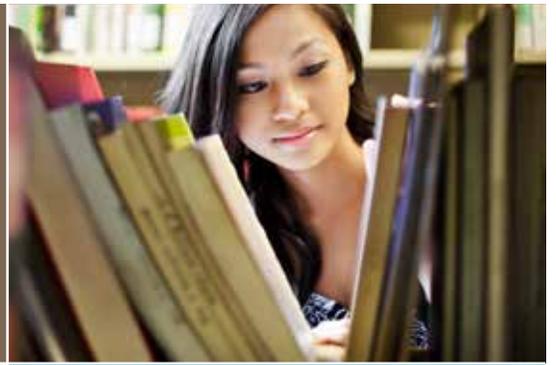
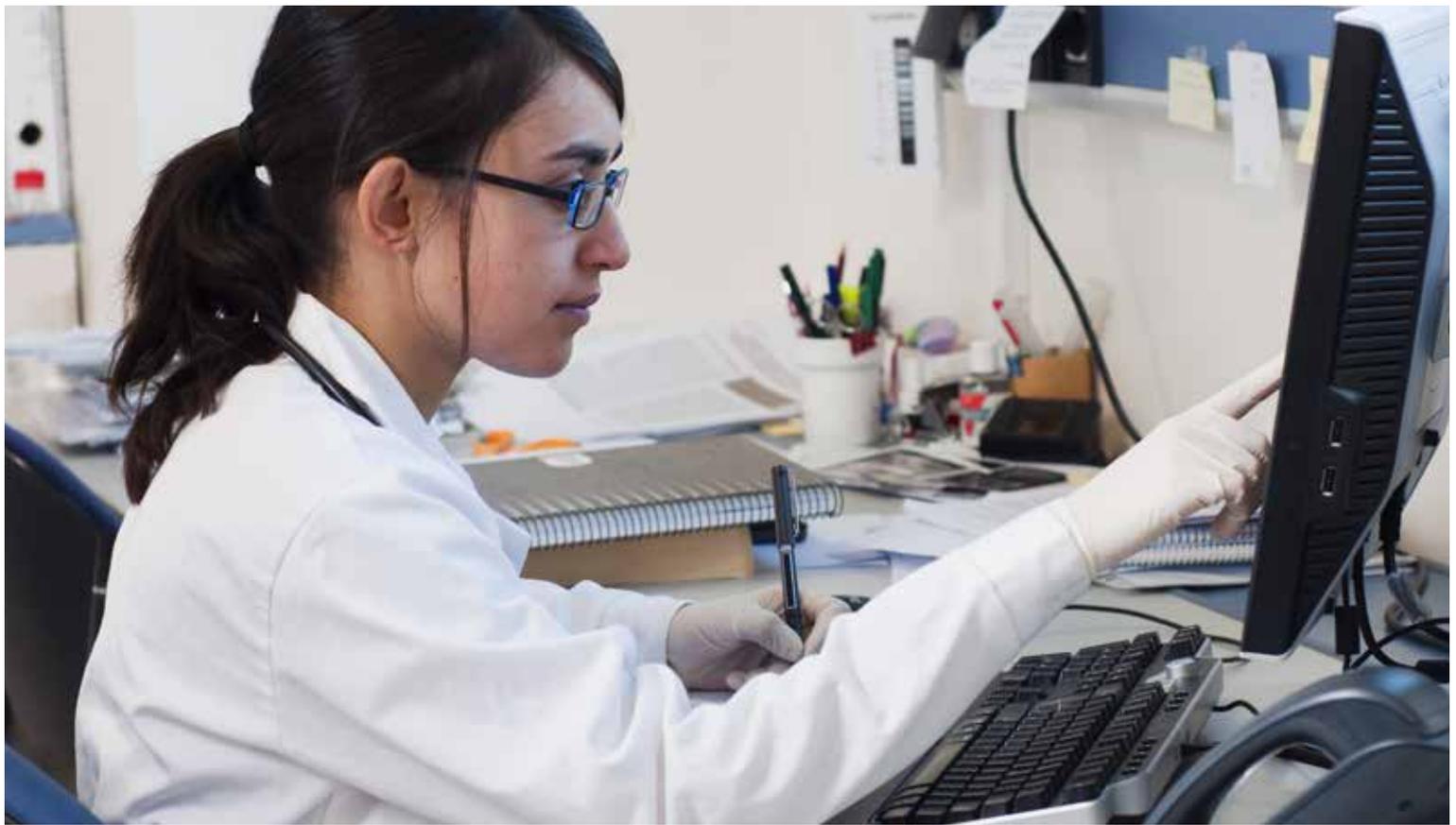


why fund



GRADUATE RESEARCH?





Graduate Students; a Profitable Option for Industrial Research

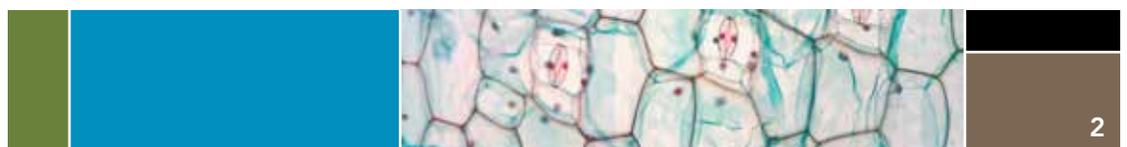
Although funding graduate research will give you a warm and fuzzy feeling, that's not why your company should do it. Funding graduate student research gives you a fresh new perspective on your R&D needs. It provides a team of faculty advisors that help manage the research and lend their expertise to the problem. Lastly, funding graduate research builds a pipeline of new talent for your organization in a specific technology that your firm is developing.

Not all research projects either can or should be done at a university. But many companies find that university research can make good sense.

Reasons to think seriously about sponsoring some research at a university are as follows:

- The cost typically is lower, compared to hiring someone to do the same work at your facility.
- Input from the student's faculty advisor and committee members become contributed to the project.
- The university staff and graduate students can be an excellent source of "out-of-the-box" ideas that you may be able to convert into competitive advantages.

Graduate students who are developing the new technology can later be hired by the company. By that time people at the company already know the person well. They are in a good position to weigh the benefits of hiring someone who already is an expert in a specific area that may be critical to their future.





Projects that tend to work well

Some types of industrially sponsored research projects that have worked especially well in the past in a university setting include the following:

- Projects aimed at understanding the mechanisms underlying a technology that is of particular interest to a company or a group of companies.
- Pre-competitive research. This included projects that can later be extended by a company in ways that produce competitive advantages.
- Collaborative research that brings together the needs of two or more entities. For example, it may involve a paper company, a supplier of papermaking equipment, and a supplier of papermaking chemicals.
- Projects that can lead to patent licensing arrangements. In this regard, ideas that are invented exclusively by students and faculty at a University would usually remain the intellectual property of the University. Depending on what has been agreed, sponsors of the work may get a right to an exclusive license of the technology.

Projects that don't lend themselves well to a university setting

Although many of the research needs of a company could be achieved at a university, there are a few types of research that may be best done "in-house." For example, "Company A" is unlikely to fund graduate student research if their aim is to develop unpatented trade secrets that remain hidden from "Company B." The reason has little to do with the ability or lack of ability of students and faculty to keep secrets. Rather, by law, significant results from university projects carried out by students must be made available for publication. (Note that reports can be written in a way that also respects the secrecy of confidential information obtained from outside of the university.)





Motivating factors for research

Over time, two factors have tended to dominate the nature of research work carried out in graduate level research:

1. Research interests; interesting problems for faculty and graduate students
2. What gets funded

The dynamic tension between ideas and money creates a rich environment for innovation. Purely pragmatic studies fail to generate interest at the university level, since they may not provide enough challenge to the student. On the other hand, ideas of no potential economic merit may fail to attract grant or fellowship support. Surviving projects (when the process works) tend to be those which have the potential to be both fun and profitable.



Schools to Consider

Aalto University, Department of Forest Products Technology
Åbo Akademi University, Chemical Engineering
Ecole Polytechnique
Federal University of Viçosa, Forestry Engineering
Georgia Institute of Technology, Institute of Paper Science and Technology
Graz University of Technology, Technical Chemistry, Institute for Paper, Pulp and Fibre Technology
Grenoble INP-Pagora, Grenoble Institute of Technology
Lakehead University, Chemical Engineering
Miami University, Chemical and Paper Engineering
North Carolina State University, Forest Biomaterials
SUNY-ESF, Paper and Bioprocess Engineering
University of British Columbia, Pulp and Paper Center
University of Maine
University of Pardubice, Department of Wood, Pulp and Paper
University of Quebec in Trois-Rivières, Chemical Engineering
University of Toronto, Chemical Engineering and Applied Chemistry, Pulp & Paper Centre
Western Michigan University, Paper and Chemical Engineering



Research Topics to Consider



- Bioactive papers
- Biocomposites
- Biofuels
- Biomaterials
- Biopolymers
- Bioproducts
- Biorefineries
- Biotechnology
- Chemical Engineering of Cellulosic Materials
- Coating Technology
- Colloids and Surfaces
- Energy and Chemical Recovery
- Environmental Technologies
- Fluid Mechanics in Pulp and Paper
- Functional Coatings
- Green Chemistry
- Lignin Characterization and Utilization
- Materials Science of Paper
- Nanocellulose
- Nanotechnology
- Nonwovens
- Packaging Science
- Paper and Fiber Physics
- Paper Science and Engineering
- Paperboard
- Printed Electronics
- Process Simulation
- Renewable Materials Engineering
- Renewable Materials Engineering
- Sustainable Engineering Management
- Tissue and Towel
- Wood Science

For more information, or to help you match your research needs with a University please contact David Bell, Vice President of Corporate Relations at TAPPI. dbell@tappi.org, +1 770-209-7209

Thank you to Martin Hubbe, Professor at NCSU for providing much of the content for this brochure.