

A photograph of three people in a laboratory or workshop setting. A woman on the left, wearing a yellow cardigan and safety glasses, is pointing at a laptop screen. A man in the center, wearing a black hoodie with "RED RIVER COLLEGE POLYTECH" and "INSTRUMENTATION AND CONTROL ENGINEERING TECHNOLOGY" printed on it, is also looking at the screen. A man on the right, wearing a blue denim shirt and safety glasses, is looking on. The background shows various pieces of equipment and cables.

20 Years of Applied Research

RRC Polytech brings industry partners' project ideas to life through our technology, facilities and expertise to drive innovation and economic growth in Manitoba – and beyond.



Solving today's industry problems. Training tomorrow's industry leaders.

RRC Polytech is a Canadian leader in applied research and commercialization

The work of our professional research staff helps form our identity as a polytechnic. Through work-integrated learning, we're inviting our students – the workforces of tomorrow – to help develop solutions that support the local companies that drive Manitoba's economic growth.

RRC Polytech's three Technology Access Centres (TACs) and research facilities are focal points for advancing knowledge, fostering collaboration and accelerating commercialization primarily with Manitoba small- and medium-sized enterprises (SMEs). Our research and innovation are applied – meaning they deliver a measurable return on investment for you and for our economy, through increased productivity, competitiveness, jobs, exports and more.

By demonstrating what is possible, applied research plays a unique role within the innovation ecosystem.



COLLABORATIVE APPROACH

Driven by the needs of industry, we work with them to find solutions for today's challenges – as well as tomorrow's.

We own our intellectual property (IP) but share it freely. We grant commercial rights to support economic development, so IP doesn't impede successful collaboration and commercialization.

We respect the principles of OCAP® (Ownership, Control, Access and Possession) when working with and in First Nations, Inuit and Métis communities.

Our R&D support services are accessible to all entrepreneurs and innovators across Canada as part of our commitment to a more inclusive innovation economy.



3

NSERC-FUNDED TACS

ONE OF CANADA'S TOP

50

RESEARCH COLLEGES

1,000s

OF PARTNERSHIPS
WITH SMES

\$90M+

IN RESEARCH
INFRASTRUCTURE
CAPITAL INVESTMENTS

135

RESEARCHERS
AND MORE THAN

600

STUDENTS
INVOLVED IN APPLIED
RESEARCH ANNUALLY

APPLIED RESEARCH
TRAINING ENABLED
BY RESEARCH
INFRASTRUCTURE
IN MORE THAN

60

courses



Research Partnerships
& Innovation

Driving Applied Research Excellence

Research Partnerships & Innovation (RPI) is your gateway to RRC Polytech's comprehensive array of facilities, Technology Access Centres, research expertise and know-how across a range of disciplines and sectors. We deliver technical services, such as proof-of-concept and technology validation, as well as customized training to organizations and communities.

SPECIALIZATIONS

- Advanced Manufacturing and Mechatronics
- Cleantech with focus on EV and building efficiency
- Health, nutrition and social sciences with focus on culinary research and food innovation
- Early childhood development research
- Digital technologies and enabling adoption

Through our Office of Applied Research Services (OARS), RPI oversees the administration and coordination of all research activities across RRC Polytech. We also support industry partners to access available funding.

PARTNER WITH US

We are always seeking and evaluating new opportunities to collaborate with industry on applied research projects that solve problems, fulfil needs and drive innovation. To learn more, visit rrc.ca/ar.



TACAM provides cost-effective, practical solutions to support the aerospace and manufacturing industries through research and development, technical and business services, training and knowledge dissemination.

AREAS OF EXPERTISE

- Advanced Manufacturing and Materials
- Smart Factory and Learning Factory
- Manufacturing Automation and Robotics
- Rapid Prototyping Technologies
- Non-destructive Inspection
- Physical and Computer-based Simulations

RESEARCH FACILITIES

SMART FACTORY

Evaluates emerging technologies such as advanced robotics, factory automation and simulation, additive manufacturing, reverse engineering and industrial network technologies.

MODEL FACTORY MACHINE SHOP

Saves time and money on design, prototyping, inspection, machining and additive manufacturing.

CENTRE FOR AEROSPACE TECHNOLOGY & TRAINING

Explores or investigates new joining and bonding processes and materials to support partners before they make major capital investments or interrupt their existing product flow.

COMPOSITES MODEL FACTORY

Manufactures and assembles composite aerospace components, and provides training in our fully equipped facility.

CENTRE FOR NON-DESTRUCTIVE INSPECTION

Inspects new and existing composite products using the Laser UT® System.

104

INDUSTRY PARTNERS
includes 77 SMEs.

170

INDUSTRY PROJECTS
developed and conducted
for clients.

\$4.8M

REVENUE
received by TACAM for
project operations.

\$37M

CAPITAL ACQUISITION
of additional facilities
and equipment available
to industry.

All figures for
April 2019-May 2024.



200
INDUSTRY PARTNERS

120
TOTAL PROJECTS

\$6M
RESEARCH REVENUE

80
RESEARCH STUDENTS

Numbers gathered
since April 2015.



BETAC supports the building industry by helping clients address the challenges of designing and constructing durable, energy-efficient building envelopes, components and assembly in an environment with extreme conditions.

RESEARCH TECHNOLOGY

The Centre for Applied Research in Sustainable Infrastructure (CARSI) at RRC Polytech is the primary location where BETAC develops its award-winning applied research activities.

ENVIRONMENTAL CHAMBER

BETAC has access to two, side-by-side chambers to evaluate thermal performance of windows, doors and mock-up wall systems.

AIR, WATER AND STRUCTURAL CHAMBER

BETAC's air, water and structural chamber helps stimulate innovation in the design and construction of building envelopes.

WHOLE BUILDING AIRTIGHTNESS TESTING

BETAC's whole building airtightness testing provides a quantified result to help clients determine the cost/benefits of a retrofit.

PORTABLE TECHNOLOGY

We can bring our portable technology and flexible training options directly to clients.

AREAS OF EXPERTISE

BUILDING MATERIALS AND ASSEMBLY TESTING

Identifying new techniques and testing full assemblies to save resources and money.

WHOLE BUILDING AND SUBSYSTEMS TESTING AND COMMISSIONING

Testing concepts before implementation to enhance environmental sustainability.

BUILDING PERFORMANCE BENCHMARKING AND MONITORING

Helping clients to stay up-to-date with the industry's best practices.

SUSTAINABLE CONSTRUCTION

Research and development including student-led projects focusing on people, processes, materials and technology



PRK explores creative solutions that support food processors and food service providers through research and development, technical services and training. PRK brings together a unique blend of food science and culinary arts to develop solutions for our clients.

RESEARCH SERVICES

RESEARCH AND DEVELOPMENT

- Rapid prototyping
- Ingredient applications
- Consumer research trials
- Food process improvements

TECHNICAL AND BUSINESS SERVICES

- Recipe development
- Food photography
- Trade show support
- Access to resources and funding

TRAINING AND KNOWLEDGE DIFFUSION

- Customized training
- Safety and processing
- Networking events
- Corporate on-site and in-house training

A RECIPE FOR SUCCESS

CULINARY ARTS

Chefs and culinary students apply their expertise in creating great tasting food to research.

FOOD SCIENCE

Food scientists' knowledge of food systems, scientific methods and food safety elevates product creation and processing.

MARKETING AND BUSINESS

Consumer testing and market trends and knowledge help shape new product ideas and outcomes.

STUDENT WORKFORCE

Our network of students supports cost-effective food research and prepares a new generation of food developers.

160

PARTNERS

have partnered with the PRK.

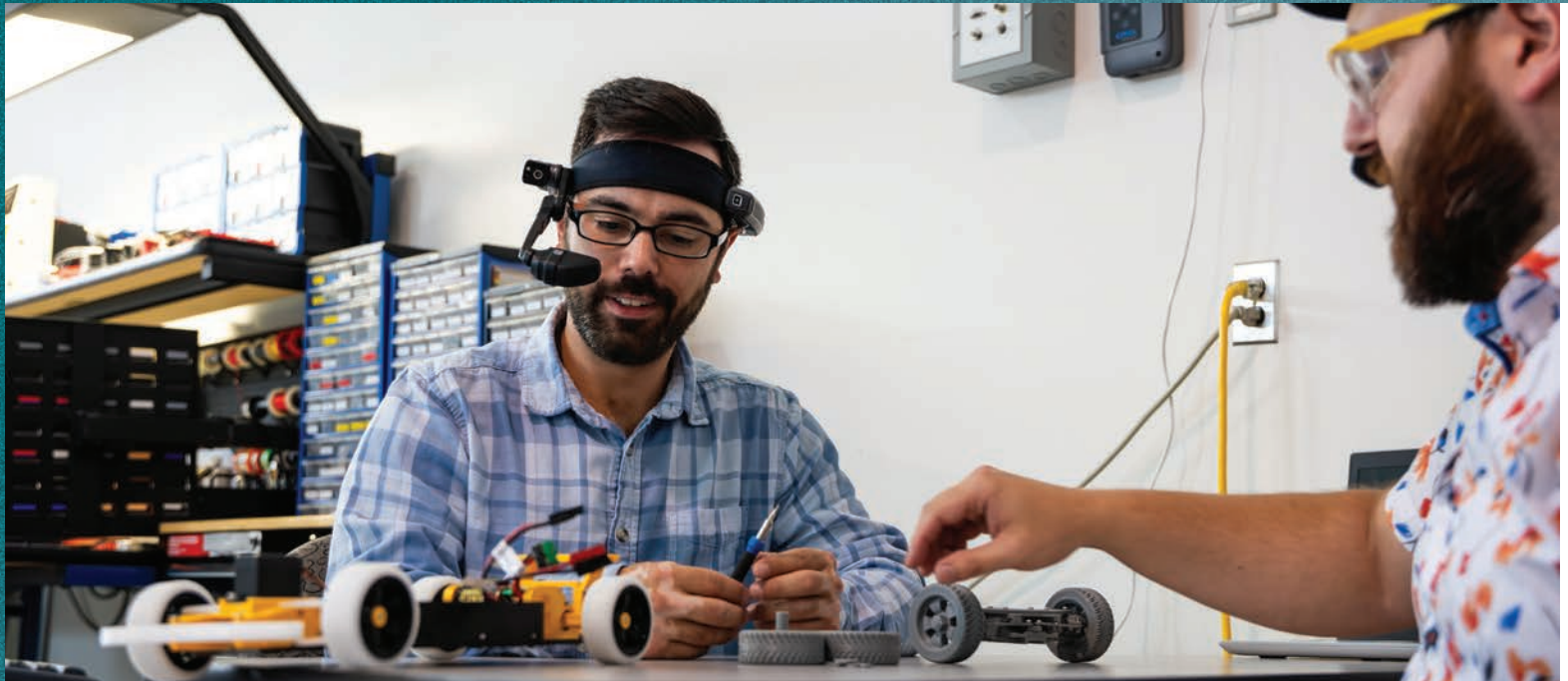
500

PRODUCT IDEAS

created, developed and conducted for clients.

*All figures for 2013 to 2024





VTEC

Vehicle Technology & Energy Centre

Driving innovation in Manitoba's vehicle manufacturing industry.

Manitoba's presence as a major transportation hub is growing, and the Vehicle Technology & Energy Centre (VTEC) is fuelling that growth by supporting the development of new on- and off-highway vehicle technologies.

VTEC puts RRC Polytech researchers, staff, students and facilities to work for national and international manufacturers pursuing innovation in vehicle performance and related technology development.

Clients stay in the driver's seat while we accelerate their projects with:

Applied Research

Testing, evaluating, and demonstrating current and emerging vehicle technologies.

Our areas of focus include alternative fuels (including electric vehicles and hydrogen fuel cells), improving fleets' fuel efficiency, evaluating and demonstrating emerging technologies, and emphasizing the effects of extreme weather conditions.

Technical Services

Leveraging our expertise to test and evaluate components, systems and vehicles.

Training

Knowledge diffusion, reskilling and upskilling today's as well as tomorrow's workforce.

WE'RE INNOVATION EXPERTS IN

- Cold-weather/climatic testing
- Vehicle-related electronics and software
- Energy conservation and alternatives
- Light weighting/materials
- Technology integration
- Emissions testing

MOTIVELAB™

All-Weather Climatic Chamber and Chassis Dynamometer Test Facility

Our 7,000 sq.-ft. research facility supporting Manitoba's heavy vehicle sector is unique in Western Canada.

MotiveLab™ provides access to appropriate and/or comprehensive domestic test facilities. This addresses the considerable pressure from regulatory bodies for emissions control and fuel efficiencies, and promotes the development of highly qualified and skilled personnel for the workforce.

Discover new possibilities across various industries with RRC Polytech's Motivelab™'s climatic chamber. It offers unparalleled value and precision, whether you're seeking climatic validation or testing for your product, component or innovative concept.

CAPABILITIES

- Climatic chamber with an operating temperature capability of between -40°C and +50°C, independent of outside ambient temperature, while under full-load conditions.
- MotiveLab™ can accommodate both on- and off-highway, heavy-duty vehicles, including but not limited to buses, coaches, tractors and Class 8 trucks.
- Vehicles can be tested on an integrated, adjustable, high-performance, three-axis chassis dynamometer (650HP continuous, 1800HP peak).
- MotiveLab™'s regenerative AC dynamometer motors can simulate various ground topologies such as slopes.
- Secondary uses include applications requiring access to a temperature-controlled test environment, such as prototype and product validation (e.g., aerospace, new building materials), new process validation and extreme physiological tests.

- Precision cold and hot starts for vehicles.
- Engine tuning using our advanced Mustang dynamometer.
- Comprehensive heating, ventilation and air-conditioning (HVAC) testing.
- Thorough product validation in extreme temperature conditions.

NEW FEATURES

- 150kW Siemens SiCharge rapid charging station accessible while vehicle is inside the chamber.
- Ability to control relative humidity setpoint from five per cent to 95 per cent.



Other Research Facilities and Resources

EARLY CHILDHOOD DEVELOPMENT RESEARCH (ECDR)

RRC Polytech is world renowned for the development, promotion and adoption of the Science of Early Child Development (SECD) initiative. We are committed to building on our leadership role in social innovation research and knowledge mobilization. And our goal is to continue making positive impacts on families and communities around the globe.

SECD is based on the increased understanding that early brain development in children (and even before birth) is influenced by the environment and experiences surrounding the child, setting the foundation of lifelong health, learning and wellness.

DIGITAL TECHNOLOGY TRANSFORMATION INITIATIVE (DTTI)

This flexible research fund supports Manitoba industry and community partners in their journey toward digital transformation to drive sustainability in our province.

RRC Polytech is eager to put the power of partnership to work for you and recognizes that funding processes can be time-consuming and labour-intensive. Let our DTTI team match you with the right department and talent within our organization to lead your research project and secure funding through this program.



CENTRE FOR AUTOMATION AND MANUFACTURING TECHNOLOGY TRANSFER (CAMTT)

The new technology and innovation hub of the Price Institute of Advanced Manufacturing and Mechatronics at RRC Polytech.

The first of its kind in Manitoba, CAMTT forms a nexus of industry and academic partners that encourages collaboration to drive advancement through innovative solutions in the manufacturing sector. It provides a distributed network of spaces, facilities and expertise through which partners can access and leverage technology, knowledge, assets and talent in a work-integrated and real-world environment.

APPLIED COMPUTER EDUCATION PROJECT SPACE (ACE)

An interactive workspace at RRC Polytech's Exchange District Campus where students, entrepreneurs, non-profit organizations, and corporations collaborate to bring unique ideas to life through collaborative applied research.

With the guidance of experienced staff and faculty, students of Applied Computer Education's programs work with industry clients to create prototypes, products and services. Our instructors are dedicated to teaching the next generation of IT professionals and laying a groundwork of highly sought-after skills that are needed for today's market.







PARTNER WITH US
rrc.ca/ar