



Despite market fluctuations, oil and gas production continues to expand from Colombia to Mexico, from East Africa to Mauritania. In Canada, where for the moment, our economy relies on our ability to transport oil to markets, the industry has been working towards a “zero incidents” operation to increase pipeline integrity.¹

How can we ensure this changing industry safeguards our health and the environment?

How do we answer the call for innovation and highly qualified staff?

The Pipeline Integrity Institute (PII) at the University of British Columbia (UBC) partners with the pipeline sector to teach and train future engineers. We enhance the safety and integrity of pipelines through peer-based research. We disseminate impartial, factual information related to industry and the public.

The Banff Pipeline Workshop (2017)² recently highlighted the importance of “raising the bar” in all aspects of the oil and gas pipeline industry, noting that we must:

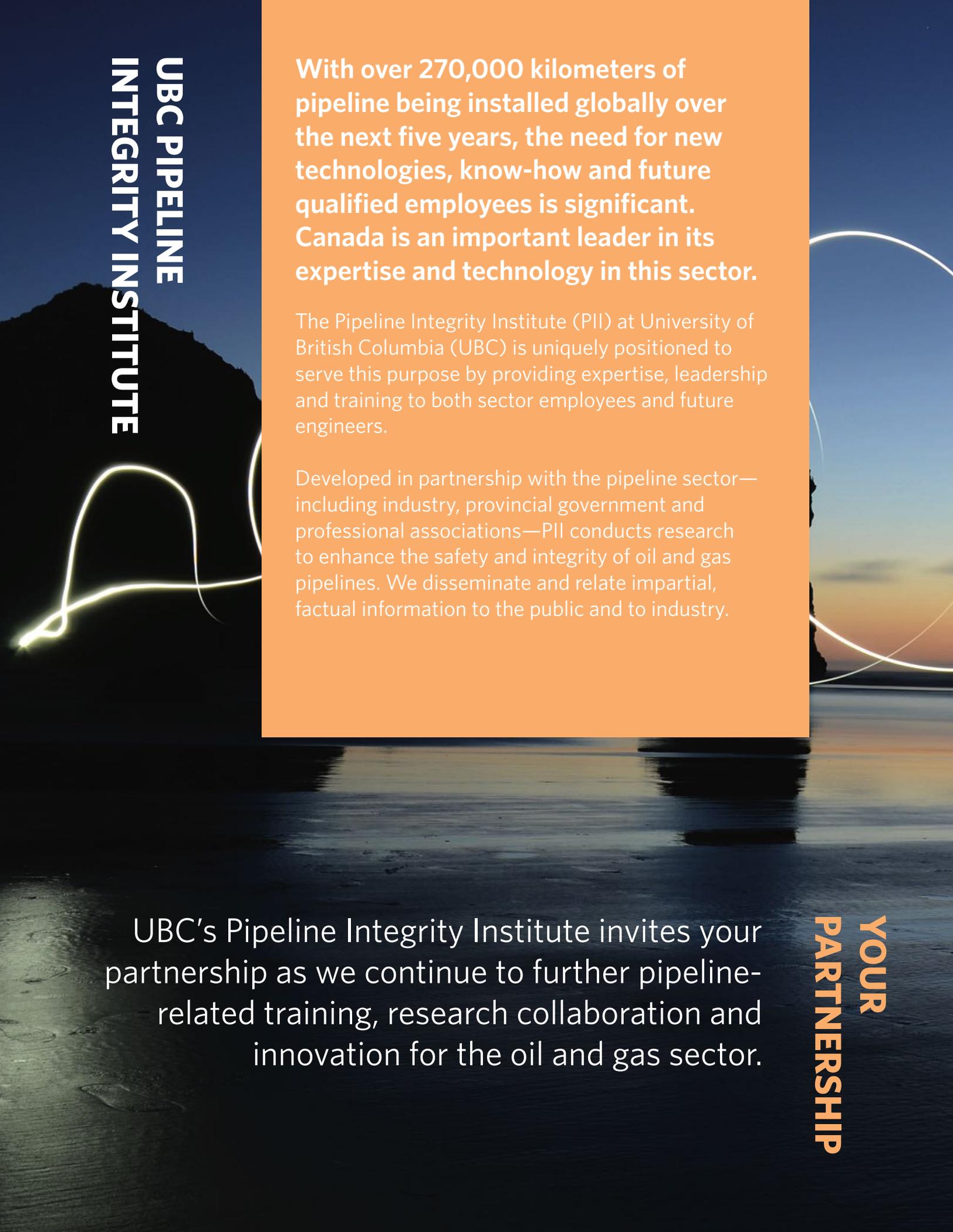
“better understand the gaps, develop technology, have transparency in communication, share knowledge, improve standards...working together to make the pipeline industry a model to follow.”



PIPELINE INTEGRITY
INSTITUTE
INSTITUT D'INTÉGRITÉ
DE PIPELINE

1. CEPA, 2016, Taking action on our commitment to Canadians, 2016 Pipeline Industry Performance Report, Canadian Energy Pipeline Association

2. Banff Pipeline Workshop (2017), Raising the Bar - The 14th Workshop, Banff, April 3 - 6, 2017



**UBC PIPELINE
INTEGRITY INSTITUTE**

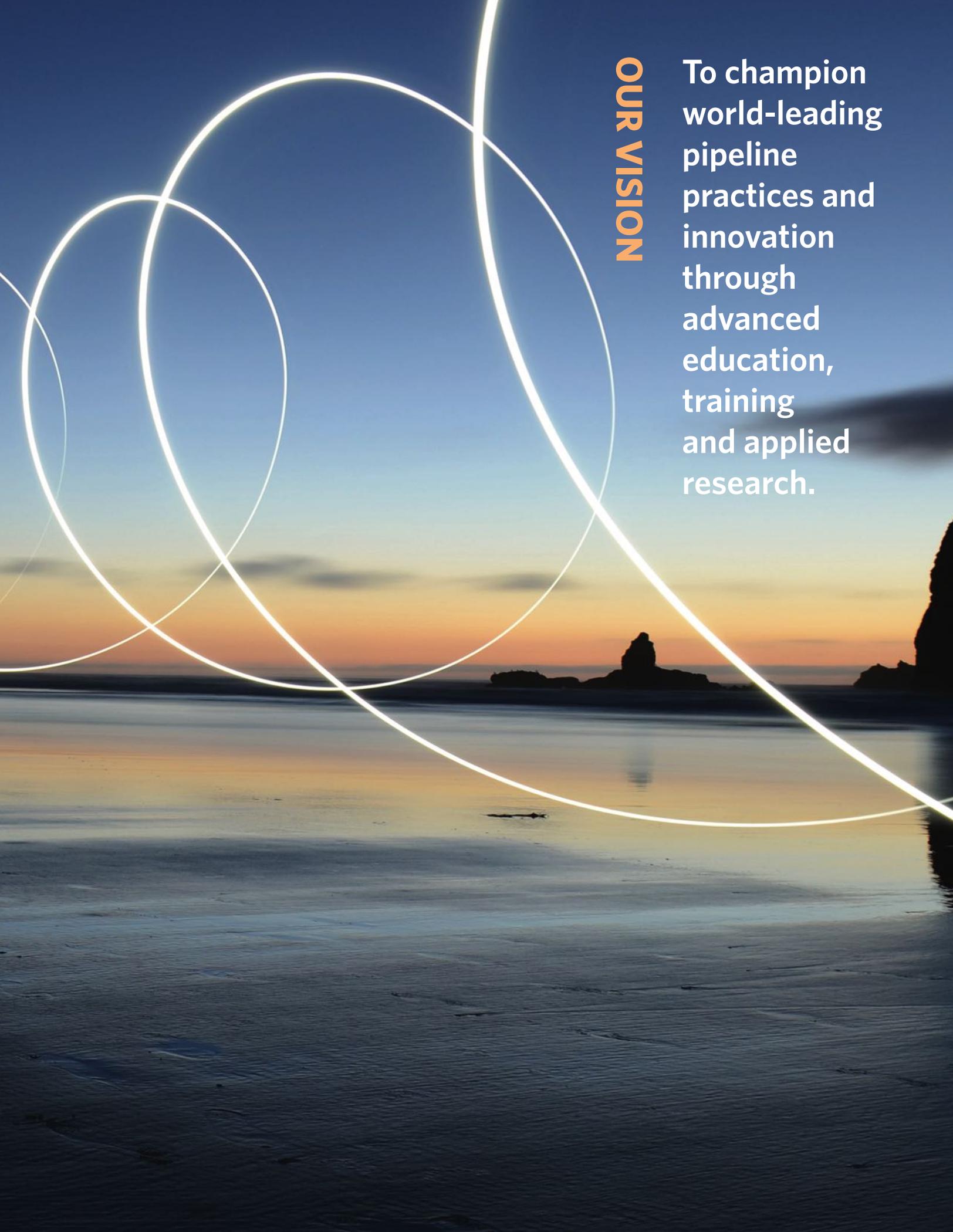
With over 270,000 kilometers of pipeline being installed globally over the next five years, the need for new technologies, know-how and future qualified employees is significant. Canada is an important leader in its expertise and technology in this sector.

The Pipeline Integrity Institute (PII) at University of British Columbia (UBC) is uniquely positioned to serve this purpose by providing expertise, leadership and training to both sector employees and future engineers.

Developed in partnership with the pipeline sector—including industry, provincial government and professional associations—PII conducts research to enhance the safety and integrity of oil and gas pipelines. We disseminate and relate impartial, factual information to the public and to industry.

UBC's Pipeline Integrity Institute invites your partnership as we continue to further pipeline-related training, research collaboration and innovation for the oil and gas sector.

**YOUR
PARTNERSHIP**

A sunset over a beach with glowing white circles overlaid on the image. The sky transitions from a deep blue at the top to a warm orange and yellow near the horizon. The water is calm, reflecting the colors of the sky. In the foreground, the wet sand of the beach is visible. Several large, glowing white circles of varying sizes are overlaid on the scene, some overlapping each other. The text 'OUR VISION' is written vertically in orange on the right side of the image.

OUR VISION

To champion world-leading pipeline practices and innovation through advanced education, training and applied research.

PARTNERSHIP

Access to highly qualified engineers. Training for employees.

Collaboration opportunities. Impartial research on pipeline design and performance.

PLI Partnership presents companies with a host of benefits and opportunities, including the strengthening of pipeline innovation and preparation of the next generation of pipeline experts.

Every investment dollar is significantly multiplied by government partner investment support. Contributions allocated to applied research initiatives are applicable to SR&ED tax credit and potentially matched by the Natural Sciences and Engineering Research Council of Canada.

Your active engagement and support constitutes the strength and integrity of the institute. We welcome foundational partners to join the advisory board, helping us to maintain transparency and an open profile—that is, the integrity of the institution itself.

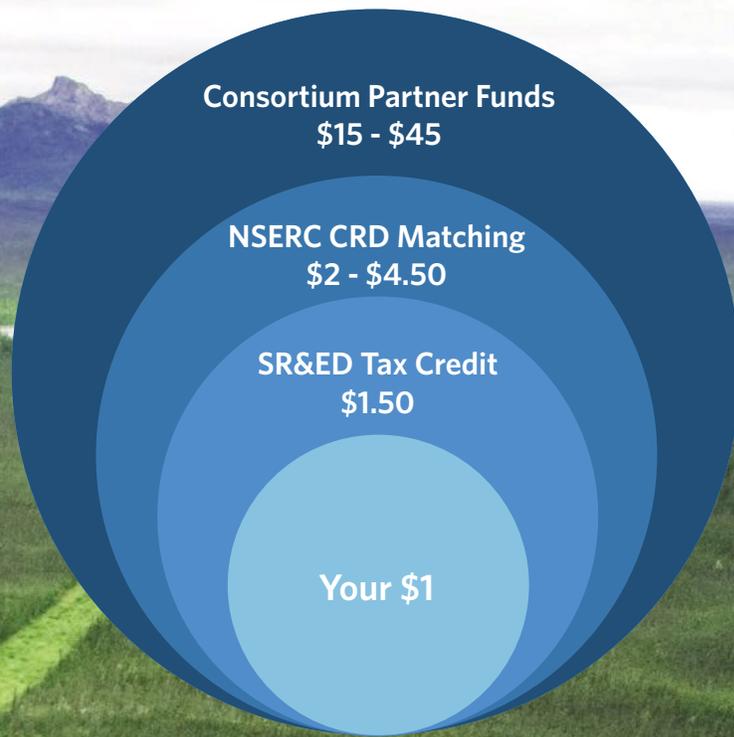
TARGETTED OUTCOMES

- Provide students with the skills to become pipeline engineers
- Enable applied research guided by pipeline experts and designed to enhance pipeline safety and environmental performance
- Contribute independent third-party expertise on engineering and technical aspects of pipeline design

\$1 Industry dollar results in \$15 to \$45 dollars in research and graduate training

BENEFITS

- Recruitment
- Applied research
- Impartial technical engineering perspectives
- Significant investment multiplier
- Courses for training of existing employees
- Access to researchers, knowledge and specialized testing facilities

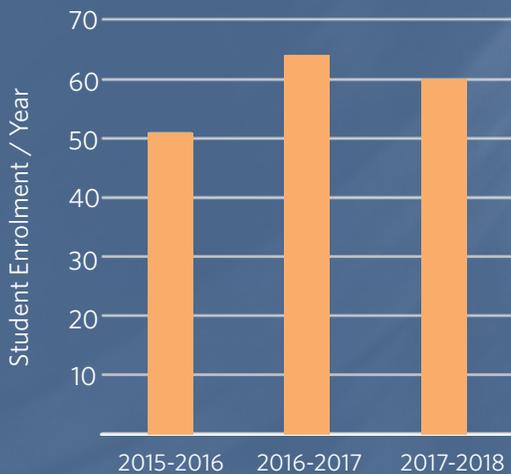


FOUNDING AND CURRENT PARTNERS



TRAINING THE NEXT GENERATION OF PIPELINE ENGINEERS

Our courses, taught by UBC faculty and lecturers from industry and government regulatory bodies, are complemented by industry sector co-op and internship opportunities.



We offer three undergraduate courses related to pipeline engineering, which have seen high enrolment. The first cohort graduated in May 2016.

RESPONDING TO INDUSTRY NEEDS WITH RESEARCH AND INNOVATION

PII continues to expand our research, seeking collaboration with industry, government and the public where appropriate. Currently, we have numerous sector-driven research projects underway. Below are two relevant examples:

(i) Improving Protective Pipeline Coatings

As the fifth largest producer of natural gas in the world, Canada has seen the bulk of that production in the Northwest. Whether a given project involves new pipelines or the expansion of existing ones, the Northwest environment poses significant challenges,

The PII initiative is the first and only specialization in North America to offer undergraduate courses in pipeline engineering.

including cold rough terrain, and corrosive and abrasive rocks. Our research is exploring ways to circumvent these challenges.

(ii) Pipelines and Muskeg

While significant research has been undertaken to study the performance of buried pipelines in commonly encountered soils, much work remains to be conducted regarding the behaviour of pipelines in muskeg. Considering this often problematic soil type covers over 1.5 million square kilometres of the Canadian landscape, including northern Alberta and BC, we are advancing pipeline technologies aimed at the improvement of field joint and internal coatings. Also in development are new methods to improve external coating performance in rocky and acid-generating areas.

COMMUNICATING PIPELINE RESEARCH TO INDUSTRY AND PUBLIC

PII engages in factual and technical research to the benefit of both the public and industry. Objective third-party review and analyses inform our design and construction practices and regulatory framework. Academia has an important role to play in this regard.

PII contributions to this objective include:

- Youth engagement (e.g. Young Pipeliners Association of Canada - YPAC)
- Representation at panel discussions
- Engagement with public and government
- Media articles and interviews
- Journal publications and conferences
- Research-aligned industry practices and guidelines

When you decide to become a Partner, your company stands to benefit from not only recruitment and employee training but also access to technical expertise and testing.

Consider participating in guest lectures, collaborating with PII researchers or even helping us to better communicate and share our pipeline research and programs with the public and the sector at large.

We would be delighted to expand on these concepts in more detail at your convenience. Thank you for considering this unique opportunity.

Through the decision to partner with the PII, your company stands to benefit from not only recruitment and employee training but also access to technical expertise and testing.

Consider participating in guest lectures, collaborating with PII researchers or communicating the results and benefits of our pipeline research programs with industry and the public.

We would be delighted to expand on these concepts in more detail at your convenience. Thank you for considering this unique opportunity.

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