ANNUAL REPORT 2004

solutions for a changing world

RTI INTERNATIONAL

RTI is an independent, nonprofit organization dedicated to conducting research and development that improves the human condition. With a staff of more than 2,500 people, RTI offers innovative research and technical solutions to governments and businesses worldwide in the areas of health and pharmaceuticals, advanced technology, surveys and statistics, education and training, economic and social development, and the environment. Universities in North Carolina founded RTI in 1958 as the first scientific organization in and centerpiece of the Research Triangle Park.

As RTI continues to prosper and add capabilities, the underlying theme in all our work remains fulfilling our mission to improve the human condition.

Our researchers, who have degrees in over 130 disciplines, continually realign themselves into project teams. As a result, we are well positioned to provide solutions for a changing world in the fundamental areas of health and well-being and human advancement.

In 2004, RTI researchers provided solutions to complex environmental problems, continued to search for promising new medicines, helped countries create better education and local governance systems, and made plans to spin off a portion of our thermoelectrics group to commercialize a promising new technology.

President's Message

RTI president Victoria Franchetti Haynes, Ph.D.

The past year was a remarkable period of growth for RTI. A number of milestones confirmed our place as one of the world's premier organizations providing solutions for a changing world.

Our global presence increased—we are more than ever an *international* organization. Our revenue increased as well, exceeding $500 million, allowing us to make investments that will help us continue to attract talented staff. Also, our successful year made it possible for us to invest in new facilities and make process improvements to better serve our clients.

We remain justly proud of our stature, but we take special pride in a particular asset: our agility as an organization. At any moment, we can reach across the entire Institute and, drawing from our fields of research, assemble cross-disciplinary "dream teams" of resident RTI scientists, many the leading minds in their fields. This depth of expertise, always at our disposal, makes it possible for us to formulate new questions, even before they occur to our clients.

At RTI, our culture encourages a particular combination of individualism and entrepreneurial teamwork that, in the hands of our brilliant, dedicated staff, can yield spectacular results. This annual report features many RTI staff who embody both the spirit and the expertise that make RTI such a powerful force for change in a wide range of fields, including health, education, governance, the environment, and technology.

Victoria Franchetti Haynes

What makes RTI great—what has always made RTI great—is our support for innovative research that creates new ideas, animates them with educated vision, and launches them into the world.

As an institution, we encourage and reward new ideas, new visions of how and where the world is changing, and new ways of helping humanity not only cope with but benefit from change.

To encourage health and well-being and human advancement, we seek ways RTI might prosper as a force for improving the human condition.

Powering Change in Medical and Health Research

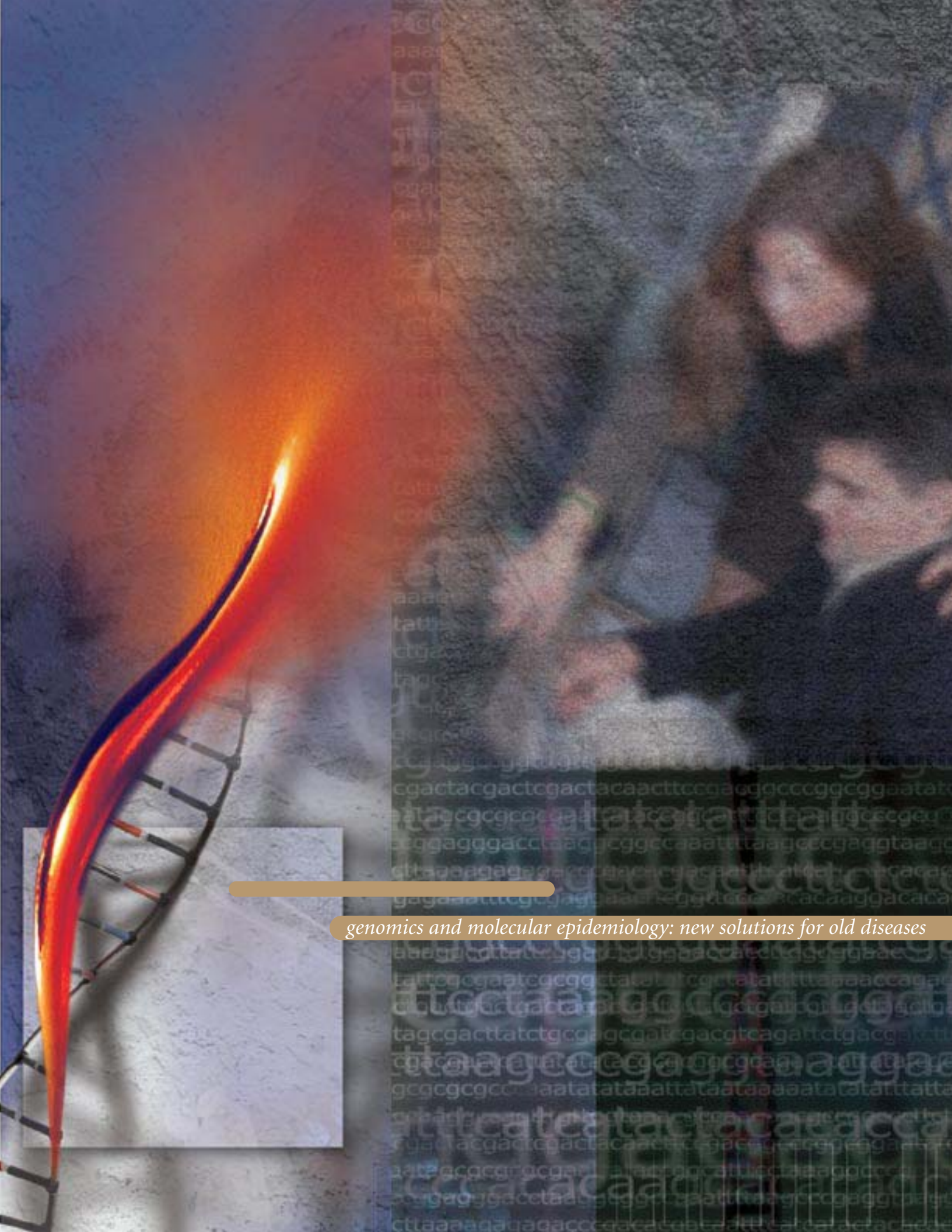
When bioinformatics, the application of computer analysis to masses of genomics data, was identified as a new area of opportunity for RTI, longtime RTI biostatistician Judy Lessler, Ph.D., was asked to look into it. She learned quickly that the field was complex and exciting. She realized that the challenges of even the most common contagious diseases—which could hold an entire nation at bay or be used in a terrorist attack—might be successfully met by a powerful combination of tools. Genomics and proteomics, not just bioinformatics, would revolutionize medical and health research.

In 2001, Lessler made a bold proposal: if RTI would support her and her project team as they defined their research agenda, the chances were good that new scientific ground might be broken. With significant Institute investment, the Partnerships for Genomics and Molecular Epidemiology (PGME) was launched, and Lessler began staffing for a significant entrepreneurial adventure. Other key members of the PGME team include Jamie Cuticchia, Ph.D., who specializes in bioinformatics; Edo Pellizzari, Ph.D., and Jim Stephenson, Ph.D., proteomics; Georgiy Bobashev, Ph.D., statistical genetics; Joe Pratt, partnerships with other organizations; and Diane Wagener, Ph.D., a genetic epidemiologist.

Wagener, who had worked at the Centers for Disease Control and Prevention and the Office of the Assistant Secretary of Health before joining RTI, began to develop projects that combined the expertise of the entire PGME team. One such project was a $26 million initiative to study the role of genomics and proteomics in the effectiveness of typhoid and cholera vaccines in India. Also, she and others at RTI began work this past year on a large bioinformatics project called MIDAS (Models of Infectious Disease Agent Study). For this project, RTI serves as the coordinating center for an international network of researchers developing better models to predict and control the spread of infectious diseases.

RTI's faith in an innovative idea—as well as a strong, internal cross-disciplinary team and partnerships with key organizations outside RTI—is paying off: in the past year the PGME program brought in $52 million for the Institute and launched projects that have the potential to improve the health and well-being of people here and around the world.

Judy Lessler, Ph.D., and Diane Wagener, Ph.D., glimpsed the territory ahead and showed RTI a way to navigate it successfully.



genomics and molecular epidemiology: new solutions for old diseases

What are the shared convictions that enable a society to move toward universal basic health?

In order to know, we enlist the methods RTI continually applies: basic questions are asked, methods devised to survey populations, and analyses applied in pursuit of the answers.

Over the years, RTI has helped identify and study problem behaviors and harmful social factors with the potential to exacerbate or cause illness and undue economic and social burden.

Focusing on the Economic Costs of Obesity

Much as smoking was identified as a leading health threat in the 1960s, obesity has recently been confirmed as a critical concern and expense in U.S. health maintenance.

Since 2001, the need to address obesity has entered the national consciousness as an urgent priority, and RTI's obesity research has proliferated into an array of more focused research studies.

RTI economist Eric Finkelstein, Ph.D., and his team were ahead of the curve in realizing that new research into this emerging national problem might make a substantial contribution to the growing evidence that obesity kills—and costs. Finkelstein was able to specify, and support with solid research findings, a $93 billion annual drain on U.S. health care resources due to obesity.

Also in 2004, Finkelstein introduced innovative cost-calculator software that enables corporate employers to determine potential savings from fitness, nutrition, and weight control programs.

Another emerging area of RTI obesity research is investigating the causes of and potential solutions to childhood obesity. Researchers are analyzing children's TV viewing habits and their relationship to obesity. In addition, RTI is evaluating the effectiveness of state- and community-level prevention initiatives, including the Secretary of Health and Human Services' *Steps to a Healthier US*.

It is with some satisfaction that Finkelstein sees a decided shift occurring in national health attitudes and policies. Yet he is quick to point out that his specific contribution is limited to the economic analysis—the numbers—and he stresses his reliance on a range of other RTI specialists—Derek Brown, Ph.D., Hong Chen, Ian Fiebelkorn, Katherine Hicks, and Olga Khavjou—without whom a successful effort would have been impossible.

Research led by Eric Finkelstein, Ph.D., puts obesity's annual price tag at $93 billion in the U.S. He and others at RTI are continuing to study this problematic health issue.

identifying solutions for reducing health care costs

If we lose our health, how do we get it back? If we are sick, how do we become well? What medicines do we take?

To find new drugs, RTI chemists are looking to the natural world for promising compounds. They are isolating these compounds and determining ways to synthesize them.

Elsewhere at RTI, researchers are looking at interventions that can lead to behavioral changes that reduce the transmission of disease.

Ensuring a Future for Nature-Based Research

The discovery of the successful anti-cancer compounds Taxol® and camptothecin™ by Mansukh C. Wani, Ph.D., and the late Monroe Wall, Ph.D., is emblematic of RTI's support for natural products research—the search for life-saving drugs from natural sources. By releasing the molecular power locked inside fungi, tree bark, and the like, natural products research has saved hundreds of thousands of lives and has helped place a special priority on environmental preservation. The complex molecules in nature, exponentially more complicated than those designed through human ingenuity, have evolved over millennia to provide robust, disease-fighting mechanisms. They constitute an irreplaceable natural resource for the entire planet.

Yet research like that done by Wall and Wani risks being neglected as researchers leave behind more traditional methods in favor of newer drug discovery techniques. One indication of this unsettling situation is that there are virtually no postgraduate training opportunities in natural products research, leaving a disturbing gap in the preparation of scientists able to perform this necessary work.

To right the balance, RTI is seeking funds for the Monroe E. Wall and Mansukh C. Wani Fellowships in Natural Products Research, to be awarded to postdoctoral fellows and a visiting scientist. They will afford these scientists a rare occasion for mentoring and self-directed research, study, and publishing. The fellowships will represent an investment in the vital field of natural products research and a long-term commitment to improving the human condition.

Nicholas Oberlies, Ph.D., and Mansukh C. Wani, Ph.D., are among those at RTI working to keep the field of natural products research strong. RTI is currently seeking funds for the Monroe E. Wall and Mansukh C. Wani Fellowships in Natural Products Research.

Addressing HIV/AIDS Among High-Risk Populations

Unforeseen and unpredicted only 25 years ago, HIV/AIDS has become a scourge affecting many young and old around the world. RTI is one of the leading research organizations involved in the struggle against the spread of AIDS. Our research, technical support, and clinical expertise has helped societies face some of the most urgent and difficult medical, social, and political challenges they may ever see.

Last year's annual report mentioned a groundbreaking pilot study, led by RTI's Wendee Wechsberg, Ph.D., that looked into the possible interconnectedness between substance abuse and violence among female South African commercial sex workers and rising HIV infection rates in that same group. A $3 million grant has allowed Wechsberg's team to conduct a large randomized trial to determine the effectiveness of a women-focused intervention. The project, which began as a domestic study, is an excellent example of how new expertise developed by RTI in the U.S. can be of wider benefit internationally.

In the U.S., RTI epidemiologist Scott Royal, Ph.D., is leading RTI's participation in an HIV study sponsored by the Centers for Disease Control and Prevention and the Department of Housing and Urban Development that examines the impact of providing housing for homeless people living with HIV on their disease progression and the risk of transmission to others.

The 18-month structural intervention study will enroll and follow participants recruited from the three HUD-funded grantees and their partners in Baltimore, Chicago, and Los Angeles. Blood specimens will be collected periodically to measure the progression of HIV. Participants will be provided with HOPWA (Housing Opportunities for People With AIDS) housing and will meet regularly with an interviewer to complete a questionnaire tracking lifestyle and health issues as well as their experiences with social and medical services.

RTI, in conjunction with Columbia University (New York) and Emory University (Atlanta), has been contracted to lead the research and data collection for the project. Findings will help determine how to prevent the further spread of HIV and improve the health of those living with the disease who are homeless or at imminent risk of homelessness.

No new drug is discovered overnight. Success only comes, if at all, at the end of a long, painstaking process.

First, the initial inspiration. Then a hypothesis is evolved, tested, and proven to be scientifically sound. Years of data gathering and analysis go into each single effort to provide data on safety and efficacy.

The full array of RTI's technical expertise and discipline goes into discovering and developing any new drug—whether to enrich an underserved area, like male contraception, or to fight the major illnesses that remain potent threats: cancer, typhoid, and HIV/AIDS.

Developing a New Contraceptive

Pharmacologist Brian F. Thomas, Ph.D., epitomizes the merger of RTI's mission with a growing entrepreneurial spirit, sparking new strategic efforts across the Institute.

When RTI chemists identified indenopyridines as having clinical promise as a male contraceptive, Thomas was asked to form a team to take the compound to a development point where partnership with a commercial company might be possible.

The course of indenopyridine's development is atypical of the more common avenues of drug discovery: the lead compound was brought to the attention of RTI's Edgar Cook, Ph.D., by a consultant (Vladimir Petrow, Ph.D.) while he was conducting a literature search. An indenopyridine had actually been under study at Sandoz Laboratories for its antihistaminic properties but was found to have one disqualifying side effect—it blocked the production of new sperm cells in males. But this was exactly the property RTI was looking for in a candidate for a lead compound in the race to develop a male contraceptive. Cook was able to see that this "undesirable" effect could be of therapeutic interest, and he obtained funding during the 1980s and 1990s from the National Institute on Child Health and Human Development to support the synthesis and testing of a series of these compounds. This work led to the current compounds, which have increased potency and selectivity.

In 2001, Thomas was assigned the role of development team leader. The team's goal was to use RTI funding to demonstrate the safety and efficacy of the most potent male contraceptive among the indenopyridines. This information would then be used to seek an appropriate commercial partner. "We knew we had to ask and answer every possible question that might be raised along the way regarding the indenopyridine as a commercial venture and that the studies we conducted would have to increase its inherent value and attractiveness as a commercial property."

Recently, after years of careful planning and strategy, RTI has entered into a royalty agreement with a pharmaceutical company to further develop and market the new drug. If the indenopyridine proves successful, it could have a worldwide impact on reproductive health and population growth. Also, it could produce revenue that will help RTI make contributions for years to come.

Brian Thomas, Ph.D., is leading the team that is working to bring a male contraceptive compound to market.

exploring contraceptive solutions

Health delivery services are constantly being improved and extended. To keep up, the laws and systems designed to create the widest possible access to them must be adjusted, interpreted, tested, and improved.

AT RTI, we evaluate health care organizations and their interactions with the people they serve in a number of ways. We look at workforce and resource allocations for the delivery of medical and dental health services, as well as the characteristics of the persons served. In particular, we focus on increasing the access that special populations have to health services and on reducing health disparities across race/ethnic identity, disability or health status, and socioeconomic factors.

Leading Research in Medicare and Medicaid Services

When an opportunity is identified to dominate a market, RTI does not hesitate to assemble the best resources available to pursue it, even if that means acquiring an operation that already exists. RTI was a major contractor with the U.S. Centers for Medicare and Medicaid Services (CMS) in 2002 when we acquired Health Economics Research (HER), also a leading CMS contractor. With the additional expertise, RTI became one of the leading firms to design and conduct CMS research studies. Janet Mitchell, Ph.D., who owned HER with her husband, Jerry Cromwell, Ph.D. (now an RTI Senior Fellow), currently runs the RTI division that focuses on research for CMS.

Starting professional life with a strong desire to affect people's lives in a positive manner, Mitchell first prepared for social work. "But I realized that in social work you can help only one person at a time," she recalls. "I wanted to help as many people at a time as I could—as well as work on some of the bigger issues." And the bigger issues are what she and her RTI colleagues focus on now.

Typically, Mitchell and her staff will devise and carry out studies that allow CMS to get feedback on the success of existing programs and test the effectiveness of new ones. "If Medicare is trying out a new way to pay hospitals or a change in delivering managed care, CMS will need answers to a list of questions: What will the likely effects be? The cost? Will the program be understood by those using it? How will it affect access to care or satisfaction? And the list goes on."

From Mitchell's standpoint, it was a logical and productive move for her to join forces with RTI. "Often we have to design a large survey of providers or beneficiaries, and in the past we would contract this out. Now we can look across RTI to draw on staff throughout the Institute. RTI has everything we need to carry out these kinds of complex evaluations."

The integration of Mitchell's staff from HER has made RTI the dominant player in the competitive CMS research picture. Most important to Mitchell, she was able to continue doing the research she believes in and loves. RTI's mission was a perfect fit with her own.

With help from researchers across RTI, Jan Mitchell, Ph.D., is helping to build a strong program in Medicare and Medicaid studies. Together, RTI staff are providing these government programs with information about the success of existing procedures and the effectiveness of new strategies.

evaluating solutions for access to health care services

RTI Health Solutions (RTI-HS) provides leading consulting and research expertise to design risk management programs, evaluate disease burden, assess safety, and measure value for pharmaceutical, biotechnology, and medical device products.

Experts in epidemiology, health economics, patient-reported outcomes, psychometrics, statistics, and clinical development design and implement research programs customized to meet each client's specific needs.

Clients rely on our consulting expertise and study results to guide clinical development, regulatory strategies, and post-approval research and marketing programs.

Using Psychometrics for Patient-Reported Outcomes

The work of RTI Health Solutions' Lori McLeod, Ph.D., exemplifies the growing focus on patient-reported outcomes (PROs), an increasingly important area for assessing the value of new drugs and medical interventions. McLeod is Director of Psychometrics for RTI-HS's PRO group. RTI-HS is a separate business unit within RTI dedicated to working with the pharmaceutical, biotechnology, and medical device industries.

Assessing PROs makes use of McLeod's specialty, psychometrics, to measure the impact of drug therapy on aspects of outcomes such as patient quality of life, functional independence, and patient satisfaction. Government regulators around the world are paying increasing attention to PROs, which use statistical methods to measure these less tangible variables.

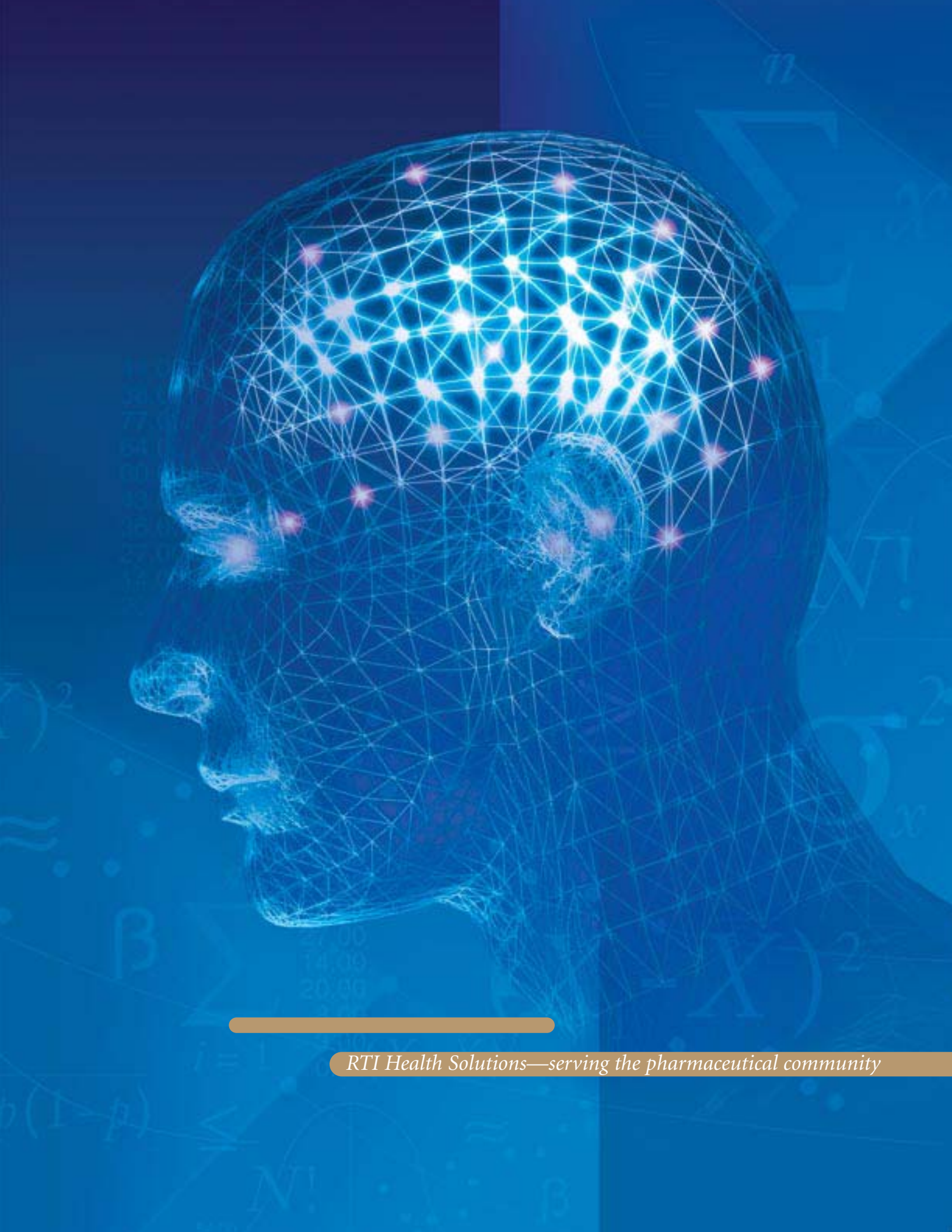
McLeod began her career as a psychometrician in the standardized testing industry, helping determine validity and appropriate scoring for intelligence and aptitude tests. Joining RTI-HS, she applied her experience to pharmaceutical outcomes, still a new application for psychometrics. With five graduate-trained psychometricians, RTI-HS has established industry-leading capabilities in this developing field.

The studies McLeod participates in span a wide range of therapeutic areas, including psychiatry, respiratory disease, cardiology, gastroenterology, oncology, pain, and sexual dysfunction. Her role is to develop strategies for measuring PROs; this includes designing new survey instruments as well as evaluating the validity of existing questionnaires.

McLeod has found that the development of effective PRO measures requires a high degree of cross-disciplinary teamwork. "It's critical to look at health and therapeutic issues from every possible perspective in order to develop the best possible measurement tool."

What she values above all is the chance to use her specialty to improve people's lives by including the patient's own perspective in evaluating health outcomes. "That's what's wonderful about working at RTI-HS—at the end of the day, I can feel I make a difference."

Lori McLeod, Ph.D., and patient-reported outcomes are lifting patient feedback to new levels.



RTI Health Solutions—serving the pharmaceutical community

Nowhere is RTI's goal of improving the human condition more apparent than in the fields of health and environmental research. Constituting our largest single field of study, health research at RTI spans everything from the human genome to global health education. And in our environmental research, we look at all aspects of a problem and strive to provide innovative and cost-effective solutions.

RTI's goal through this research is to enrich all aspects of health and well-being—whether we are studying the cost-effectiveness of public health interventions or working to prevent and alleviate the effects of human exposure to toxic chemicals.

RTI Teams with UNC to Study Economics of Common Diseases

A single revelation, like the remarkable cost of obesity to American society, can have major policy implications. But many smaller revelations in health also have the potential to make a difference—both economically and in terms of health consequences—if they are accurately researched and the results are promoted properly to the people who can benefit most from them.

RTI's national leadership in health economics has earned a $3 million grant, awarded by the CDC to RTI and the University of North Carolina's Center for Health Promotion and Disease Prevention, to fund a Center of Excellence in Health Promotion Economics. It will be one of only two such centers in the nation, with a research focus on the economics of common chronic diseases, conditions, and lifestyle choices—like diabetes, arthritis, smoking, and alcohol abuse.

The Center is part of a national effort to join the disciplines of economics and public health in a single cause: to deliver more efficient and effective health care services in every stage of life. The Center will be studying the cost-effectiveness of public health interventions and the effectiveness of economic incentives with an eye toward developing policy about how money should be spent in the future. In purely practical terms, the "economics core" of the Center, mostly RTI, will work with UNC's public health practitioners and health care providers—the "translation core"—who will apply and promote their research nationally to the public health community.

Tom Hoerger, Ph.D., directs the Center of Excellence in Health Promotion Economics. The Center will train health economists and public health workers in health economics methods.

Biologist Pat Cunningham, Ph.D., guides fish sampling procedures and, with other RTI researchers, analyzes data on contamination in fish and bodies of water.

Taking Environmental Tools to the World

Concentrations of mercury, a naturally occurring element, have been increasing in our nation's rivers, streams, and other surface waters over the past several decades.

When it bioaccumulates in fish and those fish are consumed, mercury becomes a health issue for people. High levels of mercury can cause a variety of health concerns: the most significant of these is neurological problems in young children.

RTI is working on several fronts to help prevent problems associated with mercury pollution. To make people aware of potential mercury dangers, RTI has provided technical support to the U.S. Environmental Protection Agency's Fish Contaminant Program since 1990. As part of this work, we maintain a database of fish tissue contaminant data provided by the states to EPA and conduct national analyses of mercury levels in various fish species. In addition, because mercury is responsible for more than 50% of all fish advisories nationwide, RTI has developed special graphics on trends in mercury advisories, fish species contamination, and waterbodies affected by mercury. Fish advisory information is available to EPA, the states, tribes, and the public on a website developed by RTI (http://map1.epa.gov).

RTI engineers are also working to minimize mercury pollution in the United States at its main source: coal-fired power plants. With funding from the Department of Energy, we are developing sorbents that can remove mercury from coal-derived fuel gases prior to combustion. This will enable the next generation of coal-fired power plants to significantly reduce their mercury emissions.

In related work, we are conducting research for EPA and other federal agencies to better understand the sources of mercury pollution, the risks associated with human exposure to mercury, and options for reducing mercury pollution. Together, all these projects will help safeguard human health and well-being by working to minimize the effects of this major environmental threat.

RTI strives to be the leading provider of solutions to a world often bewildered by the demands of change.

One area in which RTI has been making a difference around the world is in helping nations understand and control environmental pollution. RTI helps build local capacity to identify, investigate, assess, and address environmental protection issues. We supply a range of scientific and institutional skills required to manage water resources, air quality, and solid waste at local, regional, and national levels in developing countries.

Helping China Prepare for the 2008 Olympics

Terry Pierson, Ph.D., a 20-year RTI veteran, has led the development of some of RTI's most sophisticated environmental models and decision support systems, most of which were developed for use in the U.S. In recent years, Pierson and others at RTI have seen the need for these same types of systems and capabilities in developing or emerging industrial economies. As a result, we have shifted some of our focus toward environmental solutions for an international market. "We have projects right now in Europe, Africa, the Middle East, China, India, Japan, and Mexico, all of which draw very strongly on things we have done in the U.S.," says Pierson.

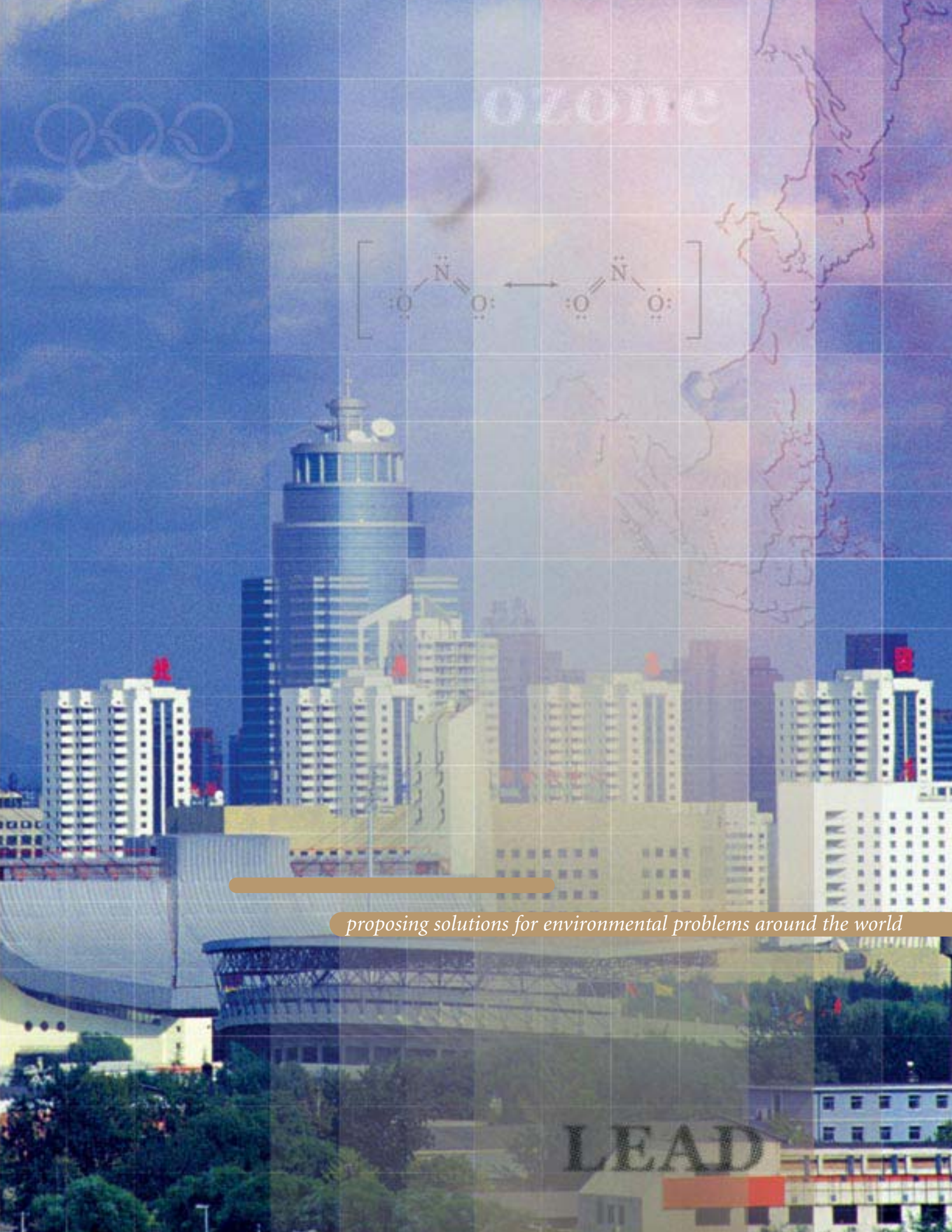
Often, he notes, RTI is in a position to anticipate a country's environmental problems. "Some of them lack expertise to formulate their needs. We can help them identify the problem and propose a solution."

As problems emerge that require new solutions, RTI's environmental expertise adds value for a growing number of new clients worldwide. China is a great example. "There's a lot of attention on China for the Olympics of 2008," says Pierson. "The environmental aspects—especially the air quality issues—need to be addressed."

Pierson views air quality work in China as an opportunity for RTI to leverage other kinds of environmental solutions for China's rapidly developing economy. Already, for example, for China's Hai River Basin project, which provides a system for characterizing and managing the river's water quality, RTI is using hydrography tools and models that we developed for both domestic and international clients.

"In the years ahead, we will continue to help nations identify and solve their most pressing environmental issues," Pierson says. "We consider it an imperative and an obligation to use our expertise and skills to work with countries that are facing severe environmental problems both to address those problems now and to build a capacity within the country to address future problems."

Environmental scientist Terry Pierson, Ph.D., and others at RTI use sophisticated models and support systems in the U.S. and around the world to solve environmental problems.



proposing solutions for environmental problems around the world

Advanced technology research and development at RTI brings innovative ideas out of the laboratory and into practice. Together with our clients and strategic partners, we are making a difference in research and development worldwide. From new solutions for clean fuels to new semiconductor materials, we help our clients realize the promises of advanced technology today.

RTI is dedicated to helping our customers achieve their goals through the identification, development, application, and transfer of leading-edge technologies.

Focusing on Clean Fuel and U.S. Energy Independence

Energy research at RTI easily fits under the same roof with our efforts to preserve environmental safety. Indeed, large-scale industrial use of fossil fuels drives many of the modern economies of the world—and takes its toll in harmful emissions.

RTI's various energy research programs are united by a single goal: the quest for cleaner and more efficient sources of energy that will meet the nation's energy needs. Technologies under study and development at RTI include:

—Biomass energy as a sustainable fuel source
—Hydrogen as an alternate fuel source
—Desulfurized, clean-burning liquid gasoline and diesel fuels
—Sulfur-free and clean-burning hydrogen derived from coal

Coal-derived fuel suggests a second major theme in RTI's energy research: independence from foreign energy. Our reliance on such sources has led to a multitude of complications that could be described as threatening our domestic security, as well as our environmental health. "To break our dependence on imported oil, we are trying to promote domestic resources," says RTI chemical engineer Raghubir Gupta. "And the biggest domestic resource we have is coal." The main problem with coal, of course, is emissions of noxious compounds into the atmosphere. Gupta heads RTI's Energy Technology program, which aims to produce, as a practical alternative, a coal derivative that in a gaseous state burns as clean as natural gas. "Our programs have those common goals—either national security or protection of the environment or both."

Nowhere is change more noticeable than in energy research, where a shift in the dynamics of the world's economies can completely reorder research priorities. Gupta recalls a day, not long ago, when natural gas was cheap and interest in alternative fuel sources was low. A swing in the opposite direction, however, produced a new surge of interest—and contracts for research projects that would have seemed highly unlikely only a few years before. With Gupta and his group, readiness to accommodate and ride change goes a step further. "We are developing road maps for things that might happen two years from now, three years from now. Our clients don't see it, but we do. And we're able to tell them, 'Guys, here's what we need to do.' And we help them get funding. In fact, that's one of the greatest things about the Institute—we are very quick to change and adapt."

Raghubir Gupta, Ph.D., leads a team of researchers at RTI working to provide cleaner and more efficient fuels to meet our nation's energy needs.

developing energy solutions for a clean, self-sufficient world

Environmental hazards—and terrorism—know no borders. RTI researchers are working on several projects that aim to protect our environment and our world from a range of threats.

On the environmental front, we conduct research that informs the development and evaluation of public policies designed to protect air, water, and land resources. We excel at performing environmental measurements, conducting research, and providing scientific, technical, and policy analysis for both government and commercial clients.

We also apply our environmental, public health, and other knowledge to the more complex challenges associated with protecting our nation from terrorism. RTI's breadth of knowledge allows us to take a multidisciplinary approach to ensuring our security.

Tracking and Trapping Greenhouse Gases

The earth's atmosphere surrounds us like a protective coat, helping maintain in delicate balance the basic environmental conditions we depend on to survive and thrive. Certain gases, principally carbon dioxide (CO_2) and methane (CH_4), have a propensity to hold heat, creating the greenhouse effect and possibly leading to harmful, long-term climate changes—a macro-environmental threat.

RTI supports challenges to greenhouse gas emissions on multiple fronts. Attacking one of the principal uncontrolled sources of methane gas at the source, AgSTAR, a joint project of the U.S. Environmental Protection Agency, the U.S. Department of Agriculture, and the Department of Energy, allows farms to capture methane from manure before it is released into the atmosphere and put it to practical use as fuel for generating electric power. RTI is supporting this outreach program.

On another front, RTI economists have developed the ADAGE model for dynamic analysis of the global economy in terms of greenhouse gas production and mitigation. ADAGE is a computable general equilibrium model that can be used by economic scientists to assess the relative merits and impacts of greenhouse gas mitigation strategies and other environment-related policies.

At the core of RTI's climate change research is the conviction that climate change cannot be ignored: it should be considered a threat to earth's ecosystem. Further research is essential to help ensure the well-being of all present and future generations.

Economist Brian Murray, Ph.D., and environmental scientist Marion Deerhake, Ph.D., attack atmospheric pollutants from different directions, with different disciplines.

Bill Savage, research computing technical lead, will develop a meta-data catalog for researchers accessing the PREDICT secure data repository.

Preserving our Homeland Security

RTI recently won its first direct contract from the U.S. Department of Homeland Security, a sober harbinger of new research needs as a result of 9/11 and President Bush's War on Terror. Starting in January 2005, RTI will manage PREDICT (Protected Repository for the Defense of Infrastructure Against Cyber Threats), a secure data repository intended to support the development of research and products that will protect our nation's cyber infrastructure.

Homeland security, because it addresses vulnerabilities of all kinds, reaches across the Institute, involving research fields as disparate as agriculture and public health, toxicity, and trauma simulation. It is RTI's multidisciplinary richness and complexity as a research organization that allows us to engage in the full complexity of homeland security issues. Attacks could be made against any sector of our society—the national computer grid, agricultural and food systems, drinking water, air. RTI's resources provide the ability to study these multiple sectors.

Already, RTI has been involved in homeland security projects that include everything from groundwater monitoring to a simulated public health response to avian flu. In February, RTI President Victoria Haynes was appointed to the Homeland Security Advisory Council. Look for RTI to declare many more such projects as we move ahead in 2005.

RTI crime and justice researchers are working on the problems violence brings to our society and to the world at large. Using both traditional and multidisciplinary approaches, our versatile team of crime and justice researchers builds knowledge and informs policy and practice.

We conduct a wide range of studies on the causes, consequences, and prevention of violence, delinquency, and other criminal behaviors, as well as the administration of justice and criminal justice system operations.

Studying Violence in Families and Among Nations

As the challenge of protecting domestic security grows in magnitude and intensity, RTI's Margaret Zahn, Ph.D., sees issues of crime and justice take on new dimensions. Director of RTI's Center for Crime, Violence, and Justice Research, Zahn is frequently invited to represent RTI at meetings on international terrorism and to contribute to the work of commissions studying issues that might seem, at first glance, far removed from her normal work. She focuses on violence on a smaller scale—domestic violence, violence in schools, and delinquency among girls.

What unites the extremes in her work, she observes, is that at the core of all the projects "there is the basic driving factor of violence—whether violence in families, violence in the school yard, violence on the streets, or violence among nations. It's a related phenomenon that exists across a number of spectrums—and we study them all." Zahn currently teaches a course in Terrorism and Public Policy at NC State University, where she was Dean of the College of Humanities and Social Sciences before joining RTI.

Zahn oversees a large staff of researchers pursuing a growing range of activities. "We want our work to have the chance to make a major impact on some of the problems currently confronting this world—whether those problems are factors that hurt young women, or whether it's the danger of confronting a school bully."

One research project of great personal interest to her is the Girls Study Group, a national initiative to understand girls' patterns of delinquency and to design effective intervention program models.

Yet the international theme continues to grow and occupy the Center's attention. Zahn is firmly convinced that "one of our future thrusts certainly will be additional work in terrorism and homeland security."

Marge Zahn, Ph.D., deals with violence on many levels in her research at RTI, including international terrorism and violence in the family, in the school yard, and on the streets.

solutions for preventing violence

Even in the midst of conflict, we can help a people build basic structures for the institutions that will carry them into their future, confidently empowered.

RTI is committed to the long-term ideals of decentralization and independence. During the past 30 years, we have worked with many nations as they developed their own capacity to govern. We have supported the process of democratic transformation in Iraq—and also in El Salvador, South Africa, Kosovo, Ukraine, and elsewhere.

Bringing Local Governance to Iraq

"The majority of Iraqis want security, a democratic government, and economic opportunity so they can move on with the work of improving their basic quality of life."

This is the view of RTI International's Peter Benedict, the Iraq Local Governance Project's man on the ground there. After 18 months of helping set up the beginnings of locally representative governments throughout 17 of Iraq's 18 provinces, he remains cautiously optimistic that this goal will be achieved.

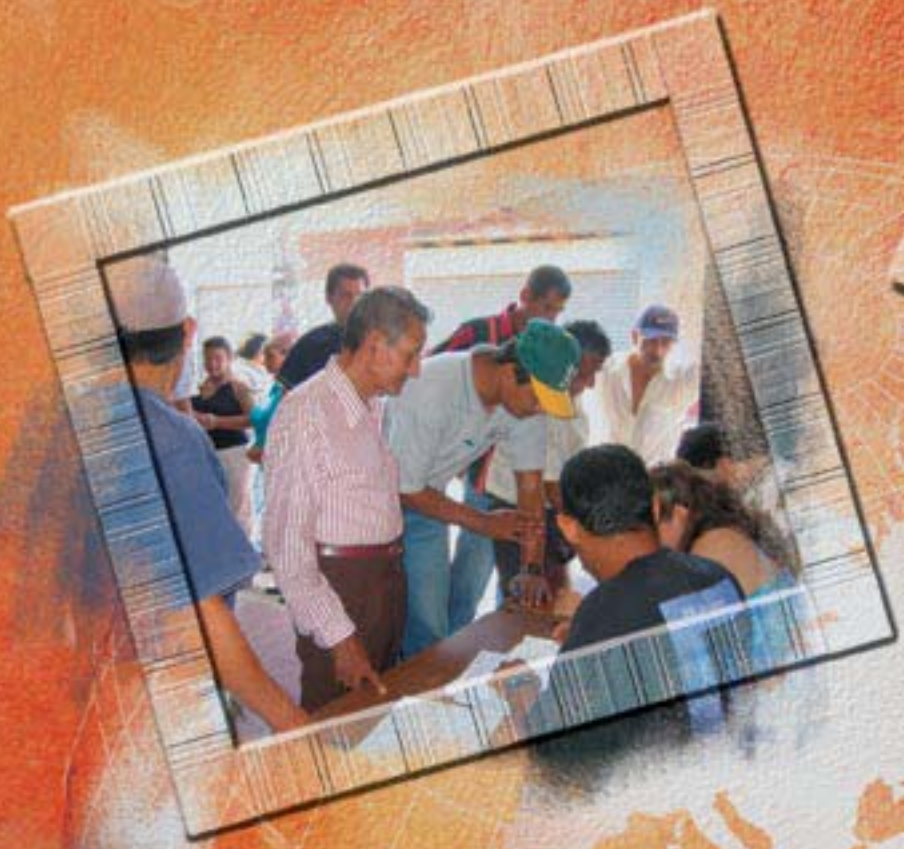
Aaron Williams, RTI's Washington liaison with our client, the U.S. Agency for International Development, agrees: "It's not that the terrible things we see on TV—the car bombings and such—don't happen. They do. But there's another Iraq in which people are trying to go about the work of rebuilding their country. It's sometimes hard in the U.S. to distinguish between the two perspectives because the violence in Iraq tends to push the news about progress off the screen."

Iraq's future is potentially bright, but it is complicated by what has proven to be a resilient insurgency in many parts of the country. Iraq has vast oil resources, a good road network, and untapped potential as one of the strongest agricultural producers in the region. However, the continuing insecurity and instability threaten the efforts of average Iraqis to create a democratic society.

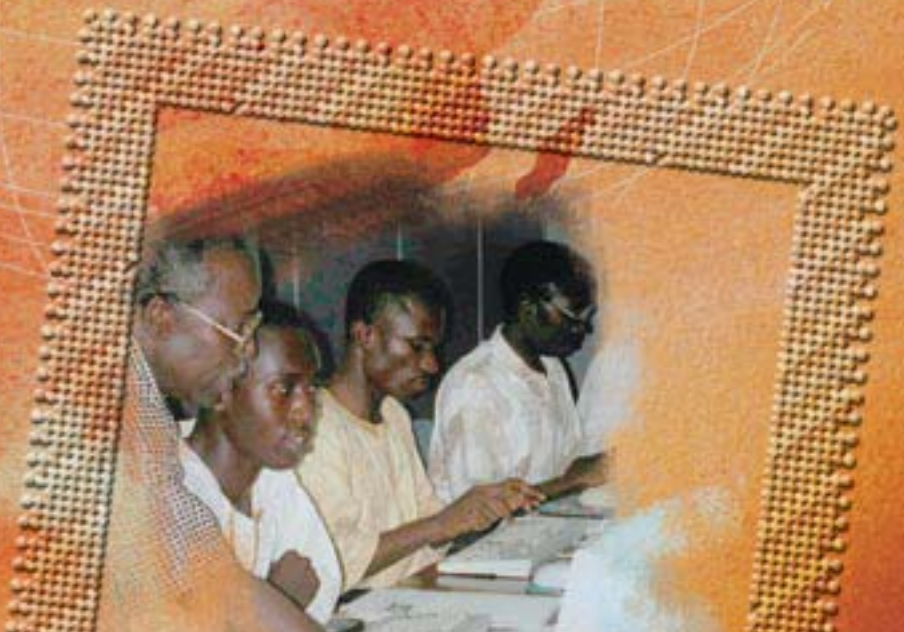
"Once Iraq is stable and relatively violence-free, you are going to see many more talented Iraqis step forward to assist those who have been shouldering the burden thus far," Williams says. "We cannot say enough about the Iraqi patriots who have risked their lives to help build the foundations of a democratic society in very dangerous circumstances. They are courageous people who have come forward in a time when even the simplest gesture of cooperation can endanger their lives."

Meanwhile, there is still difficult work to be done in Iraq, and RTI remains committed to helping the people of Iraq develop their own capacity to govern.

Aaron Williams and Peter Benedict are examples of the high level of professionalism RTI brings to an extraordinarily demanding situation. Williams has 22 years of overseas and Washington experience in international development, and Benedict has spent a lifetime in foreign service, much of it in the Middle East.



aiding local governance solutions around the world



RTI supports education reform around the world. We work with local and international partners to design, develop, and implement education systems that meet national priorities, are sustainable and manageable with national resources, and lead toward the international objective of quality education for all.

We have a long history of education reform work. Our reputation is demonstrated through many long- and short-term projects across Africa, Asia, Central Asia, Europe, Latin America and the Caribbean, and the Middle East.

Giving Children the Keys to the New Century

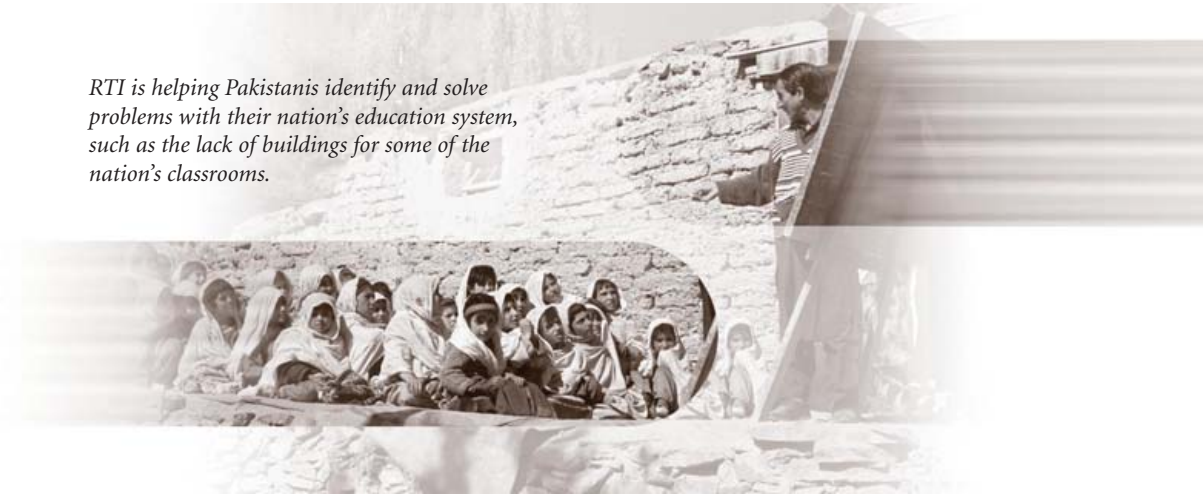
Through years of experience, RTI has forged methods of supporting educational reform that allow us to lead with confidence. In 2003, we headed a team of U.S. and local partners in Pakistan under a $60 million, 4-year award from USAID. This project, the Education Sector Reform Assistance (ESRA) program, will help build new capacity in Pakistan's education system by focusing on the following key areas: policy and planning, improved teacher-administrator skills, increased literacy, public-private partnerships, and information communication technologies.

"We want to empower Pakistani parents," says the project's manager, Jonathan Mitchell. "Like us, their main concern is an enhanced classroom experience that will give their children the skills to take advantage of the new opportunities of the 21st century."

By the late 1990s, a chill between the U.S. and Pakistan had caused the U.S. to close its USAID mission in Pakistan. RTI was one of the first U.S. organizations to return, with overall management responsibility for the ESRA consortium, which includes the Education Development Center, the American Institute for Research, Save the Children, World Education, the International Reading Association, the Asia Foundation, Eastern Washington University, and the University of Wisconsin-Green Bay.

From the start, all parties had their work cut out for them. ESRA began with the basic and rather stark realization that Pakistan's literacy rate was only 42%. No more than 70% of children had ever attended school, and of those only half completed five years. According to official Government of Pakistan figures, 20% of the schools are "shelterless"—that is, they have no buildings—51% have no boundary walls or latrines, 67% have no electricity, and 48% no running water. Fifty percent of primary school teachers have no more than a high school education.

But this is the sort of challenge that RTI has become accustomed to in recent years. By focusing on school improvement and the ways and means by which stakeholders throughout the system can identify and solve their own problems regarding school improvement—by putting in place the structures, systems, mechanisms, and procedures necessary to drive ongoing school improvement—ESRA's legacy will live long after the program comes to a close. By focusing on the needs of Pakistan's youngest citizens, we are helping strengthen the country's future and furthering its own mission.



RTI is helping Pakistanis identify and solve problems with their nation's education system, such as the lack of buildings for some of the nation's classrooms.

RTI's work to help improve the education system in South Africa continued in 2004 with the award of a new contract from USAID.

Rebuilding South Africa's Education System

Education has long been the means by which societies pass along their most vital culture to future generations. During the apartheid era, privileged schools in South Africa rivaled the best in North America and Europe, but disadvantaged schools were as deficient as any in Sub-Saharan Africa. It was clear that real commitment to human advancement in the new South Africa would have to begin by addressing the inequities hardened into a system that still prevails in South Africa's schools, across all nine provinces.

Even before the regime change that brought Nelson Mandela to power, reformist F.W. de Klerk had officially dismantled apartheid. Already by 1993, RTI was helping plan a new era for South African education that would serve all citizens equally—including subsidies targeted exclusively for schools determined to have the most acute needs. In 1998, RTI won a USAID contract for $24 million to help build the new South Africa, with an initiative called the South African Basic Education Reconstruction project, later renamed the District Development Support Program (DDSP). The project focused on the four provinces with the largest and/or most economically disadvantaged student populations.

This year, a new 4-year contract, the Integrated Education Program (IEP), directs RTI to concentrate on the same schools and teachers who received support under the DDSP and to add new schools from the same provinces. Teacher training will emphasize math and science in primary and secondary schools. Improvements and best practices tested and approved by the national Department of Education will ultimately deploy throughout the other five provinces.

RTI's decade-long involvement in South Africa began with careful observation, analysis, and planning. We then formed partnerships with USAID, non-governmental organizations, and national and provincial departments of education. With our partners, we then moved from planning to implementation of the most urgent priorities of the South African government. This includes training and assessing students, teachers, district officials, School Management Teams (SMTs), and School Governing Boards (SGBs) based on the needs identified during the DDSP and tracking progress throughout the course of the IEP project.

As we enter our 12th year of supporting South African education, RTI is privileged to work with the South African Government in advancing the future of an entire nation by helping it rebuild its education system.

RTI is committed to improving the quality of all aspects of education—from early childhood development to adult education—through research, program evaluation, training, and policy analysis.

We conduct studies addressing real-world problems—both in the U.S. and around the world—to inform good policy decisions and improve educational opportunities and experiences for children and adults, including those with disabilities.

RTI Staff Collaborate on Education Surveys

A cross-Institute education survey team led by John Riccobono, Ph.D., is an excellent example of RTI's entrepreneurial flexibility. Riccobono is responsible for a division of dedicated education research staff who work collaboratively across other organizational units to form a virtual program, with project teams and leaders drawn from RTI's social and statistical sciences. Riccobono's team studies elementary and secondary school outcomes, transition to postsecondary education, and postsecondary education experiences, as well as factors related to school access and choice. These studies, funded by the U.S. Department of Education, focus on such programs as student financial aid and programs for assisting disadvantaged students, providing policymakers with data regarding student persistence and attainment.

Recently, the program acquired the U.S. components of two international assessment studies that will permit comparisons of American students' science knowledge and reading ability with those of students in more than 50 other countries. "All of these are very large-scale, nationwide studies," says Riccobono, "and several are longitudinal in design, allowing continued examination of early work experience and family formation." Since no single division has all the staff skills and competencies needed, the program's success has been based on at least a decade of collaboration, with many of the same staff staying involved during all or much of this period.

Riccobono's group has a reputation among federal clients and other research organizations for being innovative. "We're always developing new approaches and solutions to problems and deploying new technologies. We're fortunate in that our major client shares our passion for innovation. That keeps the work interesting and challenging for all of us, which also explains why so many staff stay committed to our business."

Riccobono, who came to RTI when the Institute first initiated education as a formal program in 1973, is pleased to see collaboration become a top priority. "With the depth and diversity of talent available at RTI, almost anything is possible. If you can interest and motivate others, regardless of where they may reside in the organization, you've got yourself a team. That's the exciting thing about being at RTI today—this pervasive collaborative spirit."

John Riccobono, Ph.D., assembled a team of researchers to conduct a large-scale national education survey that includes not only education researchers but also staff in survey research, research computing, and statistics.

providing solutions through national education surveys

RTI can see how the force of education has powered a dream for North Carolina that now extends to the rest of the U.S. We see it because it lives in our backyard.

Ideas abound in North Carolina's Research Triangle, as they always have—ideas for new technologies, new products, and the latest intersections of opportunity and expertise.

Extending the Research Triangle's Research Dreams

Change presents opportunities as well as challenges, and organizations require market insight to achieve competitive advantage in a time of change. Researchers at RTI look for crossing points where emerging technologies intersect with market opportunities and use this knowledge to help guide clients toward strategic advantage.

RTI offers a powerful combination of insight, knowledge, and experience to help companies discover and capitalize on the commercialization opportunities made possible by new technologies.

Under the leadership of Dan Winfield, director of RTI's Center for Technology Applications, RTI recently completed a project for the Research Triangle Regional Partnership (RTRP)—a collaborative effort to develop a new economic vision for the Research Triangle region. In a time of increasing global competition for new jobs and investment, the Triangle—home of RTI headquarters and nearly 100 other corporate and institutional centers—faces considerable economic uncertainty.

In the knowledge economy, innovation is a critical element for economic growth. RTI analyzed the innovation assets of this region to identify eight "application clusters" representing the most fruitful areas where the Triangle region has a competitive advantage. These included informatics, pharmaceuticals, and using technology to extend and improve the delivery of advanced medical care.

RTI's analysis formed the basis for RTRP's award-winning 5-year, $5 million initiative "Staying on Top: Winning the Job Wars of the Future." The goal: to create 100,000 new jobs and new prosperity for the 14-county Research Triangle region.

Dan Winfield and the University of North Carolina saw opportunity for North Carolina's Research Triangle—and a potential 100,000 new jobs.

RTI engineers are making superlattice thermoelectric modules like these, which they are using to develop an experimental heat-to-electric power conversion system for DARPA.

Selling a Thermoelectric Miracle

Breakthroughs in technology usually come in small increments. Occasionally we see a breakthrough of unusual proportions. This was the case when, after years of backing by the Office of Naval Research and the Defense Advanced Research Projects Agency, RTI's thermoelectrics team produced a new material that offers more than double the efficiency and 23,000 times faster cooling than existing bulk thermoelectric technology.

The breakthrough was spectacular, yet it did not happen overnight; the team, led by RTI nanotechnologist Rama Venkatasubramanian, Ph.D., had worked patiently since the early 1990s. "Last year we made public our proof of concept devices," says Venkatasubramanian. "This year we showed that they had practical uses."

The key breakthrough is a thin-film superlattice technology, smaller than a postage-stamp-sized semiconductor device, that has the potential to make a dramatic difference for the next generation of microprocessors. It could also open the way to a new generation of fiber-optic switches and solid-state refrigeration units, much smaller and more power-efficient than has been possible until now.

RTI's thermoelectric breakthrough is doubly significant for its huge promise in the commercial marketplace. Commercialization is always a possible goal for a promising new technology developed within the Institute. "We've shown that we can add value to cooling solutions for the next generation of electronic devices," notes Venkatasubramanian. And indeed, RTI has identified ready investors and plans to spin off a significant portion of the thermoelectrics group as an independent, for-profit enterprise under the leadership of Jesko von Windheim, Ph.D., who has been RTI's entrepreneur in residence since 2003. The fundamental science and technology of nanoscale thermoelectrics and related topics will continue at RTI.

In the tradition of the previous RTI spin-off, Ziptronics, thermoelectrics is the current focal point for launching a new RTI technology platform into the commercial world. But in anticipation of future new ventures, von Windheim points to the commercial possibilities of nanofibers, genomics, data management technologies, and many other developments (still in the R&D stage) that are today rapidly filling the pipeline at RTI.

We bring the circle to a close, as we began, with RTI's support for the entrepreneurial spirit that enlivens all our efforts to improve the human condition.

Our hope is that RTI employees will continue to find new ways to improve their own small piece of the human condition. We know it is by helping our closest neighbors thrive that we will thrive. Putting this knowledge to work is yet another way we turn our ideals into action—right here in our own backyard.

Bringing Community-Supported Agriculture to RTI

If human advancement is more than just a phrase in our mission statement, it should go without saying that we owe our employees the same consideration and respect that we accord the rest of the world. This is why when Employee Communications Supervisor Jill Denning learned of the community-supported agriculture (CSA) concept, a system for retailing local farm products, RTI became Research Triangle Park's home to this innovative program.

CSA reflects a strategy to connect local farmers with local consumers and develop a regional food supply and strong local economy. In 2003, after representatives from NC State University contacted RTI about being a host for several local farmers, RTI agreed the program was a good way to reach out to local area farmers while providing RTI employees with fresh farm products to take home once a week. Denning was happy to make the program work on RTI's end.

Participating RTI employees can prepurchase shares from one or more of the six participating farms' expected year's output. Farmers participating in the program offer such goods as fresh vegetables; free-range meat, poultry, and eggs; home-baked goods; and herbs and flowers.

Between 10% and 15% of RTI employees, as well as a number of employees from other Research Triangle Park companies, now utilize the growing program. Says Denning, "When I hear how much both the farmers and the employees benefit from the program, I know it was worthwhile for us to sponsor the effort." After spending a year getting the program off the ground at RTI, Denning now shares her leadership role with others. RTI statistician Celia Eicheldinger serves as RTI's point of contact, with the able assistance of an all-volunteer committee.

Both Denning and Eicheldinger view RTI's tradition of respect as one of the best reasons to work here. "I guess I do sleep a little better at night knowing that we are helping to support sustainable agriculture in the Triangle area," says Eicheldinger. "What's significant is that we never had to fight corporate indifference or resistance. RTI is great about going out of the way to give us their blessing and support."

Celia Eicheldinger and Jill Denning found a way to improve the lives of both local farmers and RTI employees by bringing fresh produce to RTI's Research Triangle Park campus.

support for our ideals, solutions for local farmers

Financial Summary

RTI's revenue from contracts and grants totaled $509.5 million for the fiscal year ending September 30, 2004 (FY2004), an increase of 52.9% over the previous year ($333.3 million). All RTI business units experienced continued growth in 2004, with a majority of the growth resulting from contracts and grants for work performed overseas.

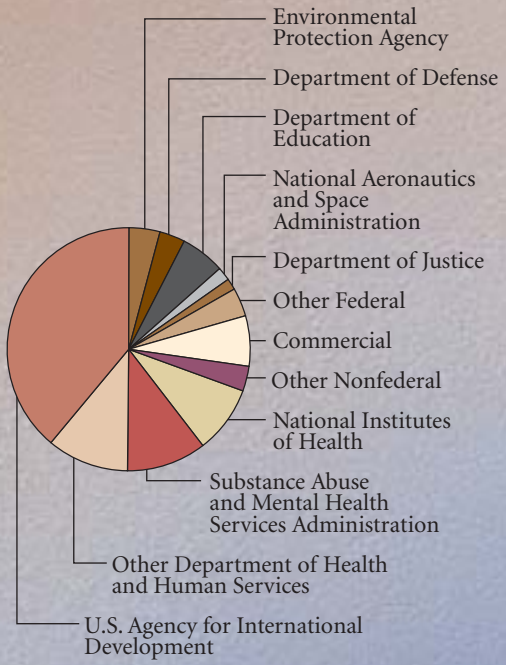
Our net revenue increased to $17.2 million for FY2004, an increase of 95.5% over FY2003 ($8.8 million). As a nonprofit corporation, RTI invests its net revenue in facilities, programs, and capabilities to further its mission of conducting research that improves the human condition.

RTI's financial position continues to be strong, with Institute equity increasing to $120.0 million as of September 30, 2004 (a 16.7% increase) and a debt-to-equity ratio remaining at .57/1.

RTI received $531.9 million of new contract and grant funding during FY2004, an 18.8% increase over FY2003 ($447.6 million).

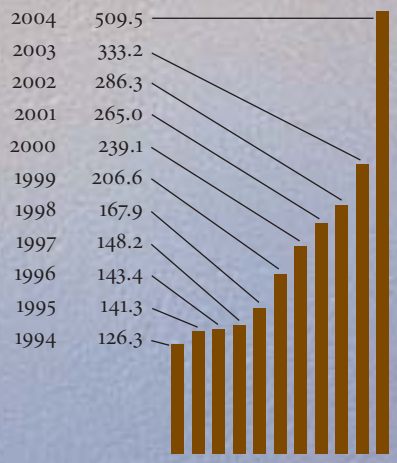
The following financial statements show the results from FY2004 and FY2003:

For the year:	FY2004	FY2003
Income Statement (in thousands of dollars)		
Revenue from research operations	$509,467	$333,270
Direct and indirect labor	(207,554)	(162,667)
Other direct costs	(228,959)	(122,461)
Other indirect costs	(55,044)	(37,800)
Other income (net of interest expense)	(703)	(1,590)
Net revenue	$17,207	$8,752
Balance Sheet (in thousands of dollars)		
Assets		
Current assets	$124,764	$98,371
Property and equipment, net	60,960	58,678
Other noncurrent assets	2,949	3,491
Total assets	$188,673	$160,540
Liabilities and Institute Capital		
Current liabilities	$65,142	$54,624
Long-term liabilities	3,541	3,133
Total liabilities	68,683	57,757
Contributed equity (unrestricted)	5,061	5,061
Contributed equity (restricted)	1,672	1,584
Accumulated net revenue	113,257	96,138
Total Institute equity	119,990	102,783
Total Liabilities and Institute Equity	$188,673	$160,540



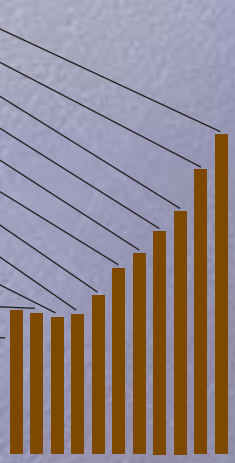
Revenue

Year	*$Million*
2004	509.5
2003	333.2
2002	286.3
2001	265.0
2000	239.1
1999	206.6
1998	167.9
1997	148.2
1996	143.4
1995	141.3
1994	126.3



Staff

Year	*Number*
2004	2,500
2003	2,301
2002	2,066
2001	1,952
2000	1,826
1999	1,738
1998	1,586
1997	1,481
1996	1,463
1995	1,485
1994	1,501



U.S. GOVERNMENT CLIENTS

Department of Agriculture
Department of Commerce
Department of Defense
Department of Education
Department of Energy
Department of Health and Human Services, including

- Administration for Children and Families
- Agency for Healthcare Research and Quality
- Agency for Toxic Substances and Disease Registry
- Centers for Disease Control and Prevention
- Centers for Medicare and Medicaid Services
- Food and Drug Administration
- Health Resources and Services Administration
- National Institutes of Health
  - National Cancer Institute
  - National Center for Research Resources
  - National Eye Institute
  - National Heart, Lung, and Blood Institute
  - National Institute on Aging
  - National Institute of Alcohol Abuse and Alcoholism
  - National Institute of Allergy and Infectious Diseases
  - National Institute of Child Health and Human Development
  - National Institute of Diabetes and Digestive and Kidney Diseases
  - National Institute on Deafness and Other Communication Disorders
  - National Institute on Drug Abuse
  - National Institute of Environmental Health Sciences
  - National Institute of Mental Health
  - National Institute of Neurological Disorders and Stroke
- National Toxicology Program
- Substance Abuse and Mental Health Services Administration

Department of Homeland Security
Department of Housing and Urban Development
Department of Justice
Department of the Interior
Department of Transportation
Department of Veterans Affairs
Environmental Protection Agency
National Aeronautics and Space Administration
National Science Foundation
Office of National Drug Control Policy
U.S. Agency for International Development

PRIVATE SECTOR CLIENTS

Amgen
Ardent Pharmaceuticals
Astec Industries, Inc.
Bayer CropScience
Becton, Dickinson & Co.
Bristol-Myers Squibb Co.
The CIIT Centers for Health Research
Closure Medical Corp.
Dominion Resources Inc.
Eastman Chemical Co.
E.I. duPont de Nemours & Co., Inc.
Electric Power Research Institute
Eli Lilly and Company
Florida Power & Light Co., Inc.
Gas Technology Institute
GlaxoSmithKline
Janssen-Ortho, Inc.
The Johnson & Johnson Family of Companies
MedPointe, Inc. (formerly Carter-Wallace, Inc.)
Merck & Co., Inc.
The National Pharmaceutical Council
New York State Electric & Gas
Niagara Mohawk Power Corp.
Nielsen Media Research
Novartis AG
Purdue Pharma LP
Progress Energy Carolinas, Inc.
Sigma-Tau HealthScience, Inc.
Smith and Nephew, Inc.
The Society of the Plastics Industry
Sumitomo Corporation
Underwriters Laboratories

OTHER CLIENTS

American Cancer Society
American Industrial Hygiene Association
American Legacy Foundation
Asian Development Bank
European Bank for Reconstruction and Development
Ford Foundation
Health Canada
Inter-American Development Bank
National Academy of Sciences
National Multiple Sclerosis Society
People's Republic of China
Robert Wood Johnson Foundation
Rockefeller Foundation
State of California
State of Florida
State of New York
State of North Carolina
State of Vermont
United Nations
World Bank
World Health Organization

Global Map of RTI Project Work

The map on these pages shows the countries where RTI staff have worked (shaded in light blue) during the past 45 years. The dots indicate countries in which RTI carried out projects in 2004. Also on these pages is a list of our government, industry, and other clients.

RTI Leadership

Victoria Franchetti Haynes
President and Chief Executive Officer

Lon E. Maggart
Chief of Staff

Research Units

Ronald W. Johnson
Senior Vice President,
International Development

Allen Mangel
Vice President,
RTI Health Solutions

Richard A. Kulka
Senior Vice President,
Social and Statistical Sciences

Donald P. Camburn
Vice President,
Statistical, Survey, and Computing Sciences

Allen K. Miedema
Vice President,
Health, Social, and Economics Research

Lynn Sclavounos
Vice President,
Federal Healthcare Optimization and Strategic Solutions

Chuck Thompson
Vice President,

Judith T. Lessler
Vice President,
Partnership for Genomics and Molecular Epidemiology

Satinder K. Sethi
Senior Vice President,
Science and Engineering

Terrence K. Pierson
Vice President,
Environmental Sciences

Alan H. Staple
Vice President,
Health Sciences

David F. Myers
Vice President,
Engineering and Technology

Administrative Organization

Jesko von Windheim
Entrepreneur in Residence

James J. Gibson
Senior Vice President and
Chief Financial Officer

John C. Crites
Vice President and
Chief Information Officer

Dennis F. Naugle
Vice President,
Facility Strategic Services

Sally S. Johnson
Vice President,
Corporate Affairs

Lisa J. Gilliland
Vice President and Counsel
Legal and Regulatory Affairs

Walter E. Goodlett Jr.
Vice President,
Human Resources

J. Scott Merrell
Counsel to the President
and Corporate Secretary

Board of Governors

RTI's Board of Governors consists of up to 15 governors who represent the University of North Carolina campuses, Duke University, and the business and scientific communities. The Members of the Corporation meet annually as the nonprofit equivalent of stockholders. The Members represent Duke University and the University of North Carolina.

Chairman

Earl Johnson Jr.
Chairman
Southern Industrial Constructors, Inc.

Board of Governors

Gretchen M. Bataille
Senior Vice President for Academic Affairs
UNC–Office of the President

Thomas F. Darden
Chief Executive Officer
Cherokee Investment Partners, LLC

John G. Gilligan
Vice Chancellor for Research and Graduate Studies
North Carolina State University

Victoria Franchetti Haynes
President and CEO
RTI International

Peter M. Lange
Provost
Duke University

William F. Little
Retired

Carolyn W. Meyers
Provost and Vice Chancellor for Academic Affairs
NC A&T State University

William M. Moore Jr.
Partner
Franklin Street Partners

Paul J. Rizzo
Chairman of the Board and Partner
Franklin Street Partners, Inc.

Peter M. Scott III
President and CEO
Progress Energy Service Co., LLC

Robert N. Shelton
Executive Vice Chancellor and Provost
University of North Carolina at Chapel Hill

James N. Siedow
Vice Provost for Research
Duke University

Phail Wynn Jr.
President
Durham Technical Community College

Members of the Corporation

Daniel T. Blue Jr.
Representative of the Board
Duke University

Richard H. Brodhead
President
Duke University

Molly Corbett Broad
President
The University of North Carolina

J. Bradley Wilson
Chairman of the Board
The University of North Carolina

Patents

RTI was awarded seven patents in fiscal year 2004, bringing our total number of patents to 119. The patents cover a range of disciplines and are indicative of the wealth of RTI's intellectual capital. Patents issued in FY2004 include:

Patent title	Number	Inventor(s)
17Beta-Amino and Hydroxylamino-11Beta-Arylsteroids and Their Derivatives Having Agonist or Antagonist Hormonal Properties	6,620,801	C. Edgar Cook, John A. Kepler, Gary S. Bartley, Rupa S. Shetty
Cascade Cryogenic Thermoelectric Cooler for Cryogenic and Room Temperature Applications	6,662,570	Rama Venkatasubramanian
Androgenic Steroid Compounds and a Method of Making and Using the Same	6,670,352	C. Edgar Cook, John A. Kepler, Yue-Wei Lee, Mansukh C. Wani
Cocaine Receptor Binding Ligands	6,706,880	Frank I. Carroll, Michael J. Kuhar, John W. Boja, Anita H. Lewin, Philip Abraham
Cascade Cryogenic Thermoelectric Cooler for Cryogenic and Room Temperature Applications	6,722,140	Rama Venkatasubramanian
17Beta-Acyl-17Alpha-Propynyl-11Beta-(Cyclic Amino) Aryl Steroids and Their Derivatives Having Antagonist Hormonal Properties	6,740,645	C. Edgar Cook, John A. Kepler, Jill M. O'Reilly
Method for Preparation of Thermally and Mechanically Stable Metal/Porous Substrate Composite Membranes	6,761,929	Ashok S. Damle

About the cover:

Our staff members have expertise in a wide range of disciplines, and they work together to provide solutions for a changing world. Featured on this year's cover are:

Front cover:
top
R. Suresh , Matthew Farrelly, Georgina McAvinchey, Georgiy Bobashev, Brooke Whiteford, Dennis Chao, Sam Field
bottom
Betty Rintoul, Nancy Lenfestey, Godfrey Sikipa, Valerie Brown, Benjamin Petty, Ron Fichtner

Inside front cover:
top
Elaine McQueen, Walter Boyle, Shelley Tyl, Bing Shen, Tracy Clouse, Jennifer Greer
bottom
Cathy Renault, Neeraja Sathe, Lisa Hund, Phillip Graham, Tim Gabel

Back cover:
top
Subhrendu Pattanayak, Samuel Taddesse, Karl Feld, Vickie Wilson, Qing Yao, Mark Pope, Ina Wallace, Bill Schlenger
bottom
Philip Salib, Diana Fishbein, Lora Toy, Jennifer Karnitschnig, Hernan Navarro, Breda Munoz, Robert Ssengonzi, G. Gordon Brown

Inside back cover:
top
Stephanie Hawkins, Jerry Cromwell, Blake Wilson, Weihua Shi, G. Manikumar, May Kuo, Lori Schwarze
bottom
Brian Evans, Teresa Jester, Kathleen Lohr, Rachel Caspar, Purvi Patel, Alton Peters

This annual report was produced by RTI's Office of Communications, Information and Marketing.

RTI Headquarters

Research Triangle Park, NC
3040 Cornwallis Road
Post Office Box 12194
Research Triangle Park, NC
27709-2194
Phone: 919-541-6000
Fax: 919-541-5985
E-mail: listen@rti.org

Regional U.S. Offices

Anniston, AL
Center for Domestic Preparedness
Department of Homeland Security
Building 61
Post Office Box 5100
Anniston, AL 36202
Phone: 256-847-2256
Fax: 256-847-2020
E-mail: tmoore@rti.org

Atlanta, GA
Atlanta Koger Center
Oxford Building, Suite 119
2951 Flowers Road South
Atlanta, GA 30341-5533
Phone: 770-234-5021
Fax: 770-234-5030
E-mail: hetland@rti.org

Chicago, IL
203 North Wabash, Suite 1900
Chicago, IL 60601
Phone: 312-456-5240
Fax: 312-456-5250
E-mail: jloft@rti.org

Cocoa Beach, FL
3000 North Atlantic Avenue,
Suite 108
Cocoa Beach, FL 32931-5029
Phone: 321-799-1607
Fax: 321-799-0948
E-mail: jenr@rti.org

Hampton, VA
One Enterprise Parkway, Suite 310
Hampton, VA 23666-5845
Phone: 757-827-1160
Fax: 757-827-3273
E-mail: lmp@rti.org

Rockville, MD
6110 Executive Boulevard,
Suite 902
Rockville, MD 20852-3907
Phone: 301-230-4640
Fax: 301-230-4647
E-mail: rwebb@rti.org

Waltham, MA
411 Waverley Oaks Road, Suite 330
Waltham, MA 02452-8414
Phone: 781-788-8100, ext. 167
Fax: 781-788-8101
E-mail: ndivito@rti.org

Washington, DC
1615 M Street, NW, Suite 740
Washington, DC 20036-3209
Phone: 202-728-2080
Fax: 202-728-2095
E-mail: joan@rti.org

International Offices

Dubai, United Arab Emirates
Post Office Box 18145
Dubai, United Arab Emirates
Phone: +971-50-655-9521
Fax: +971-4-391-6747
E-mail: rafi@rti.org

Jakarta, Indonesia
Jakarta Stock Exchange Building
Tower 2, Suite 2303
Jl. Jend. Sudirman, Kav. 52-53
Jakarta, Indonesia 12190
Phone: +62-21-515-0010
Fax: +62-21-515-2332
E-mail: rti-indo@indo.net.id

Manchester, United Kingdom
Williams House
Manchester Science Park
Lloyd Street North
Manchester, M15 6SE
United Kingdom
Phone: +44-161-232-3400
Fax: +44-161-232-3409
E-mail: sbeard@rti.org

Pretoria, South Africa
1st Floor, Southern Life Plaza
1059 Schoeman Street, Hatfield
Pretoria, South Africa
Phone: +27-12-342-5318
Fax: +27-12-342-5358
E-mail: ppillay@rti.org.za

San Salvador, El Salvador
Boulevard del Hipodromo Pasaje 10
Casa No. 110, Colonia San Benito
San Salvador, El Salvador
Phone: +503-243-2678/2679
Fax: +503-243-2678/2679
E-mail: amiranda@rti.org

Subsidiaries

Warsaw, Poland
RTI Polska LLC
Bartoszewicza 1A/18 Street
00-337 Warsaw, Poland
Phone: +48-22-827-0444
Fax: +48-22-826-0375
E-mail: rti@rti.pl

RTI INTERNATIONAL | *turning knowledge into practice*

www.rti.org