NSERC’s Collaborative Research and Development (CRD) Program - an overview

Amit Shukla
Grant Development Officer
Research Partnerships Budget 2003-2004

Total: $131M

Source - NSERC
Research Partnerships Programs:

Objectives

- Build on NSERC’s primary role of supporting research and training
- Link universities to the public and private sectors
- Expose students to challenges and opportunities in industry & government
- Facilitate innovation through flexible and responsive programming
- Stimulate industry investment in research
Collaborative Research and Development Program (CRDs)

- Main vehicle for Canadian firms to work with university researchers
- Focused projects: 6 months to 5 years in duration; most awards are for 2 or 3 years.
- 80% success rate
- Amount may vary from $5K to $5M; average award from NSERC is about $20-$30K/yr
- Program not cash limited at this time
- Program identified as one of top 3 priorities in RPP
CRD – Description

- Significant industrial cash contribution and active involvement of company required
- NSERC levers cash and in-kind contributions; direct project costs shared by the industrial partner(s) and NSERC
- Company contribution eligible for SR&ED tax credits
- All project funds go to university research team
- Apply at any time
CRD – Project Eligibility

Eligible Projects
- At any point in the R&D spectrum
- Well-defined, undertaken by university researchers and their private-sector partners
- Focused with specific short- to medium-term objectives
- Current state of the art research and should advance current knowledge in the area

Ineligible Projects
- Focus on routine application of existing technology or provide routine analysis
- Collect data without interpreting underlying mechanisms or acquisition and maintenance of scientific equipment
- Provide professional practice or consulting services (contract research)
- Set-up and operation of an institute or group of researchers
CRD – Reporting

- CRD projects are monitored closely - annual progress reports, final reports
- NSERC may appoint a scientific liaison officer to assist in the monitoring
- Industrial partner may be asked to provide comments on the progress
- Grantees may propose amendments to the project objectives and milestones, or budget.
- Amounts of second and subsequent installments are contingent on a demonstrated need for NSERC funds
- Next installment not released until the industrial partner has made its current year’s contribution, re-confirmed its commitment to contribute in the next year, and (if requested) evaluated the project’s progress
- Grantees or companies that have failed to provide the requested feedback on projects may be declared ineligible to apply for, or sponsor, new proposals.
CRD - Industrial Partner’s Commitment

- Significant cash contribution
  - Must contribute to the direct project costs in an amount equal to or greater than the amount requested from NSERC.
  - Must be at least one half of the NSERC request
  - Balance can be provided in in-kind contributions to the project.
  - In-kind contribution reflects active involvement of company in all stages of project
- Able and willing to exploit the research results
- Clear benefit to Canada
CRD – Industrial Contribution

- Cash contributed before the proposal is submitted may be used to start the project
  - NSERC will not recognize industrial funds spent more than three months prior to the date of submission.
- NSERC funds cannot be applied to expenses incurred before a project was approved.
- Every effort should be made to exploit the results of NSERC-funded research in Canada
  - Copy of the final agreement must be provided to NSERC for review before funds can be released
  - Consult NSERC's Policy on Intellectual Property
CRD Application Evaluation Process

Dr. Sue Abrams
NRC/PBI
CRD Selection Committee Member
CRD – Review Process

- All proposals undergo peer review.
- Large or complex proposals (requesting $200,000 or more per year) are reviewed by a site visit committee.
- Those requesting $150,000 or more per year from NSERC are reviewed by a selection committee, the Advisory Committee on University-Industry Grants (ACUIG).
- For smaller applications (<$150,000 per year), the program officer makes a recommendation to the director based on comments from peer reviewers.
- Advisory Committee on University-Industry Grants (ACUIG) meets four times a year: March, June, September, and December. Upcoming meetings will be on March 9, June 15, September 21 and December 7.
- Decisions on funding CRD grants are usually made within three to five months of receiving a complete application.
CRD - Application Evaluation Process

- Application developed by partners; submitted by university researcher
- Internal review to ensure documentation complete and necessary information provided
- Peer review either by paper (<$200K/yr from NSERC) or site visit committee
- Possible clarification of issues
- Funding recommendation internal or by advisory committee (>=$150K/yr from NSERC)
- Decision made by NSERC
CRD - Application Evaluation Criteria

- Research project quality and originality
- Expertise of the research team
- Training of highly qualified personnel
- Industrial relevance
- Private sector support
- Benefit to Canada
Reasons for Failure: Negative Decision or Reduced Funding

- Questionable scientific merit: poor originality, technical problems, not research
- Poorly situated within state of the art
- Lack of detail in proposed methodology
- Schedule, scope too ambitious
- Need for confirmation before proceeding with future research
Reasons for Failure: Negative Decision or Reduced Funding (contd.)

- Budget items poorly justified, too high
- Lack of team expertise
- Poor training opportunities
- In-kind not essential to project, overestimated, poorly described
In Kind Contribution and Overhead

Amanda Plante
Grants Officer
In-Kind contribution for CRDs

- Consider levering as high as 2 to 1 on the cash contribution
- Not a ‘matching’ program
- Must be essential to the project and provide real value as an input (no subsequent work, no administration, no review)
- Donation of equipment or material
In-Kind contribution for CRDs

- Provision of services – characterization, prototyping, validation (if iteration included)
- Time of technical staff: name, role, expertise, nature of their contribution to the project (tie to milestones), estimated hours, realistic hourly rate
- In-kind can be “equivalent to cash” e.g internal costs (office space, technicians time)
- May also include out of pocket expenses such as shutdown of production run to test or produce material; hotel accommodation for visiting students; training courses
Letter of Support from Company

- What does the company do (include company profile)
- Motivation for supporting the research
- Is there an existing relationship
- Way in which results will be used or exploited by the company
- Expected benefit for both the company and industry as a whole
- Nature of support being provided (cash and in-kind)
Intellectual Property Policy

- University and/or researcher ownership of IP
- Freedom to publish
- Access to IP through licensing agreement
- Emphasis on Canadian benefits
- Funding conditional on NSERC approval of IP agreement
U of S Overhead Policy
(Effective January 1, 2005)

- Administration of Research Overheads
- Policy for the purpose of outlining the practices governing the calculation and allocation of research overhead recoveries.
  
  http://www.usask.ca/research/policyTBD.shtml

- Standard Overhead Rate and Guideline Schedule
  
Standard Overhead Rates

- **Research Contracts:**
  - Research for the provincial government (all departments)
    - 15% of total direct costs
  - Research with Producer Groups
    - 15% of total direct costs
  - Industry and other Research Contracts
    - 40% of total direct costs
  - Small contracts (less than $5000)
    - 10% administrative fee
Standard Overhead Rates (contd.)

- **Research Grants:**
  - Companies, Industry and Government Departments or Agencies
    - 15% of total direct costs
  - Foundations
    - 10% of total direct costs

- **Exemptions:**
  - Grants valued at $5000 or less – no overhead
  - Graduate student stipends only (based on the Tri-Council salary/stipends)
  - **No overhead is applied to Tri-Council grants – already provided via indirect costs program to U of S**
Grant versus Contract

- Payment is made by the sponsor to the University in advance.
- The investigator has control of the research project or program.
- Publication rights of the investigator are not restricted.
- Ownership of all intellectual property rights is relinquished by the sponsor.
Additional Notes:

- Please contact Research Services when you are negotiating with a sponsor
  - Contract or grant
  - Budget
  - Overhead
  - IP agreement
- GDO can assist you with the application
- Contact ILO regarding technology transfer potential
Finding a Project Partner and Preserving Academic Freedom

Ron Mantyka
Research Development Officer
A Reality Check

Annual Research Budget

$ Cdn

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Research Services – University of Saskatchewan
Identifying Potential Partners

Fundamental Questions

- Is the potential Partner’s corporate culture in alignment with the Universities culture?

- Does “partnership research” fit in the potential Partner’s corporate research strategy?

- Does your research add value to the potential Partner’s business?

- Does the potential Partner have the capacity (financial, technical and authority) required to support your research initiative?
Corporate Culture
Closed Research and Development Paradigm

- Research deemed unimportant to the core business is shelved.
- Research largely done in-house.
- Unlikely Partner... research results often a secondary consideration to marketing.
- Can consume a lot of your time “snooping” at technology.

Henry Chesbrough
Corporate Culture

Closed Research and Development Paradigm

- 3M and Adobe spun off of research developed at Xerox Palo Alto Research Center by employees working on the research deemed unimportant.

- **Result:** A major paradigm change started occurring in the 1990’s.
Corporate Culture

Open Research and Development Paradigm

- Research results traverse the firm’s boundaries.
- Licensed technologies and knowledge transfer occurs in both directions creating a win-win scenario.
“Applying the Best Available Science. Because nutrition science is constantly evolving, we have an obligation to evaluate any major new health learning that applies to our products […] in some cases it will prompt us to make changes”

Growth and Trust PepsiCo 2003 Annual Report
Corporate Culture

Open Research and Development Paradigm

“Through collaborations with universities… [BASF] gets access to new knowledge and new technologies. These elements can be rapidly and efficiently joined up within the Verbund to create innovations that the market wants.”

From BASF Web Site
Corporate Research Strategy
Closed Research and Development Paradigm

“We’ve centralized our research and development [...] so we can put our resources into developing really big ideas”

*Growth and Trust PepsiCo 2003 Annual Report*
“The central, corporate research laboratories [...] are the competency centers”

“Successful research combines market stimuli with scientific discoveries to create innovative products”

From BASF Web Site
Value Creation
Augmenting Partners Core Competencies

Resources
(Patents, Intellectual Property)

Core Competencies

Cost Advantage or Differentiation Strategy

Capabilities
(Ability to utilize resources – i.e. rapid product to market timing)

Value Creation

Michael Porter

Research Services – University of Saskatchewan
“PepsiCo has enlisted the help of renowned experts. We are particularly indebted to Dr. Ken Cooper of the Cooper Aerobics Center, […] to provide] valuable insight and advice on how we can address the issues and opportunities before us.”
"Bundling know-how and resources means that R&D results will become even better. For this reason, about 800 cooperations with innovative companies and universities are an important component in BASF's research strategy - for solutions to complex problems at the highest technological level."
Capacity (Don’t be Afraid to Ask)

- **Financial**
  - What is the level of commitment?
  - Where is the money coming from?
  - Is the financial commitment tied to project success?

- **Technical**
  - Does your potential Partner have the technical competency to assimilate your research results?

- **Authority**
  - Are you dealing with an individual, department, or organizational commitment?

*Don’t underestimate or understate the commitment that is required*
Identifying Potential Partners
Where to Start

- Start by building on prior positive working relationships and networks you have established.
- Start with a number of smaller partner organizations, that have a common interest in your research.
- Start by recognizing progressive companies are “bundling” technologies.
- Start by identifying the research priorities of potential partners.
Contact Information

➢ Amit Shukla – Grant Development Officer
  ➢ Ph – 966-1317
  ➢ Email – amit.shukla@usask.ca

➢ Amanda Plante – Grants Officer
  ➢ Ph – 966-2207
  ➢ Email – amanda.plante@usask.ca

➢ Ron Mantyka – Research Development Officer
  ➢ Ph – 966-1334
  ➢ Email – Ron.Mantyka@usask.ca