



2017/18 Annual Report Supplement

Covering the Objectives, Activities, and Finances
for the period of August 1, 2017 to July 31, 2018

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To: The Hon. Navdeep Bains, Canadian Minister of Innovation, Science, and Economic Development
Attn.: The Hon. Kirsty Duncan, Canadian Minister of Science and Sport

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Objective 1: Achieve breakthroughs in our understanding of the universe

Summary of Achievements

- Advanced fundamental research through 495 high-calibre papers¹
- Since inception, Perimeter researchers have produced more than 5,200 papers appearing in over 170 journals, which have attracted more than 240,000 citations to date, attesting to the importance and long-term impact of PI research²

Highlights

For detailed descriptions of several research highlights for the past year, refer to **pages 8-17** of the Annual Report. For a list of honours, awards, and major grants received by Perimeter researchers, refer to **pages 18 and 19**. For information on the growing Quantum Matter Initiative at Perimeter Institute, refer to **page 11**.

Supplementary Information (beyond the Annual Report Contents)

Honours, Awards, and Major Grants

The major research grants (totalling more than \$3.2 million, as noted on **page 19** of the Annual Report) awarded to Perimeter scientists include the following:

- Associate Faculty member Ue-Li Pen was awarded a Simons Investigator Award from the Simons Foundation, worth \$500,000 USD over five years. He is just the second researcher at a Canadian institution to receive the award since the program was introduced in 2012.
- Eleven Perimeter scientists were awarded Discovery Grants totalling \$2,723,000 (over terms of five years) from the Natural Sciences and Engineering Research Council of Canada, as follows:
 - Delaney Family John Archibald Wheeler Chair Avery Broderick: \$425,000 (\$61,000/year over five years, plus a Discovery Accelerator Supplement of \$40,000/year over three years)
 - Faculty member Timothy Hsieh: \$230,000 (\$46,000/year over five years, including an Early Career Supplement)
 - Faculty member Beni Yoshida: \$165,000 (\$33,000/year over five years, including an Early Career Supplement)
 - Associate Faculty member Matthew Johnson: \$278,000 (\$55,600/year over five years)
 - Associate Faculty member Sung-Sik Lee: \$250,000 (\$50,000/year over five years)

¹ This reflects the one-year period from August 1, 2017 to July 31, 2018. Each publication has been counted only once, regardless of how many Perimeter researchers collaborated on it.

² This data comes from the Google Scholar and Scopus databases.

- Associate Faculty member Matilde Marcolli: \$380,000 (\$52,000/year over five years, plus a Discovery Accelerator Supplement of \$40,000/year over three years)
- Associate Faculty member Roger Melko: \$305,000 (\$61,000/year over five years)
- Associate Faculty member Ben Webster: \$140,000 (\$28,000/year over five years)
- Associate Faculty member Huan Yang: \$285,000 (\$33,000/year over five years, including an Early Career Supplement, plus a Discovery Accelerator Supplement of \$40,000/year over three years)
- Associate Faculty member Jon Yard: \$120,000 (\$24,000/year over five years)
- PSI Fellow Maité Dupuis: \$145,000 (\$29,000/year over five years, including an Early Career Supplement)

Additional honours (not listed in Annual Report) received by Perimeter researchers in 2017/18 include:

- Former Perimeter PhD student Elizabeth Gould was awarded the W.B. Pearson Medal from the University of Waterloo for her PhD thesis, titled “New Views on the Cosmological Big Bang,” which was completed at Perimeter under the supervision of Associate Faculty member Niayesh Afshordi.

Objective 2: Create the world's strongest community of theoretical physics researchers

Summary of Achievements

- Appointed Kendrick Smith as the 10th Perimeter Research Chair
- Obtained major investments from Coril Holdings and the Daniel Family Foundation to support the Coril Holdings Archimedes Chair in Theoretical Physics (Visiting) and the Daniel Family P. James E. Peebles Chair in Theoretical Physics, respectively
- Welcomed Neal Dalal, William East, Yin-Chen He, and Timothy Hsieh as full-time faculty members and recruited Chong Wang, who will arrive in 2018/19, bringing the total to 26
- Welcomed Matilde Marcolli, Will Percival, and Huan Yang as new associate faculty members, bringing the total to 19

Highlights

For details on the recruitment of Perimeter Research Chairs, faculty, and associate faculty, refer to **pages 20-22** of the Annual Report. For a profile of recent faculty hire Neal Dalal, refer to **page 23**. For complete faculty and associate faculty bios, refer to **pages 52-61**.

Objective 3: Attract and develop the next generation of brilliant researchers

Summary of Achievements

- Welcomed 23 postdoctoral researchers in 2017/18 and recruited 17 more for 2018/19
- Five departing postdoctoral researchers obtained tenure-track faculty positions
- Launched three named fellowships tied to the Centre for the Universe
- Successfully ran the ninth year of the Perimeter Scholars International (PSI) master's program for 30 students and provided ongoing training for 53 PhD students in residence
- Brought 44 Visiting Graduate Fellows to the Institute for a total of 47 visits

Highlights

For a description of Perimeter's postdoctoral researcher program, refer to **page 23** of the Annual Report. For a complete list of postdoctoral researchers, refer to **page 61**.

For details about the Perimeter Scholars International (PSI) master's program, the PhD program, and the Visiting Graduate Fellows program – as well as a full listing of the 2017/18 PSI faculty – refer to **pages 24 and 25** of the Annual Report. For a profile of PSI student Stavros Efthymiou, refer to **page 37**. For a complete list of PhD and PSI students, refer to **page 62**.

For details about an award bestowed on Perimeter for the impact of its training programs on Canada's high skills labour market, refer to **page 19** of the Annual Report.

Objective 4: Attract outstanding visiting scientists

Summary of Achievements

- Appointed a leading scientist as a Distinguished Visiting Research Chair³ and renewed 16 more,⁴ bringing the total to 51
- Appointed 17 accomplished researchers as Visiting Fellows⁵ and renewed seven more,⁶ bringing the total to 46
- Welcomed nine early-career researchers as Simons Emmy Noether Fellows⁷
- Hosted 424 visiting scientists for a total of 465 visits⁸
- Held 20 conferences and workshops, attended by 713 scientists from around the world
- Presented 290 scientific talks (261 seminars and 29 colloquia)
- Partnered on eight joint workshops and conferences held at Perimeter⁹ and sponsored an additional 11 off-site workshops and conferences

³ The new DVRC is Edo Berger (Harvard University).

⁴ Abhay Ashtekar, Leon Balents, James Bardeen, Ganapathy Baskaran, Patrick Brady, Alessandra Buonanno, Lance Dixon, Gabriela Gonzalez, Shamit Kachru, Frans Pretorius, Iakov (Yan) Soibelman, Gerard 't Hooft, Barbara Terhal, Senthil Todadri, Frank Verstraete, and Ashvin Vishwanath all renewed their terms through 2020.

⁵ The new Visiting Fellows are Haipeng An (Tsinghua University), Joseph Bramante (Queen's University), Juan Carrasquilla (Vector Institute for Artificial Intelligence), Gil Young Cho (Korea Institute for Advanced Study), Claudia de Rham (Imperial College London), Astrid Eichhorn (Heidelberg University), Glen Evenbly (University of Sherbrooke), Tarun Grover (University of California, San Diego), Daniel Holz (University of Chicago), Brian Metzger (Columbia University), Belen Paredes (Ludwig Maximilian University of Munich/Arnold Sommerfeld Center for Theoretical Physics), Katarzyna Rejzner (University of York), Philip Schuster (Stanford University), Andrew Tolley (Imperial College London), Natalia Toro (Stanford University), Aaron Vincent (Queen's University), and Chenjie Wang (City University of Hong Kong).

⁶ Jonathan Barrett, Jutho Haegeman, Zohar Komargodski, Etera Livine, Kris Sigurdson, Brian Swingle, and Thomas Vidick renewed their terms through 2020.

⁷ The Simons Emmy Noether Fellows who spent time at Perimeter in 2017/18 were Olalla Alvarez (University of London – Royal Holloway), Celine Boehm (Durham University), Radja Boughezal (Argonne National Laboratory), Emanuela Dimastrogiovanni (Case Western Reserve University), Astrid Eichhorn (Heidelberg University), Valentina Forini (City University of London), Paula Mellado (Adolfo Ibanez University), Mairi Sakellariadou (King's College London), and Yaping Yang (University of Massachusetts, Amherst).

⁸ This included a strategic mix of affiliates, collaborators, potential recruits, and seminar and colloquia speakers, as well as 14 Distinguished Visiting Research Chairs, 22 Visiting Fellows, and 9 Simons Emmy Noether Fellows.

⁹ These included: (1) "Hopf Algebras in Kitaev's Quantum Double Models: Mathematical Connections from Gauge Theory to Topological Quantum Computing and Categorical Quantum Mechanics," with the Institute for Quantum Computing at the University of Waterloo; (2) "Gauge Theory, Geometric Langlands, and Vertex Operator Algebras," with the John Templeton Foundation; (3) "New Directions in Conventional and Ambient String Theories," with the Engineering and Physical Sciences Research Council; (4) "Asymptotic Safety in a Dark Universe," with the University of Saskatchewan and University of Waterloo; (5) "Low Energy Challenges for High Energy Physicists 3," with Columbia University; (6) "Tri-Institute Summer School on Elementary Particles (TRISEP) 2018," with SNOLAB, TRIUMF, and McMaster University; and (7) "Observers in Quantum and Field Theories" and "Algorithmic Information, Induction, and Observers in Physics," both with the Foundational Questions Institute (FQXi).

Highlights

For the latest on Perimeter’s Distinguished Visiting Research Chairs (DVRCs) and Visiting Fellows programs, refer to **pages 23** of the Annual Report. For a farewell to Perimeter’s inaugural DVRC, Stephen Hawking, refer to **page 29**. The complete listing of DVRCs can be found on **page 21** and the complete listing of Visiting Fellows is included as an appendix in this document.

For details on the Simons Emmy Noether Fellows program, including their context in Perimeter’s broader Emmy Noether Initiatives, refer to **pages 38 and 39** of the Annual Report.

For information on Perimeter’s visitor program, refer to **page 28** of the Annual Report. **Pages 64-67** also include a complete listing of the Institute’s scientific visitors for the year.

For updates on Perimeter’s scientific events – conferences, workshops, seminars, and colloquia – as well as information about Perimeter’s online archive of talks, refer to **pages 26 and 27** of the Annual Report.

For a highlight on the “Open Research: Rethinking Scientific Collaboration” conference, refer to **page 27**.

For a highlight on the “Career Trajectories Day” conference, refer to **page 9**. For a complete list of conferences, workshops, and academic sponsorships, refer to **pages 67 and 68**.

Objective 5: Act as Canada’s hub for foundational physics research

Summary of Achievements

- Appointed 10 new Affiliates from across the country and renewed 53 more, bringing the total Affiliate community to 116
- Signed a new partnership agreement with the Institute for Quantum Studies at Chapman University in California and renewed its partnership with the International School for Advanced Studies (SISSA) in Italy
- Partnered in the launch of the Arthur B. McDonald Canadian Astroparticle Physics Research Institute at Queen’s University, as one of 13 affiliated institutions
- Deepened ties with experimental and observational centres in Canada and abroad
- Continued to work closely with all relevant partners to foster the Quantum Valley ecosystem
- Held the Waterloo Global Science Initiative’s Generation SDG Summit, aimed at charting a course towards implementation of the United Nations’ Sustainable Development Goals
- Jointly appointed three associate faculty members with the University of Guelph, University of Toronto, and University of Waterloo (see Objective 2)
- Partnered with the University of Waterloo to hold the PSI master’s program and involved faculty from Canadian universities as lecturers¹⁰ (see Objective 3)
- Hosted eight joint workshops and conferences with national and international partners, and sponsored an additional 11 (see Objective 4)

Highlights

For information on Perimeter’s Affiliates, collaborations, and partnerships, refer to **page 28** of the Annual Report. For a complete listing of the Institute’s Affiliates, refer to **page 63**.

¹⁰ Lecturers included: Joseph Emerson, Institute for Quantum Computing at the University of Waterloo; Eduardo Martin-Martinez, Institute for Quantum Computing at the University of Waterloo; Rakesh Tiwari, McGill University; and Sean Tulin, York University.

Supplementary Information (beyond the Annual Report Contents)

Catalyst for Quantum Valley



In 2017/18, Perimeter researchers continued to work closely with experimentalists at the Institute for Quantum Computing (IQC) at the University of Waterloo and other key players in Waterloo Region¹¹ to ensure Canada remains at the forefront of international efforts to create new quantum industries, which will in turn spark major job and value creation.

The field of quantum condensed matter is crucial to the development of quantum technologies. This presents a significant strategic opportunity for Perimeter to build on existing strengths. This year, the Institute recruited many quantum and condensed matter specialists as part of its Quantum Matter Initiative. New Faculty members Yin-Chen He, Timothy Hsieh, and Chong Wang were the most visible new recruits in these areas, but additional recruitment successes include Visiting Fellows Juan Carrasquilla, Gil Young Cho, Glen Evenbly, Tarun Grover, Belen Paredes, and Chenjie Wang; Simons Emmy Noether Fellow Paula Mellado; and numerous postdoctoral researchers.

Engagement with Experimental and Observational Centres

Experiment is the ultimate test of all theory. Recognizing this, Perimeter helped to catalyze the creation of IQC in 2002 and it continues to be Perimeter's closest experimental partner today. IQC is led by

¹¹ This includes the surrounding academic community (including the Quantum-Nano Centre and the Waterloo Institute of Nanotechnology, both at the University of Waterloo), the region's vibrant start-up community (including Communitech and Universal Quantum Devices), and venture capitalists (such as Quantum Valley Investments, Mike Lazaridis' latest venture).

Interim Director Kevin Resch, a Perimeter Affiliate, and Deputy Director David Cory, an associate faculty member at Perimeter. Many more Perimeter researchers are cross-appointed at IQC.¹²

In 2017/18, Perimeter continued to strengthen ties to experimental and observational centres around the world. The new Centre for the Universe at Perimeter Institute, in particular, is deepening existing ties with the Event Horizon Telescope (EHT), Square Kilometre Array (SKA), Laser Interferometer Gravitational-Wave Observatory (LIGO), and Canadian Hydrogen Intensity Mapping Experiment (CHIME), among others. The Institute's many ties to international experimental efforts include the following:

- The Institute has formal partnership agreements with SNOLAB, an underground science laboratory specializing in neutrino and dark matter physics, and TRIUMF, Canada's particle accelerator centre.
- New Associate Faculty member Will Percival is a senior member of the Extended Baryon Oscillation Spectroscopic Survey (eBOSS), which seeks to precisely measure the expansion history of the universe; the Dark Energy Spectroscopic Instrument (DESI), which aims to measure the effect of dark energy on the expansion of the universe; and the Euclid experiment of the European Space Agency, which hopes to map the geometry of the dark universe.
- Delaney Family John Archibald Wheeler Chair Avery Broderick is a member of the EHT, which is working to directly observe the immediate environment of a black hole for the first time. He is also one of several Perimeter researchers associated with the Institute's EHT Initiative, which is building a team of faculty members, postdoctoral researchers, and graduate students to conduct leading-edge analysis of astrophysical data collected by the EHT. Faculty Chair Luis Lehner and Faculty member Guifre Vidal are also involved.
- Daniel Family P. James E. Peebles Chair Kendrick Smith works on several experimental collaborations aimed at measuring the cosmic microwave background (CMB), including CHIME, the Planck satellite, and the Hyper-Suprime Cam (HSC) at the Subaru telescope.
- Stavros Niarchos Foundation Aristarchus Chair Asimina Arvanitaki is part of the ARIADNE collaboration (Axion Resonant InterAction Detection Experiment), which is looking for axion mediated interactions in matter. She has also proposed several experimental tests of fundamental physics using optically levitated sensors, atomic clocks, and nuclear magnetic resonance.
- Associate Faculty member Maxim Pospelov is an associate member of the BaBar collaboration, which studies the physics of b-quarks and other intermediate mass particles. He is also part of the Global Network of Magnetometers for Exotic (GNOME) experiment, and directly collaborates with experimental physicists at TRIUMF and Fermilab.

¹² Associate Faculty members Raymond Laflamme and Michele Mosca were founding members of IQC and continue to be jointly appointed there, as are Associate Faculty members Raffi Budakian and Jon Yard, and postdoctoral researchers Anurag Anshu and Dave Touchette. Senior Research Affiliate Steve MacLean is an associate at IQC, and the institutes share many affiliates and students as well.

Lastly, Perimeter connects with experiment through its conference program, and several conferences in 2017/18 revolved around experimental findings and challenges.¹³ One notable example was the sixth edition of the Tri-Institute Summer School on Elementary Particles (TRISEP) – a partnership between Perimeter, SNOLAB, and TRIUMF – which Perimeter hosted in July 2018; Perimeter researchers Masha Baryakhtar, Maxim Pospelov, and Kendrick Smith were among the lecturers.

¹³ These included “Experimental Techniques in Table-Top Fundamental Physics” (August 21-25, 2017), “Lights, Sounds, Action in Strong Field Gravity” (November 6-7, 2017), “Quantum Black Holes in the Sky?” (November 8-10, 2017), “PI-NRC Meeting” (May 7-8, 2018), “Searching for New Particles with Black Hole Superradiance” (May 9-11, 2018), “Path to Kilohertz Gravitational-Wave Astronomy” (June 11-13, 2018), and “Tri-Institute Summer School on Elementary Particles (TRISEP) 2018” (July 9-20, 2018).

Objective 6: Catalyze and support the creation of centres of excellence

Summary of Achievements

- Provided continued expertise in support of both the African Institute for Mathematical Sciences – Next Einstein Initiative (AIMS-NEI) and the South American Institute for Fundamental Research (SAIFR)
- Shared Perimeter’s expertise in educational outreach internationally, engaging partners including the European Organization for Nuclear Research (CERN), the Laser Interferometer Gravitational-Wave Observatory (LIGO), and the California NanoSystems Institute at the University of California, Los Angeles
- Began translating Perimeter’s educational resources into Portuguese and helping SAIFR to build a Teacher Network in Brazil, allowing for a vastly greater impact in South America

Highlights

For information on Perimeter’s global outreach efforts, including efforts to share the Institute’s educational resources in Rwanda and South America, refer to **page 29** of the Annual Report.

Supplementary Information (beyond the Annual Report Contents)

SAIFR

Since 2015, Perimeter has partnered with the South American Institute for Fundamental Research (SAIFR), an emerging centre of excellence in theoretical physics located at São Paulo State University (UNESP) in Brazil. The two institutes have a great deal in common, including several research areas of focus and active visitor and conference programs.

In 2017/18, Perimeter continued to leverage the expertise of its research and administrative staff to assist with SAIFR’s growth.

- Pedro Vieira, the Clay Riddell Paul Dirac Chair in Theoretical Physics at Perimeter Institute, continues to spend up to six months per year in Brazil, helping to develop SAIFR, while Faculty Chair Luis Lehner serves on SAIFR’s Scientific Council.
- Nearly a dozen Perimeter researchers, students, and staff spent time at SAIFR, including Krembil William Rowan Hamilton Chair Kevin Costello, Daniel Family P. James E. Peebles Chair Kendrick Smith, and Director of Information Technology Ben Davies.

Objective 7: Share the transformative power of theoretical physics

Summary of Achievements

- Facilitated over 10 million student interactions through educational programs and resources, bringing the total to 40 million to date
- Hosted the 16th International Summer School for Young Physicists (ISSYP) and gave 15 Physica Phantastica presentations – reaching more than 3,600 students across Canada
- Delivered 161 workshops to over 4,600 educators across Canada and abroad, ultimately translating to more than 345,000 student interactions with Perimeter resources
- Hosted the “Inspiring Future Women in Science” conference for nearly 200 Canadian high school students
- Presented seven engaging public lectures to capacity audiences on-site and a growing global audience via webcasts and media partnerships
- Continued the Institute’s science communications efforts with over 410,000 pages views at insidetheperimeter.ca and more than 1.4 million YouTube video views, as well as strong growth across Perimeter’s social media channels
- Won four Prix d’Excellence awards for outstanding achievements in communications, publications, and fundraising from the Canadian Council for the Advancement of Education (CCAÉ)

Highlights

For information on Perimeter’s educational outreach efforts, refer to **pages 30-35** of the Annual Report. This includes details about the Institute’s International Summer School for Young Physicists, EinsteinPlus Teachers’ Camp, “Inspiring Future Women in Science” conference, new educational resources, Power of Ideas Tour, Public Lecture Series, cultural events, science communication and social media outreach, and media coverage.

Objective 8: Continue to strengthen Perimeter’s visionary public-private partnership

Summary of Achievements

- Began new five-year, \$50 million funding agreements with both the Province of Ontario and the Government of Canada
- Reached a major \$30 million private fundraising milestone with several large gifts and pledges as follows:
 - \$1 million from Coril Holdings in support of the Coril Holdings Archimedes Chair in Theoretical Physics (Visiting), held by Savas Dimopolous
 - \$700,000 from the Daniel Family Foundation in support of the Daniel Family P. James E. Peebles Chair in Theoretical Physics, held by Kendrick Smith
 - \$500,000 from the Power Corporation of Canada, proud supporter of EinsteinPlus and the Perimeter Teacher Network
- Secured a \$600,000 USD grant from the Simons Foundation in support of the Simons Emmy Noether Fellows program

Highlights

For details about Perimeter’s public-private partnership, including major successes in 2017/18, refer to **pages 36-39** of the Annual Report. This includes the complete membership listing of the Perimeter Institute Leadership Council and Emmy Noether Council, as well as details about the Institute’s Emmy Noether Initiatives. It also includes a profile of Anaximandros Fellow Stavros Efthymiou. For a full list of public and private supporters, refer to **pages 40 and 41**.

Governance

For Perimeter's governance structure, including complete bios for all members of the Board of Directors and the Scientific Advisory Committee, refer to **pages 42-45** of the Annual Report.

Performance Evaluation Strategy

Scientific

Perimeter Institute utilizes an array of performance monitoring and evaluation policies, systems, and processes (both internal and external) that are re-evaluated and updated on a regular basis. These mechanisms to measure outcomes, results, and impact include:

Performance Monitoring – Internal

- Annual reports on research activity submitted to the Institute's Director by all faculty and associate faculty members for evaluation
- Annual performance reviews of all staff
- Ongoing monitoring of publication and citation records
- Post-conference reports and evaluation
- Visitor research activity reports and ongoing tracking of all output
- Regular updates and monitoring of progress of all scientific programs
- Mid-term researcher performance reviews
- Postdoctoral researcher mentorship program
- Monitoring of postdoctoral researchers' post-Perimeter placement success
- Monitoring of researchers' international presence and impact through collaborations and invitations to lecture
- Internal review and evaluation of all outreach programs and products

Performance Monitoring – External

- Regular reporting to international Scientific Advisory Committee with subsequent performance assessment and recommendations
- Review of tenured faculty hires and promotions by Scientific Advisory Committee
- Peer review of publications
- Annual audit of financial statements by an independent auditor
- Other performance audits and reviews in accordance with grant agreements
- External review and evaluation of all outreach programs and products

Investment Strategy

Public-Private Partnership

Perimeter Institute exists through a cooperative and highly successful public-private approach to investment that provides for ongoing operations while, at the same time, safeguarding future opportunities.

Public partners contribute to research, training, and outreach activities and, in keeping with individual grant requirements, receive ongoing updates, reports, and yearly audited financial statements as required to ensure value for money while remaining aware of the Institute's research productivity and outreach impact.

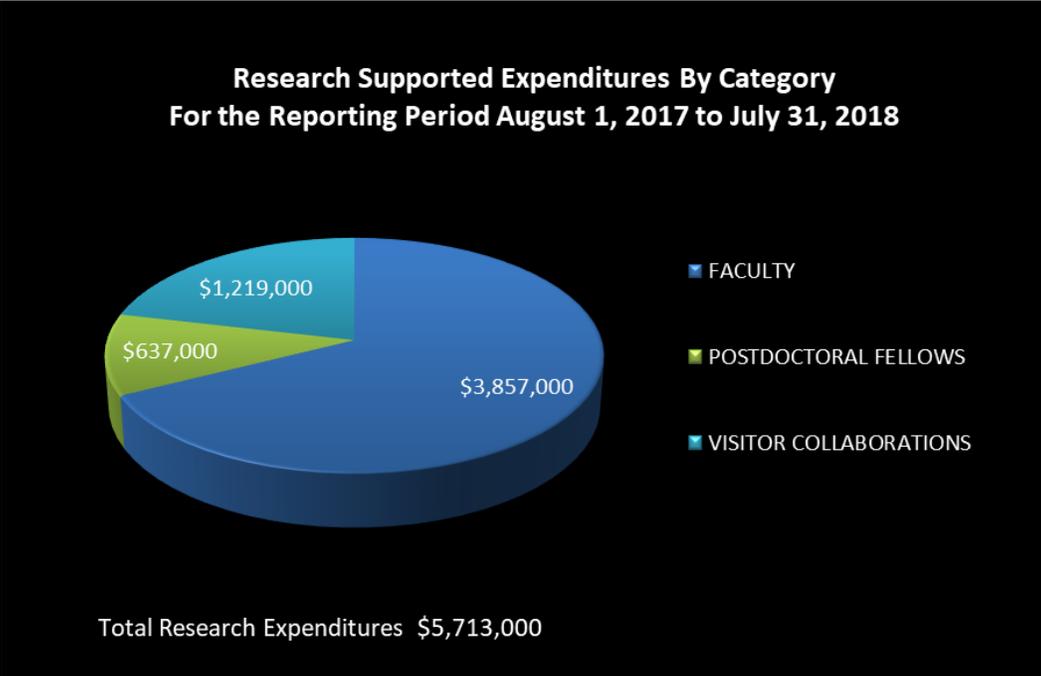
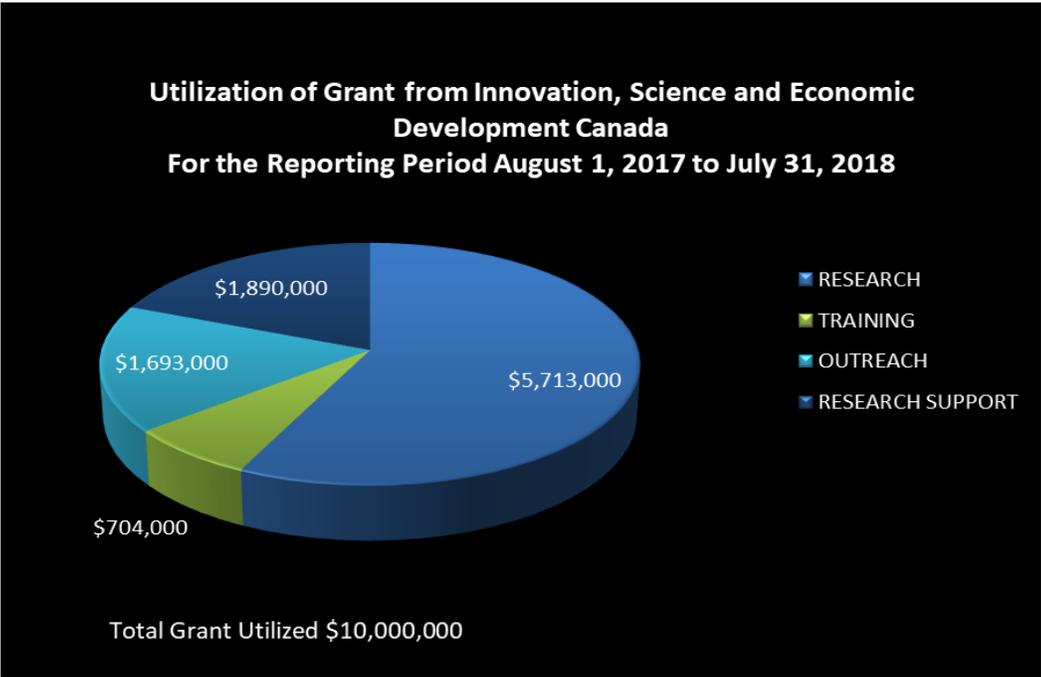
Private funds from a continuously growing donor base are used to fund operations and research, training, and outreach activities, while a portion is protected in an endowment that is primarily designed to receive and increase donated monies by maximizing growth and minimizing risk in order to contribute to the strongest possible long-term financial health of the Institute.

Perimeter Institute continues to be an innovative example of a public-private partnership, uniting government and philanthropists in a common quest to secure the transformative potential of scientific research in Canada.

Overview of Financial Statements, Expenditures, and Investment Strategy

For Perimeter's summary of operating costs and details about its income, financial position, and long-term plan, refer to **pages 46 and 47** of the Annual Report. For the Institute's audited financial statements and the report of the auditor on the audited financial statements, refer to **pages 48-50**.

Expenditure of Innovation, Science, and Economic Development Canada Grant



Objectives for 2017/18

For a statement of Perimeter's objectives for the coming year, refer to **page 51** of the Annual Report.

Appendix: Visiting Fellows

Haipeng An, Tsinghua University
Jonathan Barrett, University of Oxford
Joseph Ben Geloun, University of Paris 13
Eugenio Bianchi, Pennsylvania State University
Joseph Bramante, Queen's University
Fernando Brandão, California Institute of Technology
Vitor Cardoso, Instituto Superior Técnico
Simon Caron-Huot, McGill University
Juan Carrasquilla, Vector Institute for Artificial Intelligence
Giulio Chiribella, University of Oxford
Gil Young Cho, Korea Institute for Advanced Study
David Curtin, University of Maryland, College Park
Claudia de Rham, Imperial College London
Fay Dowker, Imperial College London
Sergei Dubovsky, New York University
Astrid Eichhorn, Heidelberg University
Glen Evenbly, University of Sherbrooke
Tobias Fritz, Max Planck Institute for Mathematics in the Sciences
Jerome Gauntlett, Imperial College London
Ruth Gregory, Durham University
Tarun Grover, University of California, San Diego
Razvan Gurau, École Polytechnique
Jutho Haegeman, Ghent University
Daniel Halpern-Leistner, Cornell University
Gilbert Holder, University of Illinois at Urbana-Champaign
Daniel Holz, University of Chicago
Zohar Komargodski, Weizmann Institute of Science
John Laiho, Syracuse University
Matthew Leifer, Chapman University
Si Li, Tsinghua University
Etera Livine, École Normale Supérieure de Lyon
Brian Metzger, Columbia University
Markus Mueller, Institute for Quantum Optics and Quantum Information
Belen Paredes, Ludwig Maximilian University of Munich/Arnold Sommerfeld Center for Theoretical Physics
Alejandro Perez, Aix-Marseille University

Katarzyna Rejzner, University of York
Rachel Rosen, Columbia University
Philip Schuster, Stanford University
Sarah Shandera, Pennsylvania State University
Kris Sigurdson, University of British Columbia
Brian Swingle, University of Maryland, College Park
Andrew Tolley, Imperial College London
Natalia Toro, Stanford University
Thomas Vidick, California Institute of Technology
Aaron Vincent, Queen's University
Chenjie Wang, City University of Hong Kong