Striving for thriving

Ohio State's many bright thinkers, including these, maintain a constant focus on improving lives.

Story by Jenny Applegate and Ross Bishoff | Illustration by Joseph Carrington

THE WORD "INNOVATION" gets tossed around a lot, but across Ohio State, Buckeyes are at work making it real. For doctors helping patients live longer and engineers making tech function better, innovation isn't the result of happy accidents. It comes from inspired, thoroughly examined ideas, and turning those ideas into action takes dedicated work day in and day out. "I innovate because I want my career to be more than words on paper or plaques on the wall," says Dr. Melissa Bailey, a professor of optometry and two-time honoree at Ohio State's Research and Innovation Showcase. "Innovation is translational research that has impact. In my work, I want to improve the lives of eye doctors and their patients." Here are 10 of the hardworking professors, researchers and health care professionals whom we're proud to call true Buckeye innovators.

1 MELISSA BAILEY '01 MS, '01 OPT, '04 PHD: Ohio State's 2022 Innovator of the Year has created an eye exam app that determines prescriptions, a boon for people who are more challenging to examine, such as kids with autism, and those in places that lack eye doctors. She also developed a new type of soft bifocal contact lens.

2 V.M. "BALA" BALASUBRAMANIAM '93 PHD: With his team of scientists and engineers from academia and industry, the food engineering professor developed a process to preserve drinks and liquid foods with wholesome ingredients instead of artificial preservatives. The technology relies more on pressure than heat, and the result is a healthier option for consumers. His team took on processing of dry food, too, creating tech to reduce chemical use.

3 TANYA BERGER-WOLF: The computer science and engineering professor turned a groundbreaking project to identify zebras in Africa into a new field of study that can provide data to drive conservation efforts. Imageomics uses machine learning to analyze photos — from museums, laboratories, trail cameras, social media and other sources — and identify individual animals' biological traits.

4 VIMAL SAMUEL BUCK '02: Cyber-hijacking of manufacturing's automated robotics is becoming a crucial concern, especially in sensitive industries such as defense. That's where Vimal comes in. The senior researcher and director of cybersecurity with the Center for Design and Manufacturing Excellence is developing low-cost methods for identifying when robots have been compromised.

5 EILEEN FAULDS '10 MS, '20 PHD: Big advancements in diabetes technologies aren't translating into improved outcomes, a fact Faulds wants to change. The nurse practitioner and assistant professor of nursing is using data from insulin delivery devices and glucose monitoring systems to tailor training and solutions that help patients successfully self-manage their complex conditions.

6 ANGUS FLETCHER: The professor of story science with Ohio State's Project Narrative combines psychology, neuroscience and narrative theory to explore how stories can enhance creativity, empathy, problem-solving and resilience. Those seeking his help: trauma nurses, artificial intelligence experts, business and medical schools, environmental scientists and U.S. special forces.

7 ANDRE PALMER: This College of Engineering associate dean for research is creating a blood substitute to support patients in natural disasters, war zones and other emergencies. His artificial blood replaces lost blood volume for 24 hours, creating a window that can mean the difference between life and death. Other applications include keeping donated organs viable longer for transplantation.

8 DHABALESWAR K. "DK" PANDA: The computer science and engineering professor is an expert in high-performance computing who leads ICICLE, a National Science Foundation-funded institute at Ohio State. There, almost 50 professionals are building infrastructure to help regular Joes — not just tech experts — tap artificial intelligence to make life better.

9 DR. SAKIMA SMITH '12 MPH: Heart disease is the No. 1 killer of cancer survivors, a result of their treatment years earlier. To protect patients, the associate professor of cardiovascular medicine is testing heart-protective medications and developing post-treatment monitoring.

10 STEPHANIE STOCKAR '12 MS, '13 PHD: The assistant professor of mechanical and aerospace engineering studies ways to make autonomous vehicles, smart homes and other nonlinear dynamical systems more efficient. One current focus: the ARPA-E NEXTCAR program, which aims to improve energy efficiency in next-generation vehicles by 30%.