactive conversation with a responsive virtual human. The only equipment required to run AVATALK is a Pentium PC and a microphone. The technology's virtual humans express emotions, and users can converse with them and see and hear their realistic responses. Besides training police officers, we are investigating other ways AVATALK can be used to enhance training programs and better prepare people for real-world situations.

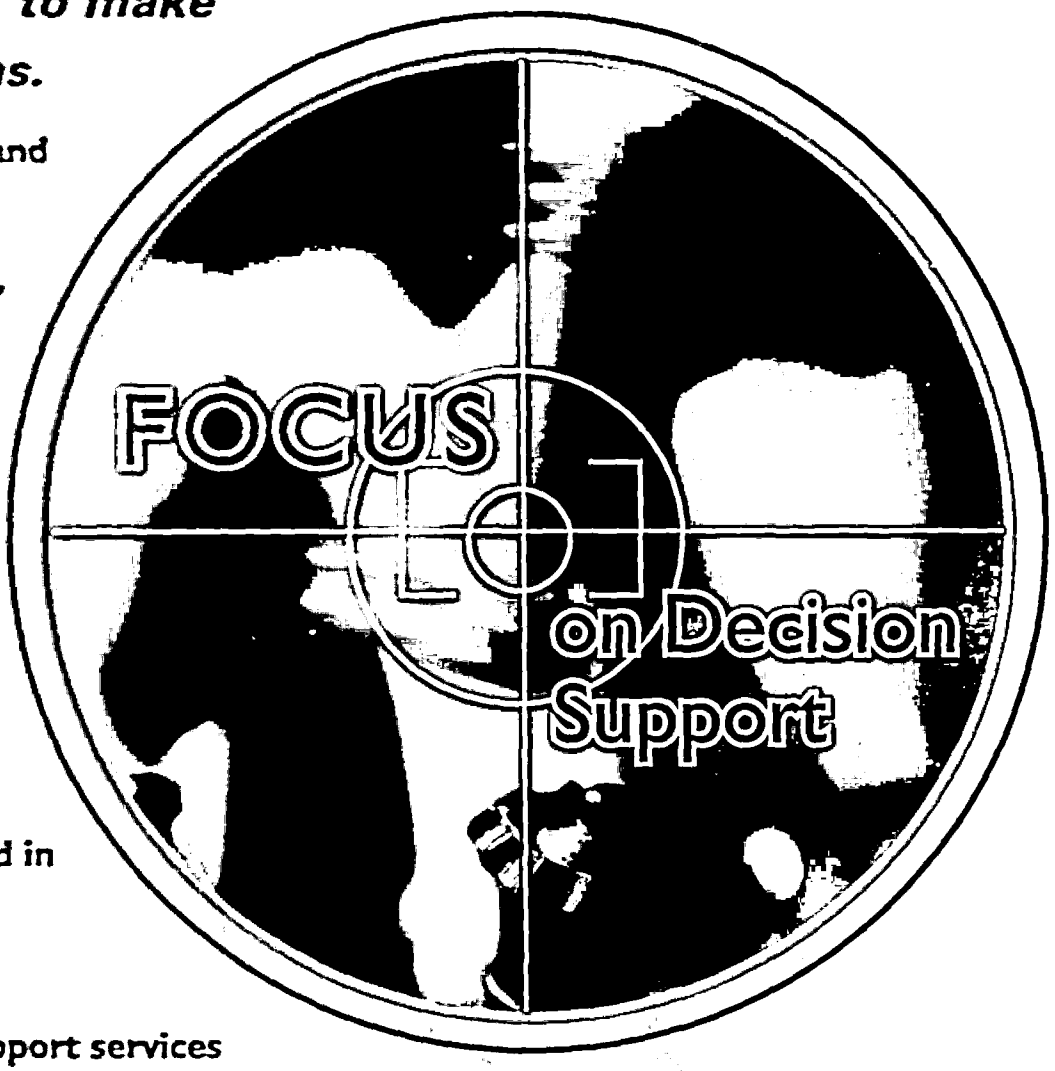
Technology-Assisted Learning Solutions

We continued and expanded our role of providing training and education solutions to the U.S. Army Armor branch in 2000. We developed programs that use advanced technologies—such as virtual reality (VR)—to give Armor personnel a chance to practice repairing complex machinery under virtual, but realistic, conditions. "Our approach allows soldiers to learn skills better, faster, and less expensively," explains Sam S. Field, IV, director of Digital Systems Engineering. "Through VR, they have unlimited access to equipment that is expensive, unavailable, and complicated to operate."

During 2000, RTI was chosen to provide maintenance training systems for the Army's next generation main battle tank. Also, RTI was selected to analyze training systems for the next generation Bradley Fighting Vehicle, and in 2001 we will develop VR training devices for this weapon system. Besides these training simulations, we provided infrastructure support and materials management services at the Army's premier distance learning institution, the University of Mounted Warfare (UMW). Under past contracts, RTI helped design the UMW concept and make it a reality.

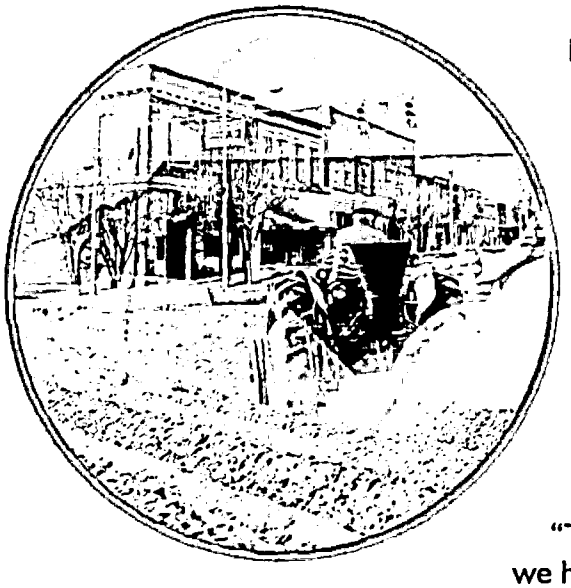
As an independent research institute, RTI is a valuable resource for clients who want to make informed decisions.

We can identify, gather, and analyze the data they need to address political, social, environmental, economic, education, and other issues. In addition, our researchers have expertise in numerous fields, and they have developed tools, models, and methodologies to aid in decision making.



In 2000, our decision support services spanned a broad range of topics. For example, in North Carolina, we helped the new Golden LEAF Foundation establish its decision process for making grants. Around the world in South Africa, we established an office to help the government there make decisions about education policy, health policy, and urban financial management. The following pages give more information about these and other examples of our decision support services.

Golden LEAF Foundation



Building on its extensive experience helping nongovernment organizations that promote economic and human development, RTI social scientists, environmental scientists, and economists helped the new Golden LEAF Foundation in North Carolina establish its decision process for making grants. The Foundation supports activities that will improve social and economic conditions in economically affected or tobacco-dependent regions of the state. Golden LEAF was established by the State of North Carolina to receive and distribute a portion of the funds the state receives as a result of the settlement of *North Carolina v. Philip Morris Incorporated, et al.*

"The work we did for Golden LEAF in 2000 was similar to what we have done many times to help donor agencies establish grant-making systems in developing countries," explains Ronald W. Johnson, Ph.D., Vice President for Education and International Development. "We facilitated outreach to interested constituencies, helped the Foundation develop and document its criteria, and built the basic machinery to solicit applications, make decisions, and distribute funds." In addition, RTI provided statewide outreach efforts that resulted in more than 400 applications for year 2000 grants.

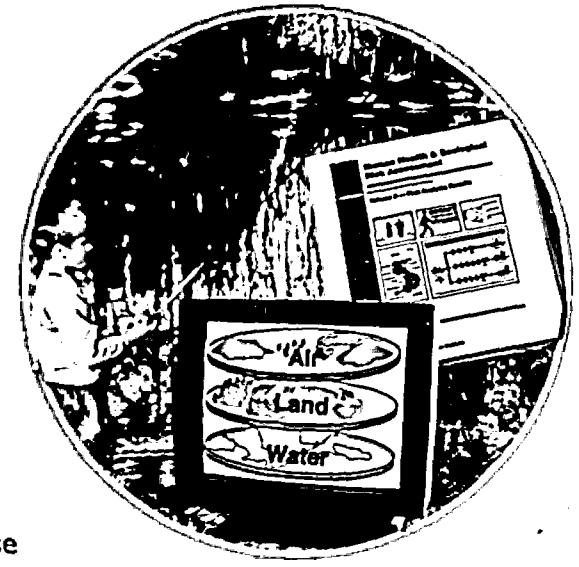
RTI's South Africa Office

In 2000, we opened a new office in Pretoria, South Africa. We have worked in South Africa since 1990, providing officials there with the tools and information they need to make effective decisions. We have been instrumental in their efforts to reform education, to improve urban financial management, and to slow and cope with the spread of HIV/AIDS.

"We plan to greatly expand the range of work we do in South Africa," explains Luis A. Crouch, Ph.D., director of RTI's Center for International Development. "Besides education, urban finance, and HIV/AIDS, we hope to assist that nation with workforce development, social welfare, public health, service delivery reform, and environmental management. By having an office in Pretoria, we will be better able to meet the needs of our South African clients."

At the same time, RTI's new office will provide a convenient location from which to provide decision support services to the Southern African Development Community countries and to sub-Saharan Africa. In the coming year, we hope to build on RTI's current education, democratization, and health initiatives in countries as varied as Benin, Ethiopia, Ghana, Guinea, Kenya, Malawi, Mali, Tanzania, Uganda, and Zimbabwe.

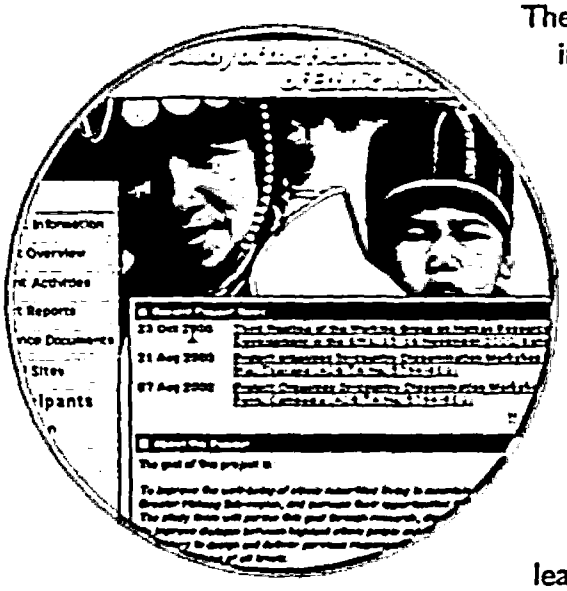
Risk Assessment Tool



Technology feasibility and cost-benefit analyses are often considerations in environmental decisions. But for many decisions within the U.S. Environmental Protection Agency (EPA), the protection of human health and the environment are the primary concerns. For over a decade, RTI has worked with various EPA offices to develop risk assessment tools to support regulatory decisions. We have been part of a multi-organization team to build an integrated multimedia, multiple exposure pathway, and multiple receptor risk assessment model.

This integrated model, now used by the EPA, simultaneously evaluates the impact on human and ecological receptors from exposures in air, water, and the food chain. It is used to assess national risks that may occur from the long-term, multimedia release of chemicals from waste management units, such as landfills and surface impoundments. "For example, the model allows us to calculate the risk to people and the environment from a chemical, such as benzene or mercury, that was released to air or groundwater from a landfill," explains RTI research director Terrence K. Pierson, Ph.D. "The model can track the chemical from its source, through various media, and into the food chain. It then calculates the ecological and human exposure and risk."

Improving Life in the Greater Mekong Subregion

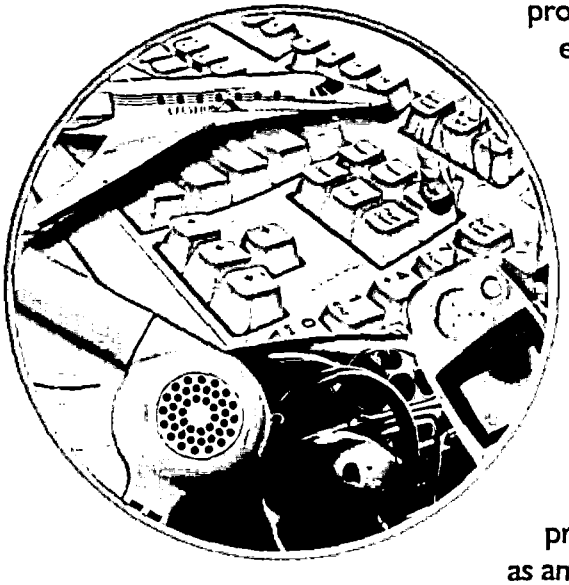


The Greater Mekong Subregion encompasses six different countries in Southeast Asia: Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam, and Yunnan Province in the People's Republic of China. Among the 220 million people living in this area, nearly 22 million are of ethnic minority heritage. Many of these groups span political borders, and their cultural heritages are diverse and distinct from mainstream society. Also, many are socially marginalized, which often means that they have lower health status, lower educational attainment, and a fragile means of livelihood.

"With support from the Asian Development Bank, we are providing information that will yield better decisions about ways to improve the well-being of the ethnic minority in this region of the world," explains Myles F. Elledge, RTI project team leader. "We are also working to increase their access to quality health and education services." To do so, RTI is studying the current situation in the Greater Mekong Subregion, including looking at innovative and effective methods that have emerged in some countries to provide ethnic minority populations with basic social services. "We will disseminate our results and work to improve the dialogue between the highland ethnic people and those who finance, design, and deliver services to meet their needs," says Mr. Elledge. "Our goal is to help donor agencies, country and local governments, and nongovernmental organizations make better decisions about programs designed to improve the lives of the ethnic minorities in Southeast Asia."

Intellectual Property Valuation

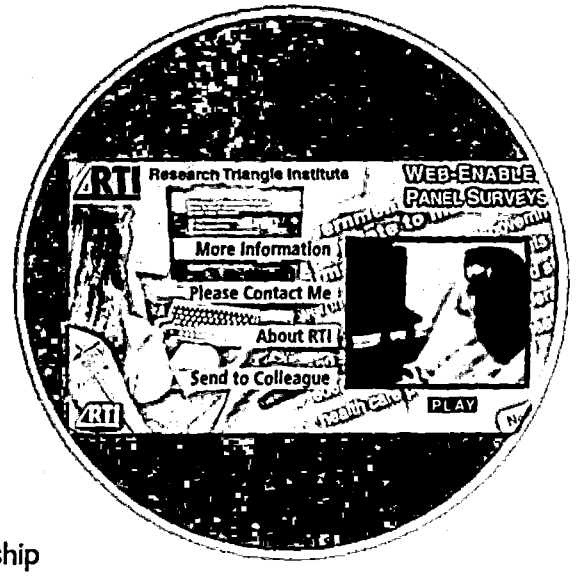
Helping companies extract the greatest value from their intellectual property is another decision support service at which RTI excels. To make the most of our expertise we teamed with Deloitte & Touche, a firm well known for its business accounting and intellectual property valuation skills. Their skill set complements our extensive experience in technology assessment. For over 30 years, we have helped NASA transfer its space-program innovations to numerous medical, electronics, transportation, data processing, materials, manufacturing, automotive, and environmental applications.



Our partnership with Deloitte has been a successful one—for us, for them, and for our clients, some of whom have extensive patent portfolios. They are in the electronics, automotive manufacturing, pharmaceutical and chemical development, and paper and adhesives manufacturing industries. We identify their patents with high potential value, evaluate their technology for possible licensing, and help them contact potential licensees and negotiate license agreements. We also help our clients separate the patents with little prospect for future revenue from those that might prove to be valuable as an industry advances. For example, the RTI/Deloitte team is helping Textron Automotive Company gain a new source of nonautomotive revenue by licensing its injection molding process to nonautomotive companies.

In addition to our partnership with Deloitte, we have established a strategic relationship with yet2.com, an online marketplace for licensable technologies. RTI evaluates technologies and develops marketing materials, and yet2.com posts these materials on its Web site for prospective licensees to browse. In the last few months, we have teamed with yet2.com on projects for Lockheed Martin and American Standard. Our association with yet2.com has led to requests for our services from several Fortune 100 companies.

Web-enabled National Surveys



Another successful partnership that began in 2000 is our association with Knowledge Networks, a firm that developed a way to combine the power of the Internet with reliable sampling techniques for consumer research. Together we conduct Web-enabled surveys to provide our government and industry clients with the up-to-the minute information they need to make decisions about vital national topics such as health, nutrition, transportation, and the environment. RTI has been one of the nation's leaders in conducting national surveys on a variety of issues, and we built our reputation as a leader in survey research by being the first to make emerging technology work in the real world of research. Our partnership with Knowledge Networks is a natural. Already, the RTI/Knowledge Networks team has two private-sector clients and four government clients. For more information, visit the RTI/Knowledge Networks Web site (www.rti-knowledgenetworks.org).

FOCUS on People

In 2000, RTI staff members received unprecedented peer recognition for their scientific accomplishments. **They produced numerous professional reports and publications, made presentations at meetings around the world, received peer recognition at professional meetings, and taught university courses. RTI staff also won awards for project work from clients and served on national panels. Several of these accomplishments are highlighted here.**

In May, RTI chemists Monroe E. Wall, Ph.D., and Mansukh C. Wani, Ph.D., received the most significant recognition in RTI's history—the Charles F. Kettering Prize. This prize recognizes the world's most outstanding advances in cancer treatment and diagnosis. Drs. Wall and Wani were cited for the discovery of two chemotherapeutic compounds, Camptothecin™ and Taxol®, both of which have unprecedented mechanisms of action against cancer.

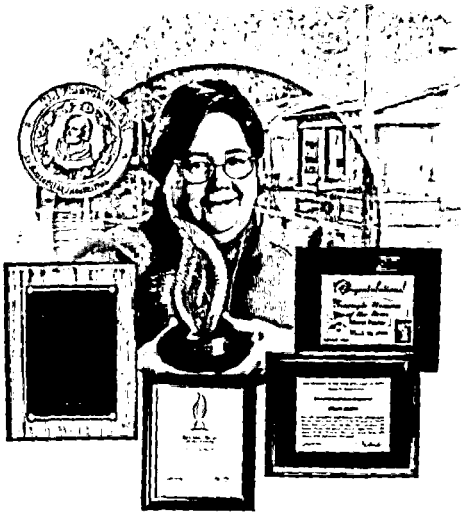
R.K.M. Jayanty, Ph.D., received the American Chemical Society's annual Award for Creative Advances in Environmental Science and Technology. This is a tribute to Dr. Jayanty's development of methods used worldwide to measure potentially harmful chemicals in media such as air, hazardous wastes, and consumer products. Also in 2000, Dr. Jayanty received the annual Distinguished Lecturer Award from the American Chemical Society, North Carolina Section. In addition, he has been invited to serve on two expert panels. One is a NASA expert panel that will review advanced air quality instrumentation to measure volatile organic compounds inside the International Space Station. The other is an expert panel that will review EPA STAR grant proposals on biopollution.

Taxol®, a word coined by Dr. Monroe E. Wall of RTI, is a trademark of Bristol-Myers Squibb Company. Camptothecin™ is a trademark of the Research Triangle Institute.

Edo D. Pellizzari, Ph.D., won the top honor from the International Society of Exposure Analysis, a professional environmental group. Dr. Pellizzari also serves as Editor-in-Chief of the *Journal of Exposure Analysis and Environmental Epidemiology*, a journal he founded.

F. Ivy Carroll, Ph.D., received the 2000 Southern Chemistry Award from the American Chemical Society. Also, he was named a Fellow of the American Association of Pharmaceutical Sciences. In addition, he is a member of the board of directors of the College on Problems of Drug Abuse, the longest standing group in the United States addressing problems of drug dependence and abuse. These honors speak to Dr. Carroll's consistently outstanding contributions to chemistry and drug discovery.

Stature is built in many ways, one of which is community service. **Marie V. Felder** received four different awards this year for her volunteer service on behalf of flood victims in eastern North Carolina. While these were not scientific awards, Marie's community service is an outstanding example of dedication to improving the human condition. She is just one of many RTI staff members who donate their time and talents to health and human services in our community.



Selected 2000 Honors and Awards

- As an Institute, RTI received two Public Service Awards this year from NASA—the highest honor bestowed by that agency. One award credits our assistance in commercializing NASA technologies; the other is for research and development in aerospace technology. On top of these, NASA gave two "invention of the year" awards to teams that included people from RTI.

- **Amoke O. Alakoye** served as co-chair of the American Society on Aging's Research Committee.

- **Paul P. Biemer, Ph.D.,** was named a Fellow of the American Statistical Association in 2000, and he chaired a Transportation Review Board/National Academy of Sciences panel on Personal Transportation Survey Methodology. Also this past year, Dr. Biemer served as associate editor for two journals: *The Journal of Official Statistics* and *Survey Methodology.*

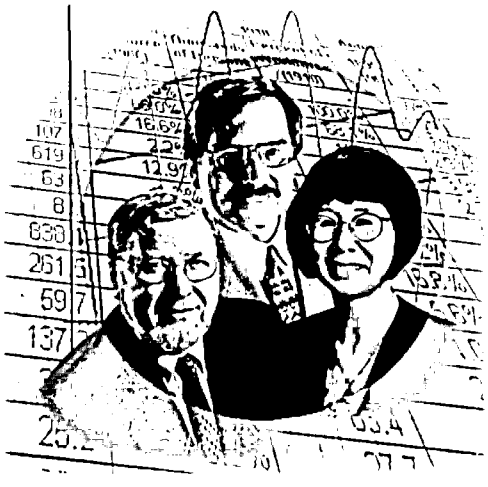
- **James R. Chromy, Ph.D.,** served as a member of the editorial board for the *Journal of Official Statistics.*

- **Diana H. Fishbein, Ph.D.,** published two books this year while at RTI: *The Science,Treatment and Prevention of Antisocial Behavior* (Civic Research Institute) and *Biobehavioral Perspectives in Criminology* (Wadsworth Publishers). The first book quickly became a staple throughout the federal corrections system and in the offices of many treatment providers. The second book has already replaced several other criminology theory books in many university departments.

- **Becky J. Hayward, Ph.D.,** served on a number of Federal Expert Panels, including: the Rehabilitation Services Administration's Study of American Indian Vocational Rehabilitation Services Program, the U.S. Department of Education's Planning and Evaluation Service's study of the role of National Educational Labs in fostering school reform, and the National Institute on Disability and Rehabilitation Research's Formative and Summative Review of Rehabilitation Research and Training Centers and Rehabilitation Engineering Research Centers programs.

- **Helen P. Koo, Ph.D.,** published a chapter on "Statistical Models for Human Reproduction" in the *Handbook of Statistics* (Elsevier Sciences). Her co-author was C.M. Suchindrin at the University of North Carolina at Chapel Hill.

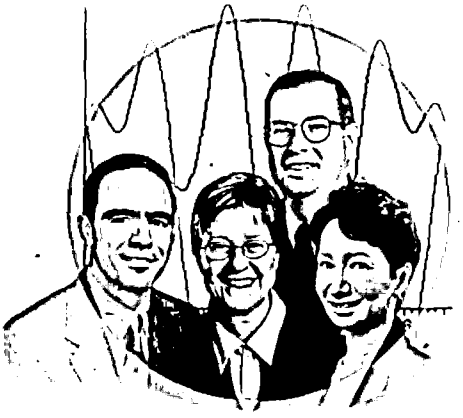
(From left) Becky J. Hayward, Ph.D., Diana H. Fishbein, Ph.D., Amoke O. Alakoye.



(From left) James R. Chromy, Ph.D., Paul P. Biemer, Ph.D., Helen P. Koo, Ph.D.

- **Dewey T. Lawson, Ph.D.,** was the Distinguished Guest Speaker at two international conferences in India, the 4th International Surgical Workshop on Rhinoplasty & Middle Ear, held in Mumbai, and the Millennium State-of-the-Art Symposium, held in Indore.

- **Judith T. Lessler, Ph.D.,** received one of the three Statistics Section awards that were presented at the 128th Annual Meeting of the American Public Health Association held in Boston in November 2000. Dr. Lessler was cited for her leadership in the development of cost-effective survey designs, the use of cognitive laboratory methods for studying measurement error, and theoretical investigations of frame construction and multiple frame design.



(Clockwise from left) Brian C. Murray, Ph.D., William J. White, Suyapa Silvia, Ph.D., Judith T. Lessler, Ph.D.

- **Kathleen N. Lohr, Ph.D.,** was one of a dozen experts in health services research videotaped for a 50-minute educational video on the history and evolution of the field of health services research. The National Library of Medicine sponsored the video.

- **Josephine A. Mauskopf, Ph.D.,** serves on the Health Care Technology and Decision Sciences Standing Study Section for the Agency of Healthcare Research and Quality and is the economics co-editor for *Value in Health.*

- **Brian C. Murray, Ph.D.,** was a contributing author to the Clinton Administration's national climate change assessment report, which examined the effects of climate change on the productivity of forest ecosystems and agricultural systems in the southeastern United States. Also, he was a lead author of the Intergovernmental Panel on Climate Change report, which was used as a basis for negotiations of the Kyoto Protocol climate change treaty in late 2000.

- **Suyapa Silvia, Ph.D.,** served on the U.S. Department of Education's Safe, Disciplined, and Drug-Free Schools Expert Panel as a reviewer of proposed approaches to the prevention of drug use and violent behavior in schools.

(Clockwise from left) Dewey T. Lawson, Ph.D., Josephine A. Mauskopf, Ph.D., Blake S. Wilson, Kathleen N. Lohr, Ph.D.

- **Blake S. Wilson** joined the editorial board of the journal *Cochlear Implants International* in February 2000.

- One of our new employees this year, **William J. White, Ph.D.,** received the Columbia University Prize for the year's best dissertation about economic history. His dissertation, "An Unsung Hero: The Farm Tractor's Contribution to Twentieth Century United States Economic Growth," was completed at Ohio State University.

FINANCIAL Summary

The financial statements below show the results from the fiscal years ending September 30, 2000, and 1999.

- Revenue from research operations of $239.1 million for fiscal year 2000 exceeded fiscal year 1999 revenue by $32.5 million, an increase of 16 percent.
- Net revenue of $10 million for fiscal year 2000 was 19 percent more than in fiscal year 1999.
- Total Institute capital at the end of fiscal year 2000 was $85.3 million, a 1-year increase of $10 million.

RTI also received $249 million of new funding for research projects in fiscal year 2000, an increase of 15 percent compared with fiscal year 1999.

Income Statement (In thousands of dollars)	2000	1999
Revenue from research contracts	$239,087	$206,590
Direct and indirect labor	(111,347)	(100,056)
Other direct costs	(94,133)	(77,899)
Other variable costs	(13,027)	(10,341)
Fixed costs	(11,234)	(10,003)
Net revenue from operations	9,346	8,291
Other income (net of interest expense)	628	102
Net revenue	$9,974	$8,393
Balance Sheet (in thousands of dollars)		
Assets		
Current assets	$62,294	$50,920
Property and equipment	108,856	104,289
Accumulated depreciation	(53,021)	(49,393)
Other noncurrent assets	2,219	2,410
Total assets	$120,348	$108,226
Liabilities and Institute Capital		
Current liabilities	$35,020	$32,872
Long-term notes payable	0	0
Total liabilities	35,020	32,872
Contributed capital (unrestricted)	4,879	4,879
Contributed capital (restricted)	2,145	1,950
Accumulated net revenue invested in research operations	78,304	68,525
Total Institute capital	85,328	75,354
Total liabilities and Institute capital	$120,348	$108,226

Board of GOVERNORS

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

Chairman

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

Board Members

William F. Little**
Retired Senior Vice President,
The University of North Carolina

Gretchen M. Bataille*
Senior Vice President for Academic Affairs,
The University of North Carolina

Erich Bloch
President, The Washington
Advisory Group, LLC

Enriqueta C. Bond*
President,
Burroughs Wellcome Fund

Molly Corbett Broad
President,
The University of North Carolina

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Chancellor, North Carolina Central University

Ivie L. Clayton
Business Consultant

Thomas F. Darden*
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Cherokee Investment Security

Linda A. Dykstra*
Interim Vice Provost for Graduate Studies
and Research, University of North Carolina
at Chapel Hill

Marye Anne Fox
Chancellor, North Carolina
State University

William C. Friday
President Emeritus,
The University of North Carolina

Steve C. Griffith, Jr.
Retired Vice Chairman,
Duke Power Company

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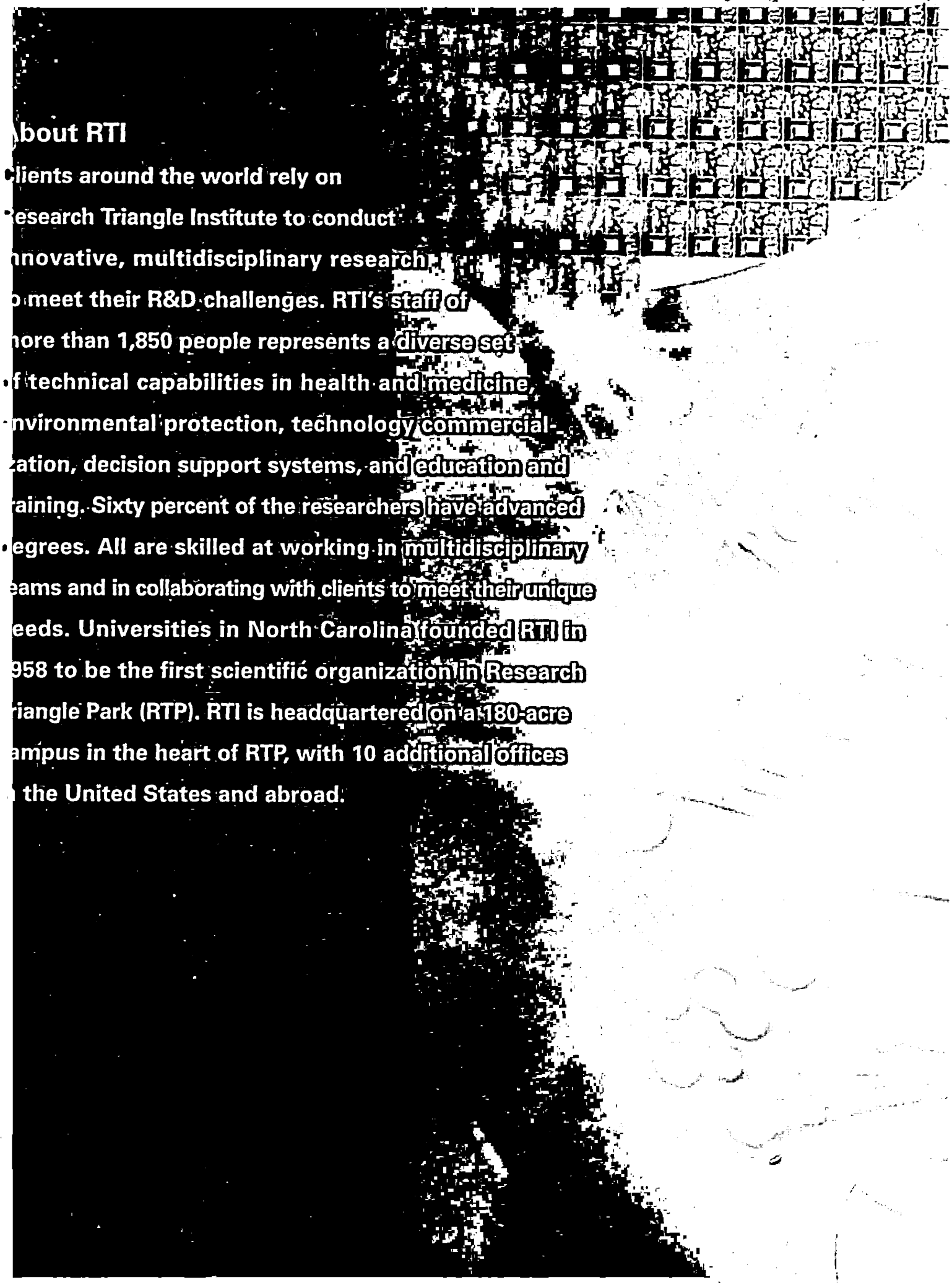

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Clients around the world rely on Research Triangle Institute to conduct innovative, multidisciplinary research to meet their R&D challenges. RTI's staff of more than 1,850 people represents a diverse set of technical capabilities in health and medicine, environmental protection, technology commercialization, decision support systems, and education and training. Sixty percent of the researchers have advanced degrees. All are skilled at working in multidisciplinary teams and in collaborating with clients to meet their unique needs. Universities in North Carolina founded RTI in 1958 to be the first scientific organization in Research Triangle Park (RTP). RTI is headquartered on a 180-acre campus in the heart of RTP, with 10 additional offices in the United States and abroad.

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