REPORT TO COMMUNITY 2019
VISION
Catalyze Canada’s transformation to a vibrant and sustainable future.

MISSION
We work together to advance research, scholarship, and innovation, create authentic learning experiences, and inspire careers of the future. We do this work to generate curiosity-driven discovery and to contribute to solutions to societal grand challenges.

VALUES
Our core values weave into both what we do... and how we do it! They guide our initiatives for students, research, community, and are guiding principles in how we work together.

IMPACT • CURiosity • INTEGRITY • INCLUSIVITY • COLLABORATION • WELLNESS

Dean’s message
It is my privilege to provide you an annual update on Faculty of Science activities this last academic year. Our Report to Community showcases the Faculty’s impact around the world, and is guided by our strategic plan, which is built on our three strategic priorities:

• Developing and supporting champions of science
• Advancing solutions to our Grand Challenges
• Promoting and supporting an engaged and impactful team

The following pages are just a glimmer of the creativity and discovery happening in the Faculty every day. You will meet researchers who are taking on some of the world’s greatest challenges on Earth and in the skies, students who are pushing the limits of learning in and out of the classroom, professors and instructors who are making a difference in student learning, and members of our community who are creating places where science can thrive.

While we take pause to celebrate our achievements, we know that we still have work to do — and we are up for the challenge!

Thank you to our students, faculty, staff, volunteers, alumni, and supporters who have come together to foster new opportunities to create, discover, learn, and reach deeper into the local community and beyond.

I am excited for the next year, and look forward to you being a part of our success.

Lesley Rigg
Dean

The Faculty of Science is gaining momentum, and we are doing great things. For more highlights and in-depth stories, please visit our website at science.ucalgary.ca/2019communityreport
The Faculty of Science in the community
July 1, 2018 — June 30, 2019

JULY

Students, faculty, and staff enjoyed the western hospitality from the Department of Biological Sciences at their annual Stampede Breakfast. Yahoo!

Spells, potions, and fun! It was a magical experience for hundreds of guests as the Department of Chemistry hosted School of Magic at Kensington’s Fantasy Faire in late July.

AUGUST

Over 10,000 guests visit the Rothney Astrophysical Observatory (RAO) throughout the year to look at the night skies. The RAO hosted special open houses throughout July and August for a Mars Viewing Night and Milky Way nights.

SEPTEMBER

The Faculty welcomed over 1,200 first year students to our science community when they started classes in early September.

The Faculty of Science hosted its third annual Ada Lovelace Day celebration. Over 80 students and faculty came together to hear mathematician and pianist Dr. Eugenia Cheng speak about “Inclusion and Exclusion in Mathematics”.

In partnership with Beakerhead, UCalgary and the Faculty of Science hosted A Matter of Mettle — a public conversation with Dr. Jocelyn Bell Burnell. Bell Burnell is an astrophysicist from the United Kingdom who discovered the pulsar in 1967, considered by the BBC to be “one of the most significant scientific discoveries of the 20th century.”

OCTOBER

The Faculty of Science hosted its third annual Ada Lovelace Day celebration. Over 80 students and faculty came together to hear mathematician and pianist Dr. Eugenia Cheng speak about “Inclusion and Exclusion in Mathematics”.

Ada Lovelace Day is an international celebration of the achievements of women in science, technology, engineering, and math (STEM).

NOVEMBER

Drs. Paul Barclay (Physics & Astronomy), Belinda Heyne (Chemistry), Lora Oehlberg (Computer Science), Cathy Ryan (Geoscience) and Anatoliy Swishchuk (Mathematics & Statistics) were inaugurated as 2018 Peak Scholars. Peak Scholars are nominated by their deans for projects that demonstrate community or knowledge engagement, entrepreneurship, tech transfer, innovation, or collaborative research.

DECEMBER

Drs. Robert Woodrow, Peter Lancaster, and Bill Sands (Mathematics & Statistics) were among 49 Canadians named to the Canadian Mathematical Society’s inaugural class of Fellows, recognizing mathematicians who have made significant contributions to the profession and to the Canadian Mathematical Society.

ARCH Awards winners
Answering some of the biggest mysteries about the aurora borealis

Dr. Emma Spanswick, Eric Donovan, and Chris Cully (Physics & Astronomy) were featured in a segment on the Aurora Borealis on CBC’s The Nature of Things. In March 2018, the team headed to the Northwest Territories to work on a range of experiments, with a goal of answering some of the biggest mysteries about the northern lights.

JANUARY

In partnership with organizations such as Chevron, the Department of Computer Science hosted a series of “What the Tech” breakfasts to make connections with industry, and discuss how tech can address current energy sector challenges.

DRS. EMMA SPANSWICK, ERIC DONOVAN, AND CHRIS CULLY (PHYSICS & ASTRONOMY) WERE FEATURED IN A SEGMENT ON THE AURORA BOREALIS ON CBC’S THE NATURE OF THINGS. IN MARCH 2018, THE TEAM HEADED TO THE NORTHWEST TERRITORIES TO WORK ON A RANGE OF EXPERIMENTS, WITH A GOAL OF ANSWERING SOME OF THE BIGGEST MYSTERIES ABOUT THE NORTHERN LIGHTS.

The Faculty of Science hosted its first Experiential Fair. Prospective students and their families had the opportunity to speak with current students and faculty to discover all that science has to offer and what life is like as a Science student. Students visited various booths and learned how to get involved in research programs like: mentorship, internship, and study abroad. Student athletes, professors, and USc advisors were on hand to answer questions.

FEBRUARY

Dr. Dan Bolnick from the University of Connecticut and the Editor in Chief of The American Naturalist, was the guest speaker at the Department of Biological Sciences 34th annual Darwin Lecture. In honour of the International Day of Women in Science, and as part of the International Union of Pure and Applied Chemistry (IUPAC) 100th anniversary, the Department of Chemistry hosted a Global Women’s Breakfast for alumni, faculty and students.

OVER 120 INDIGENOUS HIGH SCHOOL STUDENTS DISCOVERED HOW SCIENCE PLAYS A ROLE IN OUR EVERYDAY LIVES THROUGH EXPERIMENTS WITH DNA, MICROSCOPES, FOSSILS, PHYSICS GIZMOS, POLYMERS, WEARABLE TECH FASHION, ROBOTICS, KNOTS, AND MORE!

MARCH

The student chapter of the Association for Women in Mathematics hosted its first Sonia Kovalevsky Day, with support from the Prairie Institute for Mathematical Sciences and the Faculty IDEAS fund. This STEM event inspired a greater appreciation for mathematics in female high school students, and showcased the breadth and depth of the discipline.

1.314 PI DAY – STUDENT AMBASSADORS ENGAGED THE UNIVERSITY COMMUNITY IN ALL THINGS RELATED TO PI AND PIE.

APRIL

The annual Pi Day event featured over 55 student projects displaying creativity, ingenuity, programming, and computing at its best.

The annual Biological Sciences Undergraduate Independent Research Symposium showcased students’ research projects in areas from microbial ecology in the Arctic sea to bat box occupancy in Southern Alberta.

The Geological Sciences Research Exchange (GeoREx) annual student symposium provided students a chance to practice and prepare for conference presentations, as well as to showcase their talents.

The annual Elizabeth Dixon Symposium in Environmental Science for undergraduates independent research offered environmental science students the opportunity to present their research to their peers and the public.

MAY

The Faculty hosted another successful Technovation Challenge Regional pitch competition with 17 teams of girls from schools and community groups in and around Calgary. The competition ended the girls’ 12-week program exploring technology and entrepreneurial thinking.

The Annual Awards of Excellence celebrated the outstanding achievements of faculty, students, and staff members in Science.

Loops, flips, and turns — the Department of Physics and Astronomy and Calgary Park offered hundreds of students hands-on, fun physics at Rollercoasterology: the science of amusement parks.

The Department of Mathematics & Statistics hosted the annual Statistical Society of Canada (SSC) conference. This conference took place over four days and had over 500 attendees from across Canada.

JUNE

Soapbox Science was a success at the Calgary Zoo as we highlighted women in STEM to over 5,000 zoo visitors.

Drs. Catharine Whiteside and John Geiger received honorary degrees at the Science spring convocation ceremony.

Faculty members representing the Departments of Biological Sciences and Geoscience, and the Data Science and Analytics and Information Security post-graduate programs, participated in the 2018 Global Petroleum Show, highlighting UCalgary’s world-class innovations, scholars, and programming.

The Department of Biological Sciences partnered with the Office of Sustainability to host a Pollinator Celebration at the campus community garden, which featured a campus BioBlitz, a bee box making workshop, and planting native pollinator plants.
How are we developing and supporting champions of science?

Our Faculty’s impact involves more than what happens in our classrooms or in the field: it is brought to life through the actions and contributions of our faculty, staff, students, and alumni as we share their insights, skills, and research to serve our communities and the world. This service comes in many forms: from financial investments that drive innovation and development to science research that addresses many of the biggest challenges we face in society. Every day, our departments, programs, and institutes create places and spaces for developing and supporting champions of science — the work they do provides a strong base for faculty-wide initiatives.

We are committed to designing, offering, and participating in academic, experiential and professional development programs that enhance student and faculty experiences, and prepare them for success in a changing world:

- The LEAP (Leadership, Entrepreneurial Thinking, Access, Progress) Innovations Initiative is how the Faculty of Science sees our contribution to the broader university vision for entrepreneurial thinking. LEAP centres on our digital economy, and diverse research areas that grow the foundation of a digital economy, like data science, immersive technologies, fintech, new materials, and sensor and clean energy technologies. The initiative also incorporates leadership in science, and research and graduate training with an entrepreneurial focus.

- The economic landscape is changing rapidly across our province, our country, and the world. Our challenge is to ensure people are able to develop and update the right skills and knowledge throughout their careers to succeed. In September 2018, 33 students (18 men and 15 women) from around the province began their new graduate-level studies (certificate and diploma) in data science and analytics at the University of Calgary. These new programs prepare professionals to succeed in this rapidly growing career area. Looking ahead, there may be the opportunity to apply these credentials towards a master’s level program in data science and analytics.

- As the world becomes increasingly digitized, cybersecurity professionals are in ever-increasing demand. More than 210,000 cybersecurity jobs in Canada will need to be filled in the next three to five years, as every organization, from startups to governments, seeks to protect themselves against cyberattacks. In 2019, the Faculty of Science launched new graduate-level certificates in information security. The program brings professionals together with the university’s top information security researchers to work with real networks or develop usable software or products.

Students use Lego to turn difficult class into child’s ‘play’, helping students learn quantum chemistry
We are committed to incorporating a sense of pride in connecting with our community:

- The faculty exceeded its Energize Campaign goal of $35 million by over 75 percent for a total of $62.2 million. 68 percent of the annual goal was raised in the 2018-19 fiscal year.

- Donors to the faculty contributed over $40,000 to establish and endow two new scholarships.
  - Brian Keay Prize in Organic Chemistry was created by friends of Dr. Brian Keay in his honour to celebrate his retirement from the University of Calgary. The award will be given annually to the top student in advanced organic chemistry at the Department of Chemistry and most chemistry graduates who demonstrate the qualities of dedication, character, and a commitment to excellence.
  - Danielle Kondla Memorial Graduate Scholarship was established in honour of alumna Danielle Kondla who studied geology, and achieved Honours with Distinction for both her BSc’13 and MSc’15 degrees. The award will be given to a female graduate student in the Department of Geoscience who engages in field work and demonstrates the qualities of dedication, character, and a commitment to excellence.

- We created a new Strategic Partnership Specialist role to develop and lead initiatives that build connections between our Faculty and industry through strategic partnerships and other innovation activities.

- Undergraduate science students have the opportunity to access resources from the faculty’s IDEAS Fund to have their great ideas for authentic learning come to life. The fund provides financial support for students to expand their educational experiences outside of the traditional classroom. Over 54 students received funding this year for conference travel, research and study abroad activities.

- After a successful pilot year, the Alumni Mentorship Program kicked off its second year with 30 mentor and upper-level undergraduate student pairs. Faculty alumni provide mentorship to help students transition from university to the workplace.

- Six scholarships for the Faculty of Science and Schulich School of Engineering to recruit and retain indigenous students in STEM degree programs from DeBeers and UN Women.

Enhancing student engagement:

We are committed to recruiting and retaining students, faculty, and staff who support research and academic programs that best enrich our faculty.
• Drs. Rachel Lauer and Ann Quinney (Geoscience) and Drs. Sean Rogers and Mindi Summers (Biological Sciences) received i@Home Internationalization grants to explore new ways to internationalize course content and learning experiences with partner institutions. Grants supported Geoscience students in understanding global patterns of resource and energy consumption, and Biological Sciences students in identifying invertebrate species sold for consumption to make connections between harvesting practices, fisheries management, and impacts to marine biodiversity.

• In the fall of 2018, the Faculty launched its new undergraduate minor in data science. The minor emphasizes peer learning and project-oriented experiences grounded in real-world data.

• The new Mathematics program, launched in fall of 2018, replaced three existing programs — the Pure Mathematics program, the Applied Mathematics program, and the Statistics program. The new program improves on soft-skills development, and in the case of honours students, provides a required research experience; the new program is flexible, and allows students to build their own unique academic portfolios.

By the numbers

Undergraduate enrolment: 5,265 students as of December 1, 2018

Undergraduate students by department/program:

- Biological Sciences: 1,383
- Chemistry: 910
- Computer Science: 980
- Geoscience: 260
- Mathematics & Statistics: 501
- Physics & Astronomy: 289
- Natural Sciences Program: 478
- Environmental Sciences Program: 380
- Neuroscience Program: 102

Degrees granted:

- BSc: 858
- MSc: 135
- PhD: 59

Graduate enrolment: 810 students as of December 1, 2018

Graduate students by department/program:

- Biological Sciences: 180
- Chemistry: 102
- Computer Science: 111
- Geoscience: 111
- Mathematics & Statistics: 58
- Physics & Astronomy: 32
- Computational Media Design: 10

Convocation numbers reflect both Fall 2018 and June 2019
As society faces local and global challenges, we look to science for help. Our faculty has identified four Grand Challenges that harness our current strengths, look to future opportunities and allow us to make new discoveries.

These Grand Challenges are:

- Understanding Earth’s Evolving Systems
- Energy in Transition
- Unlocking our Digital Future
- Personalized Health at the Molecular Level

As we explore our Grand Challenges, we are developing pathways to connect science knowledge to stakeholders and decision makers, working collaboratively across disciplines, and creating new ways to educate and train students.

How are we advancing solutions to our Grand Challenges?

- In 2018, we launched our Grand Challenges with our first competition for research seed money. Six unique projects were selected that combined expertise from multiple disciplines and departments to identify tangible steps towards addressing one of our Grand Challenges or advancing a Research Platform. Each initiative has meaningful student involvement, with research looking at everything from the effects of pollution on our forests to the development of affordable and sustainable alternatives to CO₂ storage.

- We introduced the Innovation Workshop Series to create connections and develop collaborative research projects between UCalgary faculty and industry. The workshops dived into topics like data science, environmental mediation technologies, artificial intelligence, the Internet of Things, and nanomaterials. This is the first step in establishing the Faculty of Science as an innovation hub to feed into the Alberta and Canadian high-tech economy.

- Renovations to the Science Workshop were completed in 2018. The $12 million Strategic Investment Fund (SIF) renovation project has been the largest infrastructure investment ever spent on the facility.

- In December 2018, the university announced the Interdisciplinary Science and Innovation Centre (ISIC) project, an innovative new building on campus that will continue to drive excellence in research and teaching. The building will provide critical new spaces to advance programming and specialized research in numerous faculties, including the Faculty of Science and the Faculty of Arts.

- Fundamental inquiry is the foundation of science research and learning. This work is supported each year through the Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant program. In 2018, we saw our highest level of discovery-based funding, awarded at over $7 million, across 37 researchers in six departments, including early career to established scientists.

- The faculty celebrated Canada Research Chairs (CRCs):
  - New
    - Dr. Wesley Willett, PhD | Chair in Visual Analytics
    - Dr. Jennifer Adams, PhD | Chair in Creativity in STEM Education
    - Dr. Emma Spanswick, PhD | Chair in Geospace Dynamics and Space Plasma Physics
    - Dr. Susana Kimura-Hara, PhD | Chair in Analytical and Aquatic Chemistry
  - Renewed
    - Dr. Matt Vijayan, PhD | Chair in Environmental Physiology and Toxicology
    - Dr. Chris Cully, PhD | Chair in Space Physics
    - Dr. Joe Harrison, PhD | Chair in Biofilm Microbiology and Genomics
Bringing innovation and discovery to real-world problems

Our Grand Challenges align with the university’s Strategic Research Plan, and address current and future societal needs, engage our communities, and create opportunities for international prominence. Our goal is to understand as much as we can about the world around, above, and below us, and to use that knowledge to help build a better future.

Here are some highlights in areas where we’re fueling curiosity and discovery around our Grand Challenges and joining forces to address critical issues our world faces today and in the future. These stories underscore our commitment to research, innovative learning and teaching, and integration with the community.

Understanding Earth’s Evolving Systems

Including Earth as a system (from the core to magnetosphere), biodiversity and conservation, and the intersection of the natural and built worlds.

- Discovery opens the door to technologies for improving canola crops, a $27-billion industry in Canada. Dr. Marcus Samuel, PhD and alumna Dr. Sabine Scandola, PhD'18.
- Space physicists and citizen scientists shed light on STEVE. Dr. Eric Donovan, PhD.
- Fossilized teeth from a newly-discovered species re-opens chapter of evolutionary history in Alberta’s fossil record. Dr. Jessica Theodor, PhD.
- University of Calgary-led study finds natural mechanism that ensures long-term biological diversity in caribou. Dr. Marco Mussani, PhD and Dr. Maria Cavendon, PhD.

Energy in Transition

Including lower impact energy production, environmental remediation, and renewable energies.

- Researchers develop technology to calibrate and measure methane, helping reduce emissions. Dr. Oodi Lawson, PhD.
- Students getting ‘real-world’ multidisciplinary education and professional training through ReDeveLoP. Dr. David Eaton, PhD.
- University of Calgary-led study finds natural mechanism that ensures long-term biological diversity in caribou. Dr. Marco Mussani, PhD and Dr. Maria Cavendon, PhD.
- Capstone geoscience course encourages student creativity, explores emerging technology, entrepreneurial thinking, and disruptive innovation in a changing industry. Drs. David Eaton, PhD and Mario Costa Sousa, PhD.
- Study states Canada’s oil industry outperforming agri-food on energy efficiency. Kunbi Adetona, PhD student and Dr. David Layzell, PhD.
Unlocking our Digital Future

Including security in the digital age, privacy protection, visual computing and quantum information.

Researchers study the ways in which humans and robots connect with each other. Dr. Ehud Sharlin, PhD.

Graduate student’s research leads Microsoft onto the fashion runways of NYC. Teddy Seyed, Entrepreneurial PhD Candidate.

Digital bee collection launched. Drs. Paul Galpern, PhD and Mindi Summers, PhD.

Can machines make us more human? Digital technology and the future of work. Dr. Frank Maurer, PhD.

Personalized Health at the Molecular Level

Including drug synthesis, delivery and diagnostics, minimizing antibiotic bacterial resistance, and understanding the role molecules play in our health.

UCalgary-led team develops rapid diagnostic tool for fighting bloodstream infections. Dr. Ian Lewis, PhD.

Powerful research tool uncovers link between gut microbiota and copper. Drs. Mike Wissel, PhD and Kerri Miller, PhD, postdoctoral fellow.

Research widens path to microbial production of pharmaceutical opiates. Dr. Peter Facchini, PhD.

Researchers identify genes, biological pathways involved in microbes’ toxicity and resistance to silver. Natalie Gugala, PhD student, Drs. Raymond Turner, PhD, Gordon Chua, PhD, and Joe Lemire, PhD.

Partnership makes significant investment in cybersecurity research at UCalgary as Computer Science expert Dr. Rei Safavi-Naeini, PhD named NSERC–Telus Industrial Research Chair.

Can machines make us more human? Digital technology and the future of work.

UCalgary-led team develops rapid diagnostic tool for fighting bloodstream infections.

Powerful research tool uncovers link between gut microbiota and copper.

Research widens path to microbial production of pharmaceutical opiates.

Researchers identify genes, biological pathways involved in microbes’ toxicity and resistance to silver.
Research funding facts
2018-19 fiscal year

$43.9M
total research funding for the Faculty of Science

$12.2M
funds from NSERC

$2.2M
funds from CFI

$1.6M
from CIHR

$11.2M
from Industry
(including all other non-government grants and donations)

- Drs. Paul Barclay and Sean Rogers were each awarded NSERC Strategic Partnership Grants for projects enriching Canada’s economy, society, and environment within the next 10 years.
- Two faculty researchers granted Canada Foundation for Innovation John R. Evans Leaders Fund (JELF) awards. The John R. Evans Leaders Fund helps universities attract and retain the best and brightest researchers from around the world by supporting state-of-the-art research tools.
  - Dr. Susana Kimura-Hara, PhD | Disinfection Byproducts in Reclaimed Wastewaters: Formation, Occurrence, and Toxicity Indicators.
  - Dr. Benjamin Tutolo, PhD | Innovative Characterization of Water-rock Interaction for a New Generation of Models of Sustainable Energy Utilization.
- The Canada First Research Excellence Fund (CFREF) helps competitively selected Canadian post-secondary institutions turn their key strengths into world-leading innovations. With support from CFREF, two new faculty members joined the Department of Chemistry — Drs. Samira Siahrostami and Michelle Dolgos. The Dolgos Research Group focuses on the synthesis and characterization of new, improved materials for both clean energy applications and for electronic materials. Dr. Siahrostami’s group works in the area of catalysis for application in clean energy technologies including fuel cells, electrolyzers, and batteries.
- Alberta Innovates Strategic Research Program Emerging Technologies Grants awarded to:
  - Dr. Paul Barclay, PhD | Connecting Diamond Photonics to Qubits and Fiber Optics.
  - Dr. Peter Facchini, PhD | High-Value Plant Metabolite Production in Synthetic Biosystems.
- Two Alberta Innovates Water Innovation Program grants awarded to:
  - Dr. Bernhard Mayer, PhD | Aqueous Contaminants in Groundwater.
  - Dr. Ed Cey, PhD | Improved Urban and Rural Watershed Management.
- Alberta Innovates Strategic Research Program Emerging Technologies Grants:
  - Dr. Gregorv Welch, PhD | Additive Nanoscale Manufacturing of Next Generation Energy Efficient Lighting.
- Large-scale NSERC/Collaborative Research Development Grant:
  - Dr. Bernhard Mayer and Canada’s Oil Sands Industry Alliance (COSIA) on Reducing Fouling and Corrosion to Improve Energy Efficiency in Thermal Recovery Processes.
- The Faculty’s space physics group are building AuroraX, with funding from the Canada Foundation for Innovation (CFI), the province of Alberta and the Danish Technical University (DTU). AuroraX is a sophisticated web-enabled platform that will let anyone access a vast amount of data about the aurora.
- Dr. Barry Sanders, PhD, was awarded over $5 Million by the Alberta government’s Major Innovation Fund, which invests in research and innovation to attract and retain top talent to support industries and local businesses. Sanders’ team is working toward establishing Alberta as a hub for quantum technologies.
- Dr. Jan Dettmer, PhD, received inaugural New Frontiers in Research Fund funding to pursue his work towards next-generation geohazard monitoring, distributed acoustic sensing, and probabilistic machine learning for volcano — and landslide — hazard monitoring.
Recognizing our accomplishments, and promoting our people, is essential to our success. Our students, faculty, and staff shape our organization from the ground up, and help raise the bar in research, teaching and learning, and community engagement.

- The overarching umbrella for equity, diversity, and inclusion initiatives in the Faculty of Science is InspiR 3E (Inspire, Recruit, Retain, Recognize, and Elevate). Through this initiative, we want to inspire people who are under-represented or under-prepared in the world of science to pursue STEM careers; these people may include women, indigenous students, new Canadians, members of the LGBTQ+ community, visible minorities, and people with disabilities. InspiR 3E creates bridges with existing programs on campus and in the community.

- Diversity in academia enriches the educational experience, encourages critical thinking, and promotes the full inclusion of excellence across spectrums. In the last four years, the faculty has hired 41 faculty members, of which 18 (44 percent) are women. This is, in part, a result of targeted diversity efforts.

- We are home to the Technovation Challenge for the Calgary region. In 2019, we mentored 72 girls (10 senior teams, seven junior teams) with one junior team making it to the World Pitch in California August 2019.

- Ada Lovelace Day is a flagship event for the Faculty. Held every October, it aims to increase the profile of women in STEM. Lovelace, who died in 1852, was a gifted mathematician, and is considered to be the first computer programmer.

- We are setting the stage for faculty leadership development and have done the ground work on offering an early career faculty mentorship program. This includes sponsoring participants in the WinSETT (Women in Science, Engineering, Trades and Technology) Leadership Program and the ELATES program (Executive Leadership in Academic Technology, Engineering and Science) at Drexel University.

- We are creating places and spaces for collaboration and building community in the faculty. This last year we renovated a number of labs and offices, and moved the Undergraduate Science Centre into a new location. By doing this, we have created higher quality spaces for teaching and learning and connecting with students to better meet their needs. At the department level, Mathematics & Statistics built a new kitchen, and offices and collaboration spaces were upgraded in Physics & Astronomy.

How are we promoting and supporting an engaged and impactful team?

Recognizing our accomplishments, and promoting our people, is essential to our success. Our students, faculty, and staff shape our organization from the ground up, and help raise the bar in research, teaching and learning, and community engagement.

We are committed to focusing on continuous improvement to ensure we are supported in our work, and well positioned for the future with a culture of respect, diversity, and recognition:

2019 Annual Awards of Excellence event
Dr. Viola Birss, PhD (Chemistry) was inducted to the 2018 Order of the University of Calgary.

Dr. Isabelle Barrette-Ng, PhD (Biological Sciences) was one of only 10 people across Canada to receive a 2018 3M National Teaching Fellowship.

Dr. Warren Piers, PhD (Chemistry) was awarded the University of Calgary Killam Annual Professorships for excellence in research and teaching for 2019.

The province’s highest achievers working in science and technology were recognized at the 2018 ASTech Awards, including Dr. David Knudsen, PhD (Physics & Astronomy) and the space physics group, who won the ASTech Special Award.

Brandon Craig (Neuroscience), Adrianna Giffre (Neuroscience), James Bull (Biological Sciences), Keira Gunn (Mathematics & Statistics), were awarded 2019 Vanier Canada Graduate Scholarships.

Anastasiya Lazarenko (Computer Science) was a Killam Fellowship recipient in 2018.

Students Haoze Zhang, BSc (Geoscience) and Alejandra Enríquez García, PhD (Chemistry) received UCalgary 2019 International Achievement awards.

Drs. Rowan Cockett, BSC’11 and Sam Weiss, PhD’83 were honoured at the UCalgary 2018 Alumni ARCH Awards. Cockett received the Early Career Achievement Award and Weiss the Distinguished Alumni Award for Lifetime Achievement.

Dr. Kristine Bauer, PhD (Mathematics & Statistics) received a UCalgary Teaching Award for Full-Time Academic Staff.

Anna Ordog (Physics & Astronomy) received a UCalgary Teaching Award for Graduate Assistants.

Drs. Rowan Cockett, BSC’11 and Sam Weiss, PhD’83 were honored at the 2018 University of Calgary Killam Annual Professorships.

Congratulations to faculty and staff who received long-term service awards:
- 25 years: Dr. John Aycock, PhD (Computer Science); Catherine Hoodell (Geoscience).
- 15 years: Coral Burns (Faculty Office); Dr. Ashley Causton, PhD (Chemistry); Chadwick Dawes (Chemistry); Dr. Jeremy Fox, PhD (Biological Sciences); Dr. Jurgen Gailer, PhD (Chemistry); Dr. Cindy Graham, PhD (Faculty Office); Dr. David Hansen, PhD (Biological Sciences); Kimberly Nightingale (Geoscience); Dr. Kathleen Bechstuhl, PhD (Biological Sciences); Dr. Eudor Sharlin, PhD (Computer Science); Dr. Anatoly Swishchuk, PhD (Mathematics & Statistics).

For a full listing of UCalgary, community or discipline-related awards, visit: science.ucalgary.ca/2019communityreport

Alumna Ruth Mitchell, BA’01, BSc’01 earned Australia’s first Nobel Peace Prize

Dr. Viola Birss was inducted to the Order of the University of Calgary in 2018
Faculty of Science leadership team

**DEAN** | Dr. Lesley Rigg, PhD

**VICE-DEAN** | Dr. Cindy Graham, PhD

**ASSOCIATE DEAN, TEACHING, LEARNING & STUDENT ENGAGEMENT** | Dr. Wendy Benoit, PhD

**ASSOCIATE DEAN, RESEARCH & GRADUATE EDUCATION** | Dr. Cathy Ryan, PhD

**ASSOCIATE DEAN, INNOVATION & STRATEGIC PARTNERSHIPS** | Nancy Chibry, MSc

**ASSOCIATE DEAN, DIVERSITY, EQUITY & INCLUSION** | Dr. Steven Vamosi, PhD

** ASSOCIATE DEAN, UNDERGRADUATE PROGRAMS & STUDENT AFFAIRS** | Dr. Wendy Benoit, PhD

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**ASSOCIATE DEAN, UNDERGRADUATE PROGRAMS & STUDENT AFFAIRS** | Dr. Wendy Benoit, PhD

Department heads

**BIOLOGICAL SCIENCES** | Dr. Doug Storey, PhD

**MATHEMATICS & STATISTICS** | Dr. Tony Ware, DPhil

**PHYSICS & ASTRONOMY** | Dr. David Knudsen, PhD

**CHEMISTRY** | Dr. Todd Sutherland, PhD (interim head)

**COMPUTER SCIENCE** | Dr. Christian Jacob, PhD

**GEOSCIENCE** | Dr. Bernhard Mayer, PhD

Institute Directors

**ISPIA** | Dr. Ken Barker, PhD

**IQST** | Dr. Barry Sanders, PhD

Program Directors

**ENVIRONMENTAL SCIENCE** | Dr. Dan Shugar, PhD

**NEUROSCIENCE** | Dr. Wic Wildering, PhD

**NATURAL SCIENCES** | Dr. Ed Cey, PhD

**COMPUTATIONAL MEDIA DESIGN** | Dr. Patrick Finn, PhD

Dean's Circle

**Peter Tertzakian** | Chair of the Dean’s Circle, and Executive Director of ARC Energy Research Institute.

**Mark Blackwell** | Investing Partner, and lead of the Canadian office, at Builders. He holds a BComm’91.

**Don Clague** | Retired in the summer of 2018 after a 35-year career in oil and gas. He holds a BSc’83 in geophysics from the Faculty of Science.

**Pamela Cook Ellemers** | Manager — Mining Technical Services for De Beers Canada.

**Judy Fairburn** | Business leader and ecosystem builder for Canadian innovation, with a particular focus on Calgary’s resurgence.

**Gordon Lambert** | Suncor Sustainability Executive in Residence at the Ivey School of Business, and has established GRL Collaboration for Sustainability as a consulting practice.

**Owen McGoldrick** | Chair of the Faculty of Science Alumni Advisory Council; he holds a BSc’01 in Computer Science, and a MBA’08 in Finance and Global Energy Management and Sustainability.

**Joy Romero** | Vice President, Technology & Innovation at Canadian Natural Resources Limited (CNRL).

**Robert M. Schmidt** | President of reBox Creative Inc. and a Faculty alumnus with a BSc’96 degree in Cellular, Molecular and Microbial Biology and an MBA’01.

**Idan Shoham** | Founder of M-Tech Information Technology Inc., and serves as its Chief Technology Officer; he holds a BSc’91 and MSc’93 in Electrical and Computer Engineering.

**Greg Shyba** | CEO of the Ann and Sandy Cross Conservation Area.

**Todd Simpson** | Venture Partner with Montreal-based iNovia Capital and Faculty alumnus with BSc’87 and PhD’91 in Computer Science.

**Heidi Yang** | Former Chief Operating Officer of the Association of Professional Engineers and Geoscientists of Alberta (APEGA).