Q. Your work and that of many of your colleagues focuses on the brain. Is neuroscience a particular focus of your institute and, if so, why?

A. Neuroscience is a particular focus, and we were very strategic in choosing it. The institute is nimble and innovative and yet relatively small, so we decided to wisely direct its precious resources to an area that holds a great deal of promise for making a significant difference in peoples’ lives. When taken together as a whole, disorders that affect the brain—such as stroke, Alzheimer’s, traumatic brain injury, autism, depression, addiction, and post-traumatic stress disorder—have a greater impact on people throughout the country and even the world than all other types of disorders combined, and that includes cancers and heart disease. Brain disorders have an annual economic impact of a trillion dollars in the U.S. alone.

Moreover, many disorders that affect the brain have long-lasting consequences on individuals’ lives, on the lives of their families and caregivers, and on their communities. Brain disorders often disenfranchise people from many of the daily activities we take for granted. Intellectual disabilities, traumatic brain injuries, substance abuse, psychiatric disorders, and stroke can all rob people in many ways of their opportunities to be fully engaged members of society. Thus, the

Why Support Medical Research?

Michael J. Friedlander, Ph.D., founding executive director of the Virginia Tech Carilion Research Institute, talks about the institute’s pursuit of breakthroughs in medical research and the role of philanthropy in enabling those discoveries.

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The Virginia Tech Carilion Research Institute integrates the biomedical, behavioral, and computational sciences to develop new approaches to major diseases and disorders throughout the human lifespan. The Institute’s researchers transcend conventional disciplinary boundaries as they invent new strategies for preventing, diagnosing, and treating such challenges as:

- addiction and substance abuse
- autism spectrum disorders
- cancer
- cerebral palsy
- depression
- epilepsy and seizure disorders
- heart disorders
- infectious diseases
- neuropsychiatric disorders
- post-traumatic stress disorder
- stroke
- traumatic brain injury

To learn about opportunities to support these initiatives, contact L. Garrett Weddle at gweddle@vtc.vt.edu or 540-320-2243.
chance to change the trajectory of these outcomes is an opportunity to make major contributions.

Neuroscience is poised to make truly dramatic, even paradigm-shifting, advancements. To conduct the innovative research that’s needed to make such breakthroughs, the institute’s scientists transcend conventional disciplinary boundaries and use the most advanced technologies available. And when those technologies aren’t advanced enough, they invent new ones.

In just two years, the institute has already built a world-class, leading-edge brain research program. And we will continue to grow the program, attracting leading scientists from all over the world and making Roanoke an epicenter for this work.

Q. What are some exciting initiatives under way at your institute?

A. The Institute is quickly becoming the hub for interactive functional brain imaging around the world. Our two magnetic resonance imaging scanners in Roanoke connect not only with our third scanner in Blacksburg, but also with scanners at collaborative sites across the United States and in Europe and Asia. Through this network and our newly launched Roanoke Brain Study, our scientists are providing new insights into the brain.

Our researchers are also inventing new technologies for treating—without surgery—brain disorders such as intractable epilepsy and Parkinson’s disease. They’re developing promising new approaches to enhance working memory and to control the cravings associated with addiction. They’re developing innovative therapies to give children the healthy start they deserve. And that’s just in the area of brain science. We focus on other areas as well, from cancer to cardiac rehabilitation to infectious diseases.

Q. In just two years you’ve assembled some pretty impressive research talent in Roanoke. What attracted you to Virginia Tech, and how have you been able to recruit such top scientists?

A. Virginia Tech already has strengths in many areas of importance to biomedical and health science researchers, including bioengineering, computer science, informatics, psychology, mathematics, and the life sciences. I recognized an opportunity to build on those strengths and to avoid siloed, conventional approaches. Moreover, the university has a tradition of excellence and achievement in discovery, a successful record of transcending disciplinary boundaries in order to innovate, and a culture of service for the betterment of mankind. Likewise, Carilion Clinic is a forward-looking and innovative health system with terrific doctors and health care professional teams. And both institutions—Virginia Tech and Carilion—have strong and visionary leadership.

The researchers we’ve recruited all place the same value on collaboration and innovation. We’re not interested in science as usual. Our state-of-the-art facility, the opportunity to be part of something new and innovative in biomedical research, and the chance to be actively involved with a new medical school with a strong emphasis on research have all been strong draws. And when you add to that the community’s welcoming nature and the area’s natural beauty, you’re able to bring top talent to Roanoke from leading medical centers and universities in major cities.

Q. Research is largely funded through grants that faculty members are able to attract, but there is also a role for philanthropy in helping to fuel discoveries. Why is private giving so critical to your success?

A. Philanthropy provides valuable seed money for ideas that are promising, yet too new to attract federal funding. In today’s highly competitive grant world, you need to have already developed your proof of principle and collected key data before you can successfully compete for a grant to carry the work forward. Private gifts allow our scientists the flexibility of funding they need to quickly bring their expertise and ingenuity to full bear on health problems. Some of the most innovative work of our research teams—work that now receives strong grant support from federal agencies such as the National Institutes of Health and the Department of Defense—began with seed investments from private philanthropy. Highly innovative research on autism, brain injuries, and child development and neurorehabilitation was jumpstarted by philanthropic support and can now continue with substantial grant funding. But the next big idea will also require philanthropic support.

There’s also the ongoing battle for faculty retention. It’s just like in professional sports: We’ve brought some of the world’s best scientists to our institute, so it’s no surprise that other institutions are trying to woo them. Not a month passes without a leading medical center or university or state agency trying to recruit our senior scientists with such enticements as endowments, professorships aren’t about money in a faculty member’s pocket; they’re about the resources to do the research. They create flexibility and can free up a faculty member’s valuable time. Rather than being mired in writing grant proposals, the researchers can do the science, make their discoveries, and translate their work into meaningful contributions to help patients and families. And they can do it all sooner rather than later.