

Frédéric Dupuis

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Personal information

- Birth: 29.08.1983 in Sept-Îles, Québec
- Citizenship: Canada
- Languages spoken: French (native), English (fluent), German (intermediate)

Academic Employment

University of Montreal <i>Assistant Professor, Department of Computer Science and Operations Research</i>	Montreal, Quebec <i>Aug 2019–</i>
CNRS, affiliated with the LORIA, Université de Lorraine <i>Chargé de recherche, classe normale (tenured researcher)</i> (on leave since Aug 2019)	Nancy, France <i>Oct 2017–</i>
Masaryk University <i>Assistant Professor, Faculty of Informatics</i>	Brno, Czech Republic <i>Jan 2017–Sept 2017</i>
Masaryk University <i>Scientific Researcher, Faculty of Informatics</i> (This is an entry-level permanent position.)	Brno, Czech Republic <i>Sept 2014–Dec 2016</i>
Aarhus University <i>Postdoctoral Researcher, Department of Computer Science</i> Group leader: Ivan Damgård	Aarhus, Denmark <i>Jan 2013–Aug 2014</i>
ETH Zürich <i>Postdoctoral Researcher, Institute for Theoretical Physics</i> Group leaders: Renato Renner and Matthias Christandl	Zürich, Switzerland <i>Jan 2010–Dec 2012</i>
University of Toronto <i>Research Assistant, Electrical Engineering department</i> Supervisor: Wei Yu	Toronto, Ontario <i>May 2005–Aug 2005</i>
University of Toronto <i>Research Assistant, Electrical Engineering department</i> Supervisor: Wei Yu	Toronto, Ontario <i>May 2004–Aug 2004</i>
University of Toronto <i>Research Assistant, Electrical Engineering department</i> Supervisor: Wei Yu	Toronto, Ontario <i>May 2003–Aug 2003</i>

Education

Université de Montréal <i>Ph.D. in Computer Science</i> Thesis title: <i>The decoupling approach to quantum information theory</i> Advisors: Gilles Brassard and Patrick Hayden (McGill University)	Montréal, Québec <i>Sept 2005–Dec 2009</i>
University of Toronto <i>B.A.Sc, Engineering Science, Electrical Engineering option</i> Fourth-year thesis title: <i>Optimizing the key generation rate in decoy state quantum cryptography</i> Advisor: Hoi-Kwong Lo	Toronto, Ontario <i>Sept 2001–May 2005</i>

Peer-reviewed journal articles

- [1] Frédéric Dupuis, Omar Fawzi, and Renato Renner. “Entropy accumulation.” In: *Communications in Mathematical Physics* (2020). DOI: 10.1007/s00220-020-03839-5. arXiv: 1607.01796.
- [2] Frédéric Dupuis and Omar Fawzi. “Entropy accumulation with improved second-order term.” In: *IEEE Transactions on Information Theory* 65.11 (Nov. 2019), pp. 7596–7612. DOI: 10.1109/TIT.2019.2929564. arXiv: 1805.11652. HAL Id: 01925985.
- [3] Rotem Arnon-Friedman, Frédéric Dupuis, Omar Fawzi, Renato Renner, and Thomas Vidick. “Practical device-independent quantum cryptography via entropy accumulation.” In: *Nature Communications* 9.459 (1 2018). DOI: 10.1038/s41467-017-02307-4. HAL Id: 01992050.
- [4] Christian Majenz, Mario Berta, Frédéric Dupuis, Renato Renner, and Matthias Christandl. “Catalytic decoupling of quantum information.” In: *Phys. Rev. Lett.* 118 (Feb. 2017), p. 080503. DOI: 10.1103/PhysRevLett.118.080503. arXiv: 1605.00514.
- [5] Frédéric Dupuis and Mark M. Wilde. “Swiveled Rényi entropies.” In: *Quantum Information Processing* (2016), pp. 1–37. DOI: 10.1007/s11128-015-1211-x. arXiv: 1506.00981.
- [6] Joseph M. Renes, David Sutter, Frédéric Dupuis, and Renato Renner. “Efficient quantum polar codes requiring no preshared entanglement.” In: *IEEE Transactions on Information Theory* 61.11 (Nov. 2015), pp. 6395–6414. DOI: 10.1109/TIT.2015.2468084. arXiv: 1307.1136.
- [7] Philippe Faist, Frédéric Dupuis, Jonathan Oppenheim, and Renato Renner. “The minimal work cost of information processing.” In: *Nature Communications* 7669 (July 2015). DOI: 10.1038/ncomms8669. arXiv: 1211.1037.
- [8] Frédéric Dupuis, Omar Fawzi, and Stephanie Wehner. “Entanglement sampling and applications.” In: *IEEE Transactions on Information Theory* 61.2 (Feb. 2015), pp. 1093–1112. DOI: 10.1109/TIT.2014.2371464. arXiv: 1305.1316.
- [9] Frédéric Dupuis. “Chain rules for quantum Rényi entropies.” In: *Journal of Mathematical Physics* 56.2, 022203 (2015). DOI: 10.1063/1.4907981. arXiv: 1410.5455.
- [10] Frédéric Dupuis, Mario Berta, Jürg Wullschleger, and Renato Renner. “One-shot decoupling.” In: *Communications in Mathematical Physics* 328.1 (Mar. 2014), pp. 251–284. DOI: 10.1007/s00220-014-1990-4. arXiv: 1012.6044.
- [11] Frédéric Dupuis, Oleg Szehr, and Marco Tomamichel. “A decoupling approach to classical data transmission over quantum channels.” In: *IEEE Transactions on Information Theory* 60.3 (Mar. 2014), pp. 1562–1572. DOI: 10.1109/TIT.2013.2295330. arXiv: 1207.0067.
- [12] Martin Müller-Lennert, Frédéric Dupuis, Oleg Szehr, Serge Fehr, and Marco Tomamichel. “On quantum Rényi entropies: a new generalization and some properties.” In: *Journal of Mathematical Physics* 54.12, 122203 (2013). DOI: 10.1063/1.4838856. arXiv: 1306.3142 [quant-ph].
- [13] Frédéric Dupuis, Jan Florjanczyk, Patrick Hayden, and Debbie Leung. “The locking-decoding frontier for generic dynamics.” In: *Proceedings of the Royal Society A* 469.2159 (2013). DOI: 10.1098/rspa.2013.0289. arXiv: 1011.1612.
- [14] Alexander Vitanov, Frédéric Dupuis, Marco Tomamichel, and Renato Renner. “Chain rules for smooth min- and max-entropies.” In: *IEEE Transactions on Information Theory* 59.5 (2013), pp. 2603–2612. DOI: 10.1109/TIT.2013.2238656. arXiv: 1205.5231.
- [15] Oleg Szehr, Frédéric Dupuis, Marco Tomamichel, and Renato Renner. “Decoupling with unitary approximate two-designs.” In: *New Journal of Physics* 15.5 (2013), p. 053022. DOI: 10.1088/1367-2630/15/5/053022. arXiv: 1109.4348.

- [16] Joseph M. Renes, Frédéric Dupuis, and Renato Renner. “Efficient Polar Coding of Quantum Information.” In: *Physical Review Letters* 109 (5 Aug. 2012), p. 050504. DOI: 10.1103/PhysRevLett.109.050504. arXiv: 1109.3195.
- [17] Simon Pierre Desrosiers and Frédéric Dupuis. “Quantum entropic security and approximate quantum encryption.” In: *IEEE Transactions on Information Theory* 56.7 (July 2010), pp. 3455–3464. DOI: 10.1109/TIT.2010.2048488. arXiv: 0707.0691.
- [18] Frédéric Dupuis, Patrick Hayden, and Ke Li. “A father protocol for quantum broadcast channels.” In: *IEEE Transactions on Information Theory* 56.6 (June 2010), pp. 2946–2956. DOI: 10.1109/TIT.2010.2046217. arXiv: quant-ph/0612155.
- [19] Frédéric Dupuis, Nicolas Gisin, Avinatan Hassidim, André Allan Méthot, and Haran Pilpel. “No nonlocal box is universal.” In: *Journal of Mathematical Physics* 48.8, 082107 (2007), p. 082107. DOI: 10.1063/1.2767538. arXiv: quant-ph/0701142.
- [20] Xiongfeng Ma, Fred Chi-Hang Fung, Frédéric Dupuis, Kai Chen, Kiyoshi Tamaki, and Hoi-Kwong Lo. “Decoy-state quantum key distribution with two-way classical postprocessing.” In: *Physical Review A* 74 (3 Sept. 2006), p. 032330. DOI: 10.1103/PhysRevA.74.032330. arXiv: quant-ph/0604094.

Peer-reviewed conference publications

- [1] Frédéric Dupuis, Ashutosh Goswami, Mehdi Mhalla, and Valentin Savin. “Purely Quantum Polar Codes.” In: *Proceedings of IEEE Information Theory Workshop*. 2019, pp. 1–5. arXiv: 1904.04713.
- [2] Frédéric Dupuis, Serge Fehr, Philippe Lamontagne, and Louis Salvail. “Secure Certification of Mixed Quantum States With Application To Two-Party Randomness Generation.” In: *Proceedings of Theory of Cryptography Conference (TCC)*. 2018, pp. 282–314. DOI: 10.1007/978-3-030-03810-6_11. arXiv: 1804.04730. HAL Id: 01926631.
- [3] Frédéric Dupuis, Serge Fehr, Philippe Lamontagne, and Louis Salvail. “Adaptive versus non-adaptive strategies in the quantum setting with applications.” In: *Proceedings of CRYPTO 2016*. 2016, pp. 33–59. DOI: 10.1007/978-3-662-53015-3_2. arXiv: 1607.08168.
- [4] Ivan Damgård, Frédéric Dupuis, and Jesper Buus Nielsen. “On the orthogonal vector problem and the feasibility of unconditionally secure leakage-resilient computation.” In: *Proceedings of ICITS 2015 (International Conference on Information-Theoretic Security)*. Full version available at <http://eprint.iacr.org/2014/282>. 2015, pp. 87–104. DOI: 10.1007/978-3-319-17470-9_6.
- [5] Frédéric Dupuis, Omar Fawzi, and Stephanie Wehner. “Achieving the limits of the noisy-storage model using entanglement sampling.” In: *Proceedings of CRYPTO 2013*. 2013, pp. 326–343. DOI: 10.1007/978-3-642-40084-1_19. Conference version of: “Entanglement sampling and applications in the journal papers section.”
- [6] David Sutter, Joseph M. Renes, Frédéric Dupuis, and Renato Renner. “Efficient quantum channel coding scheme requiring no preshared entanglement.” In: *Proceedings of the 2013 IEEE International Symposium on Information Theory*. July 2013, pp. 354–358. DOI: 10.1109/ISIT.2013.6620247. arXiv: 1307.1136.
- [7] Frédéric Dupuis, Jesper Buus Nielsen, and Louis Salvail. “Actively Secure Two-Party Evaluation of Any Quantum Operation.” In: *Proceedings of CRYPTO 2012*. Vol. 7417. Full version on IACR eprint archive: eprint.iacr.org/2012/304. 2012, pp. 794–811. DOI: 10.1007/978-3-642-32009-5_46.
- [8] Frédéric Dupuis, Lea Krämer, Philippe Faist, Joseph M. Renes, and Renato Renner. “Generalized entropies.” In: *Proceedings of the International Congress on Mathematical Physics*. World Scientific Publishing, Aug. 2012. arXiv: 1211.3141.

- [9] David Sutter, Joseph M. Renes, Frédéric Dupuis, and Renato Renner. "Achieving the capacity of any DMC using only polar codes." In: *Information Theory Workshop (ITW), 2012 IEEE*. Sept. 2012, pp. 114–118. DOI: 10.1109/ITW.2012.6404638. arXiv: 1205.3756.
- [10] Frédéric Dupuis, Jesper Buus Nielsen, and Louis Salvail. "Secure two-party quantum evaluation of unitaries against specious adversaries." In: *Proceedings of CRYPTO 2010*. Springer, 2010, pp. 685–706. DOI: 10.1007/978-3-642-14623-7_37.
- [11] Frédéric Dupuis. "The capacity of quantum channels with side information at the transmitter." In: *IEEE International Symposium on Information Theory*. June 2009, pp. 948–952. DOI: 10.1109/ISIT.2009.5205591. arXiv: 0805.3352.
- [12] Frédéric Dupuis, Wei Yu, and Frans M. J. Willems. "Blahut-Arimoto algorithms for computing channel capacity and rate-distortion with side information." In: *IEEE International Symposium on Information Theory*. June 2004, p. 179. DOI: 10.1109/ISIT.2004.1365218.

Peer-reviewed conference talks without proceedings

- [1] Frédéric Dupuis, Ashutosh Goswami, Mehdi Mhalla, and Valentin Savin. *Purely quantum polar codes*. QIP 2020 (Quantum Information Processing), Shenzhen, China.
- [2] Frédéric Dupuis, Serge Fehr, Philippe Lamontagne, and Louis Salvail. *Secure Certification of Mixed Quantum States With Application To Two-Party Randomness Generation*. CEQIP (Central European Quantum Information Processing) 2018 Conference, Smolenice, Slovakia. June 2018.
- [3] Rotem Arnon-Friedman, Frédéric Dupuis, Omar Fawzi, Renato Renner, and Thomas Vidick. *Entropy accumulation in device-independent protocols*. QIP 2017 (Quantum Information Processing), Seattle, WA.
- [4] Christian Majenz, Mario Berta, Frédéric Dupuis, Renato Renner, and Matthias Christandl. *Catalytic decoupling of quantum information*. QIP 2017 (Quantum Information Processing), Seattle, WA.
- [5] Frédéric Dupuis, Serge Fehr, Philippe Lamontagne, and Louis Salvail. *Adaptive versus non-adaptive strategies in the quantum setting with applications*. QCrypt 2016 Conference, Washington DC. 2016.
- [6] Ivan Damgård, Frédéric Dupuis, and Jesper Buus Nielsen. *A quantum protocol for the orthogonal vector problem and leakage-resilient computation*. QCrypt 2014 Conference, Paris, France, September 2014.
- [7] Joseph M. Renes, David Sutter, Frédéric Dupuis, and Renato Renner. *Efficient secret key distillation over quantum channels*. QCrypt 2014 Conference, Paris, France, September 2014.
- [8] Frédéric Dupuis, Omar Fawzi, and Stephanie Wehner. *Entanglement sampling and applications*. QIP 2014 (Quantum Information Processing), Barcelona, Spain, February 2014.
- [9] Frédéric Dupuis, Serge Fehr, Martin Müller-Lennert, Oleg Szehr, Marco Tomamichel, Mark Wilde, Andreas Winter, and Dong Yang. *A new quantum generalization of the Rényi divergence with applications to the strong converse in quantum channel coding*. QIP 2014 (Quantum Information Processing), Barcelona, Spain, February 2014.
- [10] Frédéric Dupuis, Omar Fawzi, and Stephanie Wehner. *Achieving the limits of the noisy-storage model using entanglement sampling*. QCrypt 2013 Conference, Waterloo, Ontario, August 2013.
- [11] Joseph M. Renes, Frédéric Dupuis, and Renato Renner. *Quantum polar coding*. QIP 2012 (Quantum Information Processing), Montréal, Québec, December 2011.
- [12] Frédéric Dupuis, Jan Florjanczyk, Patrick Hayden, and Debbie Leung. *The locking-decoding frontier for generic dynamics*. 6th Conference on Theory of Quantum Computation, Communication and Cryptography, Madrid, Spain, 24–26 May 2011.

- [13] Simon Pierre Desrosiers and Frédéric Dupuis. *Quantum entropic security and approximate quantum encryption*. QIP 2008 (Quantum Information Processing), New Delhi, India, December 2007.

Invited Talks

Conferences and Workshops

- *Device-independent quantum cryptography via entropy accumulation*, Invited speaker, Central European Quantum Information Processing (CEQIP) Workshop, Smolenice, Slovakia, May 31 to June 3 2017.
- *Entropy accumulation*, Invited speaker, “Beyond i.i.d. in information theory” Workshop, Barcelona, Spain, July 18 to 22, 2016.
- *Entropy accumulation*, Invited speaker, Workshop on Quantum Cryptography and Quantum Computation, Aarhus University, Aarhus, Denmark, October 19 to 22, 2015.
- *Chain rules for quantum Rényi entropies*, Invited speaker, “Beyond i.i.d. in information theory” Workshop, Banff International Research Station, Banff, Canada, July 5 to 10, 2015.
- *Quantum error correction and polar codes*, Invited speaker, “New Frontiers of Quantum Information Theory” Workshop, Ascoli-Piceno, Italy, July 7 to 11, 2014.
- *Bounding the uncertainty of constrained adversaries*, Invited speaker, Central European Quantum Information Processing (CEQIP) Workshop, Znojmo, Czech Republic, June 5 to 8 2014.
- *On quantum Rényi entropies: a new definition and some properties*, “Beyond i.i.d. in information theory” Workshop, Centre for Quantum Technologies, National University of Singapore, Singapore, May 19 to 21 2014.
- *Bounding the uncertainty of constrained adversaries*, INTRIQ (Institut transdisciplinaire d’information quantique) spring meeting, Bromont, Québec, May 6 and 7 2014.
- *A new definition for the quantum conditional Rényi entropy*, “New Mathematical Directions for Quantum Information” Workshop, Isaac Newton Institute for Mathematical Sciences, Cambridge, England, Sept 2–6 2013.
- *Quantum two-party computation*. Workshop on Cryptography, Bellairs Research Institute, Barbados, March 3 to 7, 2013. (6-hour lecture miniseries.)
- *Classical coding via dequantizing*. Workshop “Beyond iid in information theory”, Cambridge, England, January 8 to 11, 2013.
- *Efficient quantum polar coding*, Tsinghua-Aarhus CTIC Workshop on Quantum Information Science, Tsinghua University, Beijing, May 21, 2012.
- *Classical coding via decoupling*. Workshop “Quantum Information: Codes, Geometry and Random Structures” Centre de recherches mathématiques, Montréal, October 25, 2011.
- *Approximate quantum encryption and entropic security*. Invited speaker, Second QuantumWorks Annual General Meeting, Calgary, AB, September 26, 2007.
- *Introduction to quantum information theory*. Invited speaker, Workshop on One-Shot Quantum Information and Applications to Physics, Bellairs Research Institute, Barbados, March 12, 2007.
- *Practical Quantum Key Distribution with Decoy States*. Invited speaker, CIFAR Quantum Information Group Annual Meeting, Halifax, NS, June 2, 2005.

Seminars

- *Quantum cryptography with untrusted devices*, Colloquium of the School of Computer Science, McGill University, Montreal, Quebec, December 14, 2018.
- *Sampling mixed quantum states*, Quantum Information group seminar, Universitat Autònoma de Barcelona (UAB), Barcelona, Spain, May 11, 2018.

- *A quantum protocol for the orthogonal vector problem and leakage-resilient computation*, Quantum Information group seminar, Universitat Autònoma de Barcelona (UAB), Barcelona, Spain, October 29, 2014.
- *Bounding the uncertainty of constrained adversaries*, Cryptology group seminar, Centrum voor Wiskunde en Informatica (CWI), Amsterdam, Netherlands, July 4, 2014.
- *An introduction to “one-shot” quantum information theory*, Quantum information group seminar, Télécom Paris, Paris, France, April 29, 2014.
- *A tutorial on min- and max-entropies and their applications*, Quantum Information Seminar, Masaryk University, Brno, January 14, 2014.
- *Min-entropy sampling and cryptography in the bounded storage model*, Quantum Information Seminar, Leibniz-Universität Hannover, April 10, 2013.
- *Secure two-party quantum computation against specious adversaries*, Invited speaker, Colloquium of the Institute for Quantum Information, University of Waterloo, Waterloo, Ontario, March 21 2011.
- *The decoupling theorem*, Invited speaker, University of Bristol, October 2009.
- *The decoupling theorem*, Invited speaker, ETH Zürich, October 2009.
- *The decoupling theorem*, Invited speaker, National University of Singapore, September 2009.
- *Approximate quantum encryption and entropic security*. Invited speaker, Center for Quantum Information and Quantum Control, University of Toronto, October 26, 2007.

Pedagogical activities

- Teaching:
 - Lecturer, IFT6080 “Information Theory” Graduate course, Université de Montréal, Winter 2020.
 - Lecturer, IFT2105 “Introduction to Theoretical Computer Science” 2nd year undergraduate course, Université de Montréal, Fall 2019, Fall 2020.
 - Lecturer, “Models of Computation” masters level course at Université de Lorraine, Winter 2019. I taught the second half of the course, which was a 12-hour introduction to quantum information.
 - Seminar tutor, IV111 “Probability in Computer Science”, Masaryk University, Spring 2017.
 - Seminar tutor, PB071 “Principles of low-level programming”, Masaryk University, Spring 2017.
 - Seminar tutor, IB000 “Mathematical Foundations of Computer Science”, Masaryk University, Fall 2016.
 - Seminar tutor, MA015 “Graph Algorithms”, Masaryk University, Fall 2015 and 2016.
 - Seminar tutor, IB101 “Introduction to logic”, Masaryk University, Spring 2015 and 2016.
 - Seminar tutor, IA170 “Randomness and Communication”, Masaryk University, Fall 2015.
 - Seminar tutor, MA010 “Graph Theory”, Masaryk University, Fall 2014.
 - Lecturer, “Quantum Information Processing” course at Aarhus University, First and second quarter of 2013–2014. I taught the second half of the course, the first half was taught by Ivan Damgård.
 - Teaching Assistant, Course IFT2105 (Theoretical Computer Science), Université de Montréal, Fall 2008. Professor: Alain Tapp

- Student supervision:
 - Louis Lemonnier (Undergraduate research internship, ENS Paris-Saclay, 2018).
 - Luděk Matyska (Masters in Computer Science, Masaryk University, 2015–2016).
 - Martin Müller-Lennert (Masters in Mathematics, ETH Zürich, 2012–2013).
 - Emilio Onorati (Semester project and Masters in Physics, ETH Zürich, 2012–2013)
 - David Sutter (Masters in Electrical Engineering, ETH Zürich, 2012)
 - Richard Küng (Masters in Physics, ETH Zürich, 2012)
 - Alexander Vitanov (Masters in Physics, ETH Zürich, 2011)
 - Oleg Szehr (Semester project and Masters in Physics, ETH Zürich, 2010)
- Supervision of “Proseminar” projects, ETH Zürich. (This is a bachelors level class in which students must write a report and give an hour-long presentation on a particular topic in physics.)

Leadership, administration

- Program Committee chair:
 - QCrypt 2020, 10–14 August 2020, Amsterdam, Netherlands (*will take place online*)
- Program Committee member:
 - QIP 2019, 14–18 January 2019, Boulder, CO, USA
 - QCrypt 2018, 27–31 August 2018, Shanghai, China
 - ICITS (International Conference on Information Theoretic Security) 2017, 29 Nov–2 Dec 2017, Hong Kong, China
 - CEQIP (Central European Quantum Information Processing) 2017, 31 May–3 June 2017, Smolenice, Slovakia
 - TQC (Theory of Quantum Computation, Communication and Cryptography) 2016, 27–29 Sept 2016, Berlin, Germany
 - QCrypt 2016, 12–16 Sept 2016, Washington DC, USA
 - ICITS (International Conference on Information Theoretic Security) 2016, 9–12 August 2016, Tacoma WA, USA
 - CEQIP (Central European Quantum Information Processing) 2016, 16–19 June 2016, Valtice, Czech Republic
 - CEQIP (Central European Quantum Information Processing) 2015, 18–21 June 2015, Telč, Czech Republic
 - TQC (Theory of Quantum Computation, Communication and Cryptography) 2015, 20–22 May 2015, Brussels, Belgium
 - ICITS (International Conference on Information Theoretic Security) 2015, 2–5 May 2015, Lugano, Switzerland
 - CEQIP (Central European Quantum Information Processing) 2014, 5–8 June 2014, Znojmo, Czech Republic
 - QCrypt 2014, 1–5 September, 2014, Paris, France
 - QCrypt 2013, 5–9 August, 2013, Waterloo, Canada

- Organization of scientific events

- Organizer of the quantum information session at the International Symposium on Quantum Theory and Symmetries, Centre de recherches mathématiques, Montreal, Quebec, July 1–5 2019.
- Organizer (with Simon Perdrix) of the *Journées informatique quantique 2018* (workshop for quantum information students in France), LORIA, Nancy, France, November 8–9 2018.
- Organizer (with Sébastien Gambs) of the 2008 Canadian Quantum Information Students' Conference, Université de Montréal, June 16–20 2008.

Prizes and awards

Scholarships.....

- NSERC (Natural Sciences and Engineering Research Council of Canada) Postdoctoral Fellowship, January 2010–December 2011 (\$40000/year)
- NSERC Canada Graduate Scholarship–PhD Level, September 2006–September 2009 (\$35000/year)
- NSERC Canada Graduate Scholarship–Masters level, September 2005–September 2006 (\$17500)
- Marc-Bourgie Foundation Scholarship (\$10000), 2008–2009
- J.-Armand-Bombardier Scholarship (\$10000), 2007–2008
- Université de Montréal Admission Scholarship (\$10000)
- Stanford Graduate Fellowship (\$32300/year, declined), 2005
- Princeton University First Year Fellowship (\$30713/year, declined), 2005
- NSERC Undergraduate Research Scholarship, Summer 2003.

Prizes.....

- Bronze Medal, 2001 International Physics Olympiad, Antalya, Turkey
- Honorable Mention, 2000 International Physics Olympiad, Leicester, UK
- First place in Canada, 2001 Canadian Association of Physicists Prize Exam
- Sixth place in Canada, 2000 Canadian Association of Physicists Prize Exam