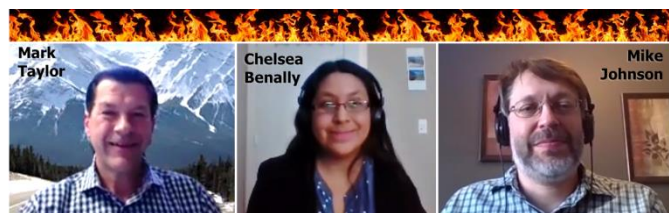




REDEVELOP Challenge 2020.

Earlier this month, more than 70 participants from industry, government, academic and Indigenous communities Zoomed in for *The REDEVELOP Challenge 2020*. Since REDEVELOP training involves multi-university teams who regularly attend virtual meetings and workshops, the students adapted readily to the virtual-conference format. Each team had 20 minutes to articulate their story clearly and concisely for a technical audience. Presentations included: (1) a foundational scientific question, (2) an explanation of the policy issues, and (3) a perspective collected from at least one Indigenous community. They also had 90 seconds to illustrate their key messages using a video designed for a general audience. Teams demonstrated the depth and relevance of their knowledge during the 30-minute Q&A that followed, in *Dragon's Den* format. This year's Dragons had the opportunity to preview each team's scientific poster and policy paper, so they were ready to pose thought-provoking questions to explore the limits of each team's knowledge and to push them to consider all possibilities. Through this experience, the cohesiveness of each team as a functional group of diverse, interdisciplinary professionals was evaluated. The conversation continued for a final 10 minutes with an open-floor Q&A engaging the audience. Take a look at the team entries on our website (REDEVELOP.CA).



This year's Dragons offered a range of expertise. **Mark Taylor** is a seasoned energy-sector leader and a pioneer in unconventional resource development, leading innovations like saline water usage in natural gas stimulation and the first induced seismicity protocol in North America. **Chelsea Benally** is from the Diné (Navajo) Nation in Arizona and, in 2018, became the first Indigenous woman to obtain a PhD in (Environmental) Engineering from the University of Alberta. **Mike Johnson** is a Technical Leader on the Energy Supply and Data Team at the Canada Energy Regulator, and has shaped their regulatory philosophy for energy trade, providing expert advice on energy markets to Canada's Minister of Natural Resources.

A Time of Change.

The COVID-19 pandemic, as well as the plunge in oil price, resulted in a "great pause" that was felt around the globe this past winter. In Canada, we have been forced to reflect on growing populations, social distancing, how we educate our children, and how we care for our elderly. Reflective conversations about the direction of our economy, energy production and food security have advanced quickly, as we struggle to define a "new normal". Now, more than ever, REDEVELOP training is needed to prepare the next generation of science and engineering leaders and policy makers to solve the energy-sector challenges we face now and in the future. The work presented by this year's teams, shown below, was a demonstration of rigorous research and innovative creativity that is worthy of support from potential employers.



The winning team, representing the Universities of Calgary and Toronto, reported on geomechanical modeling of potential leakage pathways through caprock at natural gas storage sites. Policy issues associated with Directives 23 and 65 were explained and issues for consultation processes with at least 10 Indigenous communities were discussed. Recommendations based on the science and cultural understanding were put forth.

Training graduate students to work across disciplines, distance and cultures builds self-awareness, tolerance, humility and diversity in problem-solving. May 2020 marks the end of our 3rd year, yielding 60 trained HQPs (*highly qualified personnel*), 18 of whom have graduated from their academic degree programs and are either working in their field or have gone on to PhD research.

WANTED: Energy transition topics suggestions for 2020-21 REDEVELOP Challenge Teams



A comparative analysis of Canadian LNG within the global natural gas supply was presented by this team, comprising students from the Universities of Alberta, Calgary and Toronto. Policy alternatives were explained using 3 case studies. With this in mind, benefits (and risks) to Indigenous communities along Canada's east and west coasts were identified.



Criteria for the evaluation of orphan wells, along with a range of repurposing options to turn liabilities into assets, was presented by this team representing the Universities of Calgary and Waterloo. Their explanation of why Indigenous cultures value environmental stewardship and traditional lands was highly effective. Policy challenges faced by the Orphan Well Association were explained and options based on science and consultation were suggested.



In response to the pipeline issues Canada is facing, this team of students from the Universities of Alberta, Calgary and Toronto proposed transporting solid bitumen by rail, rather than in liquid form by pipeline. They identified the environmental and socio-economic concerns of coastal First Nations. Their scientific feasibility and cost-benefit analysis was convincing, and the absence of any legislation addressing the mobility of undiluted bitumen was revealed.

REDEVELOP HQPs make better interns, which make better employees ...

A cohesive, interdisciplinary team with the ability to work across distance and cultures is an asset to any employer. REDEVELOP students receive training in communication, leadership and conflict resolution through workshops in industrial-organizational psychology.



They gain a foundational understanding of Indigenous history in Canada, the Truth and Reconciliation Calls to Action, the importance of relationship-building, and the differences between western and traditional approaches to problem-solving through a 4-day workshop in Indigenous Relations in Calgary.



Students are eager to complete at least one internship during their Master's or Doctoral program. Under REDEVELOP's contract with [MITACS](#), companies are eligible for employer-match funding (of \$7,500 each) for a 4-month internship. For more information, contact the [Program Manager](#).



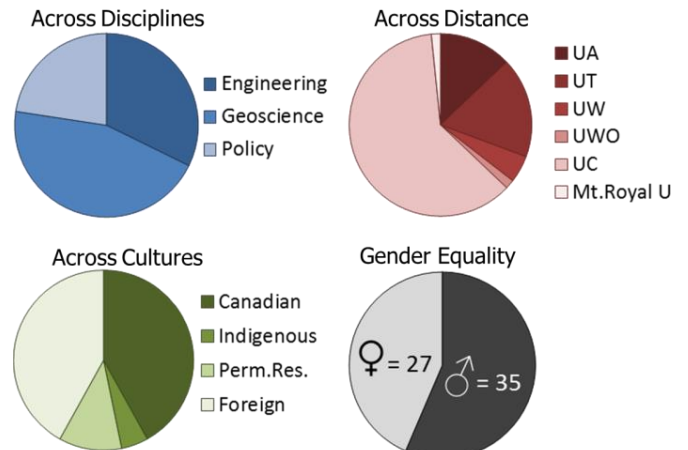
Mentorship Pipeline Project.

Additional funding has been secured to expand REDEVELOP's Indigenous inclusivity through a collaboration with the Sucker Creek First Nation community. A parallel program investigating the water quality of Lesser Slave Lake in Alberta will be launched this summer, where grad students will mentor Indigenous undergrad interns, who will mentor SCFN high schools students. This will be a 3-year pilot project to test its applicability to other communities recommended by the [Indian Resource Council](#).



Recruiting for 2020-21.

We are currently accepting applications from graduate and undergraduate students. [Application forms](#) can be submitted by email, along with your resume, transcripts and statement of interest to the [Program Manager](#) (celia.kennedy@ucalgary.ca).



Plots reflect 60 HQPs and 2 undergraduate interns. REDEVELOP students receive up to a \$10K scholarship plus up to \$2K for travel.

WANTED: Energy transition topics suggestions for 2020-21 REDEVELOP Challenge Teams