Signature Research Strengths at Western

By defining Western University's areas of established and emerging research strength, we recognize the significant success of our researchers in building strong collaborative initiatives with existing and broadly acknowledged international reputations. These areas have achieved a critical mass of personnel, funding, infrastructure and training opportunities, and established a particularly strong record of innovation. Western's signature research areas have been defined as:

Neuroscience/Brain and Mind

- Internationally recognized research in a variety of disciplinary areas pivotal to understanding the brain, its function and health, including links to cell biology, brain imaging and psychology
- Home to the *Brain & Mind Institute* and *Canada Excellence Research Chair*, Adrian Owen

Imaging

- Acknowledged leadership in the use and development of imaging technologies across the disciplinary spectrum, including sophisticated tools used in medical diagnostics
- Home to the *Biomedical Imaging Research Centre* and the *Centre for Imaging Technology Commercialization*

Materials and Biomaterials

- Broadly recognized leadership in synthesis, characterization and application of materials, including lightweight composite materials
- Home to the *Centre for Advanced Materials and Biomaterials*, *Surface Science Western*, *Fraunhofer Project Centre @ Western* and the *LANXESS Global Butyl Research Centre*

Wind Engineering and Natural Disaster Mitigation

- Global leadership in wind tunnel testing of some of the world's most recognizable buildings, bridges and structures
- Related work in hazard assessment, simulated structural testing and policy development to mitigate the effects of natural disasters

Environmental Sustainability and Green Energy

- State-of-the-art climate change research facilities and leading work in alternative energy and biomass conversion to bio-oil
- Home to the *Biotron Experimental Climate Change Research Facility*, *Ontario Bioindustrial Innovation Centre* and *ICFAR*

Philosophy of Science

- Leaders in research related to conceptual issues concerning the origins and nature of scientific theories, relations among theories, as well as between theories and the world, and the impact of scientific theories on contemporary society
- Home to the *Rotman Institute of Philosophy*

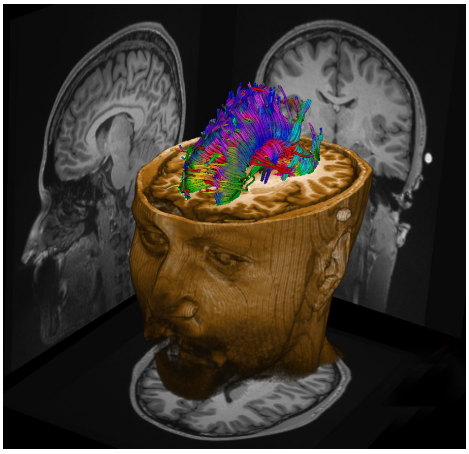
Planetary Science and Exploration

- The *Centre for Planetary Science and Exploration* advances efforts to understand Earth's formation, explore planets and apply technologies and techniques to mining, robotics and healthcare
- Focused on the collection and analysis of extraterrestrial materials, and procurement of specialized equipment that allows for the characterization of materials brought back to Earth

Musculoskeletal Health

- Identified as a rapidly emerging area of research strength, this health science and technology-based cluster builds on multi-faculty excellence in skeletal biology, bioengineering, medical devices and clinical application
- Trans-disciplinary approach to improving understanding of, and developing novel therapies for, debilitating bone and joint disorders, with the goal of maintaining lifelong mobility

For more information, please visit: www.uwo.ca/research



Western's researchers have established an international reputation for leadership in neuroscience and imaging through discoveries, technologies and advancements in healthcare.

Highlights:

- *Canada Excellence Research Chair* Adrian Owen was the first to show some 'vegetative state' patients are able to communicate
- Core biomedical imaging facilities, including one of three global 7T fMRI systems, are among the best in the world
- World's most significant wind research facility cluster, including four wind tunnels
- Strengths in lightweight materials have attracted international R&D centres to London for partnerships
- The $50-million *Bioindustrial Innovation Centre* allows for large-scale biotechnology commercialization

Western Research