lecture for a distinguished scholar-physician in neuroimmunology. Selma also recently made a generous gift to provide salary support for a full-time nurse in the department's multiple sclerosis clinic.

"Mrs. Bornstein understands the critical role of philanthropy and our ongoing needs in teaching, research, and aspects of patient care that are not reimbursed well," says Gregory Holmes. M.D., a professor of neurology and of pediatrics who was chair of neurology for 10 years. "We've come a long way in the field of neurology, thanks in part to scientists like Murray Bornstein, but there are still tremendous challenges in addressing the range of neurological disorders that affect adults and children."

"It means so much to be able to carry on my husband's commitment to science and learning by giving to the Department of Neurology," says Selma. "Its faculty and students embody many of the characteristics that made Murray a great scientist, doctor, and human being."

Seed funding aims to improve prostate cancer diagnoses

By Jennifer Durgin

For men with prostate cancer, getting an accurate diagnosis can mean the difference between having their prostate removed and choosing a less aggressive treatment option. But often it's difficult to know just how serious a particular prostate cancer is because biopsies can be misleading, suggesting that a cancer is more or less aggressive than it really is.

"In an estimated 30-to-60% of cases, there is a lack of agreement between the cancer grade identified through biopsy and that found in the prostate once it is removed following surgery," explains Ryan Halter, Ph.D., a biomedical engineer at Dartmouth's Thayer School and an adjunct assistant professor of surgery at Geisel. "Sometimes the prediction is right on. Sometimes it's not." Given that prostate cancer is the most common cancer in men, with an estimated 240,000 Americans diagnosed in 2012, this is a big problem.

Halter is working to improve the accuracy of prostate cancer diagnoses, thanks in part to two recent grants from the New Hampshire Prostate Cancer Coalition (NHPCC). The Coalition works with hospitals, doctors, lawmakers, and New Hampshire residents to educate men and their families about prostate cancer, to encourage informed decision-making, and, ultimately, to reduce prostate cancer deaths in the state.

"The NHPCC grants have enabled me to try some new things that I wouldn't have been able to try with other, more restrictive funding sources," says Halter.

Halter is using a novel approach that combines routine ultrasound imaging with electrical impedance tomography (EIT). EIT imaging works by measuring the different electrical properties of normal and cancerous tissues and creating a tissue map based on that data.

Halter is working to improve prostate cancer diagnoses, thanks in part to grants from the New Hampshire Prostate Cancer Coalition.

"The idea is to put electrical property images on top of the ultrasound images and hopefully provide better targeting for biopsies," explains Halter. That, in turn, should lead to more accurate diagnoses.

Halter's initial data—collected at DHMC from participating patients during otherwise routine prostate ultrasounds and biopsies—are promising. Although Halter and his collaborators have not yet produced images from their most recent prototype, they have been able to correlate the electrical properties of certain tissue regions in a prostate with the microscopic analysis of tissue samples gathered from that prostate through biopsy.

"We still have more technology development and computation to do in order to develop the images," says Halter. But he's cautiously optimistic that the data he's gathered, with support from the NHPCC, will help secure federal funding for further research and ultimately improve the accuracy of prostate cancer diagnoses for men in New Hampshire—and nationwide.

MARK WASHBURN

Ryan Halter is developing a new way to image the prostate.