85 percent of research grant proposals submitted are rejected.

Seed Funds Spur Innovation

In 1973, Leonard Tow, PhD, launched Century Communications Corp with a $22,000 investment. Twenty-five years later, he was chair, CEO, and CFO of the fifth largest cable company in the U.S., with a spin-off cellular phone company. “I’m a big believer in leverage,” says Tow, who joined the Columbia Mailman School Board of Overseers in 2012.

“It’s quite amazing what small commitments of confidence in an individual can do.”

That principle undergirds a series of awards made by Tow’s eponymous family foundation to propel research by early-career investigators at the Columbia Mailman School. “It gives us better returns for our investment,” says Tow, “and it gives our scholars an opportunity to demonstrate their capacity to achieve and develop their ideas.”

Consider, for example, the story of Yuanjia Wang, PhD, professor of Biostatistics, one of four professors at the School awarded a three-year, $75,000 Tow Faculty Leadership Scholars grant in 2015. A budding expert in the identification of genomic, behavioral, clinical, and environmental features of neuropsychiatric conditions—depression, Parkinson’s disease, and the like—Wang was determined to redeploy her analytical expertise to use machine learning to mine prognostic insights from electronic health records.

The National Institutes of Health (NIH) has lost more than 20 percent of its purchasing power. Innovative ventures like Wang’s can be particularly risky, due to the increasingly heightened competition for those limited funds, says F. DuBois Bowman, the former chair and Cynthia and Robert Citrone-Roslyn and Leslie Goldstein Professor of Biostatistics. “I see a trend toward a more
Health services research receives only 1/20th of science funding. The National Institutes of Health lost more than 20 percent of its purchasing power from 2003-2012.

Conservative, incremental science,” says Bowman, who regularly reviews grant proposals for the NIH. “People want to write the safe grant—the one they know will work and that they can convince reviewers will work—rather than the really ambitious one.”

Electronic health records are inherently messy—unlike the participants in clinical trials, real-world patients visit their clinicians on a random schedule determined by the emergence of new symptoms. Doctors, too, bring idiosyncracies to the equation. “That’s where we come in,” says Wang, “with the statistical thinking to account for those biases.”

To lay the groundwork for a successful R01 application to the National Institute of General Medical Sciences (NIGMS), Wang spent two years acquiring new skills and running pilot studies. This year, NIGMS awarded her team $1.3 million to fully develop their vision, with Wang as primary investigator. She credits the Tow Foundation with the particularly competitive 9th percentile score her proposal received. “Without that funding,” she says, “I wouldn’t have had the time or resources to travel to conferences, hire students to work with our clinical data warehouse, or pay for the high-performance computing time required for our pilot studies.”