GRAND CHALLENGES

UNIVERSITY OF LOUISVILLE
How will disruptive technology and new ideas shape our future economy? How will we create equity and empower marginalized members of our communities? How will we ensure people live not just longer lives, but healthier, more productive ones? These are the Grand Challenges of our time — ones that will impact the human condition for generations to come.

As a top-tier research university engaged in its community, we at the University of Louisville are uniquely positioned to take on these challenges through our research and scholarship. Here, we have cultivated a vital collection of perspectives and knowledge to help our communities think differently and define what's possible.

The university has chosen to concentrate its research and scholarship efforts behind three Grand Challenges, knowing the solutions we find will make a difference and create a thriving future for Louisville, for Kentucky and for the world.
WHAT ARE GRAND CHALLENGES?

To us, Grand Challenges are big, global problems we, the University of Louisville community, can help solve through multi-disciplinary research and scholarship. These Grand Challenges:

• are broad areas with countless lines of inquiry;
• can be positively influenced through multidisciplinary solutions;
• build on UofL’s strong existing expertise and infrastructure;
• and will differentiate the UofL as a leader in global innovation and change.

UofL is ready to take on these challenges. We are equipped with significant infrastructure, by way of equipment, facilities and lab space, and we are rich with smart, capable people passionate about solving these problems.
UofL has chosen to tackle the following themes for our Grand Challenges:

**EMPOWERING OUR COMMUNITIES.**

**ADVANCING OUR HEALTH.**

**ENGINEERING OUR FUTURE ECONOMY.**
UofL will empower communities — promoting equity, eliminating disparities and strengthening the ability of all individuals and communities to achieve well-being and prosperity. Our research will focus on improving educational attainment, preventing violence and trauma, as well as confronting inequities to reduce social, educational, economic and health disparities. We will help create communities where everyone has a voice, a choice and the opportunity to thrive.
A UofL research project uses robots and virtual reality to help kids with autism practice the learning and social skills they need to succeed in group learning settings and real classrooms.

In the “Empowering our communities” challenge, our research priorities will include:

• improving educational attainment;

• preventing violence and trauma, and;

• confronting inequities to reduce social, educational, economic and health disparities.
UofL will advance human health, leading a transformative shift in how we understand, promote and recover wellbeing through all stages of life. Our research will focus on revealing and decoding the environmental factors that promote good health, leveraging the power of our immune systems, and preventing disease, rather than simply treating it. *We will help people live lives that are not just longer, but healthier and more resilient.*
The UofL Green Heart Project, part of the Christina Lee Brown Envirome Institute, is planting trees and shrubs all over Louisville to help make our air cleaner for everyone. This impacts many areas of our health, from our breathing to our hearts.

In the “Advancing our health” challenge, our research priorities will include:

• revealing, decoding and influencing the social and environmental factors that promote good health;
• leveraging the power of our immune systems; and
• preventing disease and disability, rather than simply treating it.
Engineering our Future Economy.

UofL will engineer a future economy made possible by cutting-edge technology and ideas in the world of work. Our research will focus on developing and harnessing technological advancements for the digital and robotic transformation of the workforce, advances in manufacturing and the development of materials and processes for a new energy economy. We will drive the evolution of our economy, designing a future of unparalleled opportunity and limitless possibility.
In the “Engineering our future economy” challenge, our research priorities will include:

- developing and harnessing technological advancements for the digital and robotic transformation of the workforce;

- advances in manufacturing and the development of materials; and

- processes for a new energy economy.

Brad Shuck (LEFT) of the College of Education and Human Development, is helping shape the future of work through his software technology, which ensures employees are more engaged, leading to more productivity.
These Grand Challenges impact our city, our country and our world — and they will for years to come. Together, we will drive this forward movement in life and work and help expand what is considered possible for all of humankind.

Are you ready to take the challenge?

Learn more at
uofl.me/grandchallenges.