

This survey collects data on research and development (R&D) activities at higher education institutions. Please report R&D activities and expenditures for your institution.

Research and Development (R&D)

R&D activity is creative and systematic work undertaken in order to increase the stock of knowledge — including knowledge of humankind, culture, and society — and to devise new applications of available knowledge. R&D covers three activities defined below — basic research, applied research, and experimental development.

- **Basic research** is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.
- **Applied research** is original investigation undertaken in order to acquire new knowledge. It is directed primarily towards a specific, practical aim or objective.
- **Experimental development** is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improve existing products or processes.

Examples

Basic research

A researcher is studying the properties of human blood to determine what affects coagulation.

A researcher is studying the properties of molecules under various heat and cold conditions.

A researcher is investigating the effect of different types of manipulatives on the way first graders learn mathematical strategy by changing manipulatives and then measuring what students have learned through standardized instruments.

Applied research

A researcher is conducting research on how a new chicken pox vaccine affects blood coagulation.

A researcher is investigating the properties of particular substances under various heat and cold conditions with the objective of finding longer-lasting components for highway pavement.

A researcher is studying the implementation of a specific math curriculum to determine what teachers needed to know to implement the curriculum successfully.

Experimental development

A researcher is conducting clinical trials to test a newly developed chicken pox vaccine for young children.

A researcher is working with state transportation officials to conduct tests of a newly developed highway pavement under various types of heat and cold conditions.

A researcher is developing and testing software and support tools, based on fieldwork, to improve mathematics cognition for student special education.

Please contact GCC at 513-556-4815 with any questions.