

# Douglas Robert Stinson

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## Personal

Date of birth: June 2, 1956

Place of birth: Guelph, Ontario, Canada

Canadian Citizen

Married, two children

## Education

BMath (Hon.), Combinatorics and Optimization and Pure Mathematics, University of Waterloo, 1978.

MSc, Mathematics, Ohio State University, 1980.

PhD, Combinatorics and Optimization, University of Waterloo, 1981. Thesis title: *Some classes of frames, and the spectra of skew Room squares and Howell designs*. PhD Advisor: R. Mullin.

## Academic Appointments

NSERC post-doctoral fellow, University of Manitoba, Department of Computer Science, 1981–1982.

Assistant professor (NSERC university research fellow), University of Manitoba, Department of Computer Science, 1982–1983.

Associate professor (NSERC university research fellow), University of Manitoba, Department of Computer Science, 1983–1986.

Full professor (NSERC university research fellow), University of Manitoba, Department of Computer Science, 1986–1991 (on leave, 1990–1991).

Full professor, University of Nebraska, Computer Science and Engineering Department, 1990–1998.

Full professor, University of Waterloo, Department of Combinatorics and Optimization, 1998–2002.

Full professor, University of Waterloo, David R. Cheriton School of Computer Science, 2002–2019.

Professor emeritus, University of Waterloo, David R. Cheriton School of Computer Science, 2019–.

Adjunct professor, University of Waterloo, David R. Cheriton School of Computer Science, 2019–2028.

Adjunct research professor, School of Mathematics and Statistics, Carleton University, 2022–2027.

## Awards and Recognition

*Honourable mention, Putnam Mathematics Competition, 1977.*

*University of Waterloo Alumni Gold Medal in Mathematics, 1978.*

*University of Waterloo Alumni PhD Gold Medal, 1981.*

*NSERC University Research Fellow, University of Manitoba, 1982–1989.*

*Rh Institute Award for Outstanding Contribution to Scholarship and Research in the Natural Sciences, University of Manitoba, 1985.*

*Foundation Fellow of the Institute of Combinatorics and its Applications, 1990.*

*1994 Hall Medal*, awarded by the Institute of Combinatorics and Its Applications. Hall Medals recognize extensive quality research with substantial international impact by Fellows of the ICA in mid-career.

*Visiting Professional Associate Award, University of Manitoba, 1996.*

*NSERC/Certicom Industrial Research Chair in Cryptography, University of Waterloo, 1998–2003.*

*Mathematics Faculty Fellowship, University of Waterloo, 2001–2004.*

*University Research Chair, University of Waterloo, 2005–2011.* The University of Waterloo recognizes exceptional achievement and pre-eminence in a particular field of knowledge through the designation “University Research Chair”, a title which may be held for up to seven years.

*Outstanding performance award* (for outstanding contribution in teaching and scholarship), University of Waterloo, 2005, 2008, 2013.

Elected and inducted as a *Fellow of the Royal Society of Canada*, 2011. Fellows are elected by their peers in recognition of outstanding scholarly, scientific and artistic achievement. Election to the academies of the Royal Society of Canada is the highest honour a scholar can achieve in the Arts, Humanities and Sciences.

Appointed as *University Professor, University of Waterloo*, 2013. The University of Waterloo recognizes exceptional scholarly achievement and international pre-eminence through the designation “University Professor”.

The conference *Stinson66 – New Advances in Designs, Codes and Cryptography* was held at the Fields Institute, Toronto, from June 13–17, 2022. The purpose of the conference was to celebrate my 66th birthday and highlight my contributions to the fields of designs, codes, cryptography, and their connections.

*2022 Stanton Medal*, awarded by the Institute of Combinatorics and Its Applications. Stanton Medals honour significant lifetime contributions to promoting the discipline of combinatorics through advocacy, outreach, service, teaching and/or mentoring.

*2024 CS-Can | Info-Can Lifetime Achievement Award (LTA) in Computer Science.* These awards presented by CS-Can|Info-Can recognize faculty members in Canadian Computer Science Departments/ Schools/ Faculties who have made outstanding and sustained contributions to Canadian computing over the duration of their careers.

## Supervision

### *Postdoctoral Fellows*

1. Guang Gong, 1998, University of Waterloo.
2. Ruizhong Wei, 1998–2000, University of Waterloo.
3. Yongge Wang, 1999–2000, University of Waterloo.
4. Palash Sarkar, 2000–2001, University of Waterloo.
5. Mark Chateauneuf, 2000–2001, University of Waterloo.
6. Paolo D’Arco, 2001–2002, University of Waterloo.
7. Dameng Deng, 2003–2004, University of Waterloo.
8. Mridul Nandi, 2006–2007, University of Waterloo.
9. Maura Paterson, 2008, visiting Post-Doc from Royal Holloway.
10. Noman Mohammed, 2012, University of Waterloo.
11. Souradyuti Paul, 2013, University of Waterloo.
12. Navid Nasr Esfahani, 2021–2022, University of Waterloo.

### *PhD Students*

1. Eric Seah, PhD, 1987 (CS, University of Manitoba). Thesis title: *On the enumeration of one-factorizations and Howell designs using orderly algorithms.*
2. Demeng Chen, PhD, 1994 (CS, University of Manitoba, co-supervised with R. Stanton). Thesis title: *Large sets of disjoint packings and large sets of disjoint GDDs.*
3. K. Gopalakrishnan, PhD, 1994 (CSE, University of Nebraska). Thesis title: *A study of correlation-immune, resilient and related cryptographic functions.*
4. Mustafa Atici, PhD, 1996, (CSE, University of Nebraska). Thesis title: *Hash functions: recursive constructions and applications to cryptography.*
5. Ruizhong Wei, PhD, 1998, (Math, University of Nebraska). Thesis title: *Traceability schemes, frameproof codes, key distribution patterns and related topics – a combinatorial approach.*
6. Khoongming Khoo, PhD, 2004 (C&O, University of Waterloo, co-supervised with G. Gong). Thesis title: *Sequence design and construction of cryptographic boolean functions.*
7. James Muir, PhD, 2005 (C&O, University of Waterloo). Thesis title: *Efficient integer representations for cryptographic operations.*
8. Jooyoung Lee, PhD, 2005 (C&O, University of Waterloo). Thesis title: *Combinatorial approaches to key predistribution for distributed sensor networks.*
9. Jason Hinek, PhD, 2007 (SCS, University of Waterloo, co-supervised with M. Giesbrecht). Thesis title: *On the security of some variants of RSA.*
10. Atefeh Mashatan, PhD, 2009 (C&O, University of Waterloo). Thesis title: *Message authentication and recognition protocols using two-channel cryptography.*

11. Jiang Wu, PhD, 2009 (SCS, University of Waterloo). Thesis title: *Cryptographic protocols, sensor network key management, and RFID authentication.*
12. Greg Zaverucha, PhD, 2011 (SCS, University of Waterloo). Thesis title: *Hash families and cover-free families with cryptographic applications.*
13. Mehrdad Nojoumian, PhD, 2012 (SCS, University of Waterloo). Thesis title: *Novel secret sharing and commitment schemes for cryptographic applications.*
14. Colleen Swanson, PhD, 2013 (SCS, University of Waterloo). Thesis title: *Unconditionally secure cryptography: signature schemes, user-private information retrieval, and the generalized Russian cards problem.*
15. Kevin Henry, PhD, 2015 (SCS, University of Waterloo). Thesis title: *Secure protocols for key pre-distribution, network discovery, and aggregation in wireless sensor networks.*
16. Jalaj Upadhyay, PhD, 2015 (SCS, University of Waterloo). Thesis title: *Integrity and privacy of large data.*
17. Navid Nasr Esfahani, SCS, PhD 2021 (SCS, University of Waterloo). Thesis title: *Generalizations of all-or-nothing transforms and their application in secure distributed storage.*

### *Masters Students*

1. Wendy White, MSc, 1990 (CS, University of Manitoba). Thesis title: *The construction and implementation of authentication and secrecy codes.*
2. Mustafa Atici, MSc, 1994 (CSE, University of Nebraska). Thesis title: *Optimal information and average information rates of the connected graphs on six vertices.*
3. Sharon Lim, MSc, 1996 (CSE, University of Nebraska). Thesis title: *A "C" implementation of two classes of authentication codes.*
4. Phil Eisen, MMath, 1999 (C&O, University of Waterloo). Thesis title: *Threshold visual cryptography schemes.*
5. Jason Chen, MMath, 2000 (C&O, University of Waterloo). Thesis title: *A survey on traitor tracing schemes.*
6. James Muir, MMath, 2001 (C&O, University of Waterloo). Thesis title: *Techniques of side channel cryptanalysis.*
7. Kyung-Mi Kim, MMath, 2003 (C&O, University of Waterloo). Thesis title: *Perfect hash families: constructions and applications.*
8. Hao-Hsien Wang, MMath, 2005 (SCS, University of Waterloo). Thesis title: *Desired features and design methodologies of secure authenticated key exchange protocols in the public-key infrastructure setting.*
9. Kar-Yee Au, MMath, 2005 (SCS, University of Waterloo). Thesis title: *Unconditionally secure authentication codes and digital signatures.*
10. Sheng Zhang, MMath, 2005 (SCS, University of Waterloo). Thesis title: *Algorithms for detecting cheaters in threshold schemes.*
11. Jiayuan Sui, MMath, 2008 (SCS, University of Waterloo). Thesis title: *A security analysis of some physical content distribution systems.*

12. Kevin Henry, MMath, 2008 (SCS, University of Waterloo). Thesis title: *The theory and applications of homomorphic cryptography*.
13. Jalaj Upadhyay, MMath, 2011 (SCS, University of Waterloo). Thesis title: *Generic attacks on hash functions*.
14. Chuan Guo, SCS, MMath, 2015 (SCS, University of Waterloo). Thesis title: *Fingerprinting codes and related combinatorial structures*.
15. Bailey Kacsmar, SCS, MMath, 2018 (SCS, University of Waterloo). Thesis title: *Designing efficient algorithms for combinatorial repairable threshold schemes*.
16. Shannon Veitch, SCS, MMath, 2022 (SCS, University of Waterloo). Thesis title: *Contextualizing alternative models of secret sharing*.

### *Undergraduate Research Assistants*

1. Shannon Veitch, 2018, 2019.

### PhD Thesis External Examiner

- R. Rees, Queen's University, 1986. Thesis title: *On certain  $(1, 2)$ -factorizations of the complete graph*.
- S. Furino, University of Waterloo, 1989. Thesis title:  *$\alpha$ -resolvable structures*.
- M. Yu, Simon Fraser University, 1990. Thesis title: *Tree decompositions of complete graphs*.
- I. Bluskov, Simon Fraser University, 1997. Thesis title: *New designs and coverings*.
- I. Adamczak, Michigan Technological University, 2003. Thesis title: *Tight incomplete block designs*.
- L. Keliher, Queen's University, 2003. Thesis title: *Linear cryptanalysis of substitution-permutation networks*.
- K. C. Gupta, Indian Statistical Institute, 2004. Thesis title: *Cryptographic and combinatorial properties of boolean functions and S-boxes*.
- E.-Y. C. Park, University of Toronto, 2007. Thesis title: *Combinatorial techniques for key distribution and information storage*.
- L. Howard, University of Victoria, 2009. Thesis title: *Nets of order  $4m + 2$ : linear dependence and dimensions of codes*.
- P. Wang, University of Calgary, 2015. Thesis title: *Secure communication over adversarial channel*.
- H. T. Poon, Ryerson University, 2018. Thesis title: *Theory and application of encrypted sequential data processing: search and computation*.
- Thaís Bardini Idalino, University of Ottawa, 2019. Thesis title: *Fault tolerance in cryptographic applications using cover-free families*.

## Editorial Work

Member of editorial board of *Journal of Combinatorial Mathematics and Combinatorial Computing*, 1987–2019.

Member of editorial board of *Designs, Codes and Cryptography*, 1990–1998.

Editor-in-chief, *Journal of Combinatorial Designs*, 1993–2002.

Member of editorial board of *Journal of Cryptology*, 1993–1997.

Advisory editor for *CRC Handbook of Combinatorial Designs*, C. J. Colbourn and J. H. Dinitz (eds.), CRC Press, 1996.

Member of editorial board of *Aequationes Mathematicae*, 1996–2001.

Associate editor for complexity and cryptography, *IEEE Transactions on Information Theory*, 1997–1999.

Guest editor, (with Charlie Colbourn and John van Rees), special volume of *Designs, Codes and Cryptography* in honour of Ron Mullin, 2002.

Member of editorial board of *Advances in Mathematics of Communications*, 2006–2012.

Associate editor of *Discrete Mathematics*, 2007–2012; member of editorial board, 2013–.

Member of editorial board of *Journal of Combinatorial Designs*, 2003–2023; honorary editor, 2023–.

Series editor, *Chapman & Hall/CRC Cryptography and Network Security Series*, 2004–.

Member of editorial board of *Contributions to Discrete Mathematics*, 2005–2019.

Member of editorial board of *IET Information Security*, 2005–2013.

Member of editorial board of *Journal of Mathematical Cryptology*, 2006–2019.

Guest editor, (with Ian Blake and Alfred Menezes), special volume of *Designs, Codes and Cryptography* in memory of Scott Vanstone, 2015.

Member of editorial board of *Bulletin of the ICA*, 2024–.

## External Service (Selected)

Member of NSERC (Canada) Mathematics Grant Selection Committee, 1993–1996.

Member of NSERC (Canada) scientific evaluation committee for the *Pacific Institute for the Mathematical Sciences*, 1996.

Member of the *Canadian Mathematics Society Research Committee*, 2000–2003 (chair, 2001–2002).

Member of the *Selected Areas in Cryptography Organizing Board*, 2000–2014 (chair, 2000–2007).

Member of the Corporation of the *Fields Institute*, 2004–2006.

Member of the Scientific Advisory Board of the *Banff International Research Station*, 2005–2008.

President of the *Institute of Combinatorics and its Applications*, 2016–2022.

## Invited Talks (Selected)

*Tenth Australian Conference on Combinatorial Mathematics*, Adelaide, Australia, August 1982, invited one-hour talk.

*Canadian Mathematics Society Summer Meeting*, Vancouver, June 1983.

*NSERC Summer Workshop on Latin Squares and their Application*, Vancouver, July–August 1983.

*AMS Meeting, Special session on finite geometries and combinatorial designs*, Lincoln, Nebraska, November 1987.

*First Auburn Combinatorics Conference*, Auburn, Alabama, March 1988, two invited one-hour talks.

*Institute For Mathematics and its Applications Workshop on Design Theory and Applications*, Minneapolis, June 1988.

*Fifteenth Australasian Conference on Combinatorial Mathematics and Combinatorial Computing*, Brisbane, Australia, July 1989, invited one-hour talk.

*Fourth Carbondale Combinatorics Conference*, Carbondale, Illinois, November 1989, invited one-hour talk.

*23rd Southeastern International Conference on Combinatorics, Graph Theory and Computing*, Boca Raton, Florida, February 1992, two invited one-hour talks (designated I.C.A. lecturer).

*Waterloo 92*, Waterloo, Ontario, June 1992, invited one-hour talk (plenary speaker).

*Sixth Cumberland Conference on Graph Theory and Computing*, Memphis, May 1993, invited 50-minute talk (featured speaker).

*Fourteenth British Combinatorial Conference*, University of Keele, UK, July 1993, invited one-hour talk.

*Sixth Vermont Summer Workshop on Combinatorics*, Burlington, Vermont, June 1994, invited one-hour talk.

*Second Workshop on Selected Areas in Cryptography*, Ottawa, May 1995, invited 45-minute talk.

*R. C. Bose Memorial Conference*, Fort Collins, Colorado, June 1995.

*25th Manitoba Conference on Combinatorial Mathematics and Computing*, Winnipeg, September 1995, invited one-hour talk.

*Security in Communication Networks*, Amalfi, Italy, September 1996, invited 50-minute talk.

*Public Key Solutions 1997*, Toronto, April 1997, invited 45-minute talk.

*Canadian Mathematics Society 1997 Summer Meeting, Symposium on Finite Geometries and Applications*, Winnipeg, June 1997, invited 50-minute talk.

*Public Key Solutions 1998*, Toronto, April 1998, invited 30-minute talk.

*Ninth SIAM Conference on Discrete Mathematics*, Toronto, July 1998, invited one-hour talk.

*Winnipeg Combinatorial Mathematics Conference*, Winnipeg, September 1998, two invited one-hour talks.

*Workshop on Combinatorics and Communications Applications*, Royal Holloway, UK, April 1999, invited one-hour talk.

*Tenth Postgraduate Combinatorial Conference*, Royal Holloway, UK, April 1999, invited one-hour talk.

*Twelfth Cumberland Conference on Combinatorics, Graph Theory and Computing*, Louisville, Kentucky, May 1999, invited 50-minute talk (principal speaker).

*Canadian Mathematics Society 1999 Summer Meeting*, St. John's, Newfoundland, May 1999, invited one-hour talk (plenary speaker).

*Canadian Mathematics Society 2000 Summer Meeting*, Hamilton, June 2000, Session on *Cryptography and Number Theory*.

*Tenth SIAM Conference on Discrete Mathematics*, Minneapolis, June 2000, Minisymposium on *Applications of Combinatorial Designs to Computing and Communications*.

*Fourteenth Midwestern Conference on Combinatorics, Cryptography and Computing*, Wichita, Kansas, October 2000, invited one-hour talk.

*Second Lethbridge Workshop on Designs, Codes, Cryptography and Graph Theory*, Lethbridge, Alberta, July 2001, three invited one-hour talks (main speaker).

*Thirty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, Boca Raton, Florida, March 2002, two invited one-hour talks.

*Atlantic Association for Research in the Mathematical Sciences (AARMS) Summer School*, St. John's, Newfoundland, August 2002, invited one-hour public lecture.

*AARMS Workshop on Combinatorial Designs and Related Topics*, St. John's, Newfoundland, July 2003, invited one-hour talk (main speaker).

*Cryptography Short Course, Canadian Mathematics Society Winter Meeting*, Vancouver, December 2003, invited one-hour talk.

*IEEE Wireless Communications and Networking Conference*, New Orleans, April 2005, invited talk (special session on wireless security).

*Nineteenth Midwestern Conference on Combinatorics, Cryptography and Computing*, Rochester, NY, October 2005, invited one-hour talk.

*Fields Institute Workshop on Covering Arrays: Constructions, Applications and Generalizations*, Ottawa, May 2006, invited 90-minute tutorial.

*SIAM Conference on Discrete Mathematics*, Victoria, June 2006, Minisymposium on *Design Theory*.

*Workshop on Cryptography: Underlying Mathematics, Provability and Foundations*, Toronto, November, 2006, invited 50-minute talk.

*1st Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2007)*, Banff, May 2007, Minisymposium on *Combinatorial Designs*.

*CMS-MITACS Joint Conference (Canadian Mathematics Society Summer Meeting)*, Winnipeg, June 2007, Session on *Finite Combinatorics*.

*Information Systems Security Colloquium (ISS 2008)*, Concordia University, Montréal, May 2008, invited one-hour talk.

*SIAM Conference on Discrete Mathematics*, Burlington, June 2008, Minisymposium on *Cryptography*.

*Fields Institute Workshop on New Directions in Cryptography*, Ottawa, June 2008, invited one-hour talk.

*Information Security in a Quantum World*, Institute for Quantum Computing, Waterloo, August 2008, two invited 50-minute lectures.



*Centre for Information Security and Cryptography*, University of Calgary, Distinguished Lecture Series, October, 2008, invited one-hour talk.

*22nd Midwestern Conference on Combinatorics, Cryptography and Computing*, Las Vegas, October 2008, invited one-hour talk (keynote speaker).

*Cryptology, Designs and Finite Groups 2009*, Deerfield Beach, Florida, May 2009, invited one-hour talk (plenary speaker).

*2nd Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2009)*, Montréal, May 2009, Minisymposium on *Combinatorial Design Theory*.

*Combinatorial Configurations and their Applications (CCA 2009)*, Houghton, Michigan, August 2009, two invited one-hour talks.

*Fourth Pythagorean Conference (An Advanced Research Workshop in Geometry, Combinatorial Designs & Cryptology)*, Corfu, Greece, May 2010, invited one-hour talk (plenary speaker).

*Canadian Mathematics Society Winter Meeting*, Vancouver, December 2010, Session on *Theory and Application of Sequences and Arrays*.

*Linear Algebraic Techniques in Combinatorics/Graph Theory*, Banff International Research Station for Mathematical Innovation and Discovery, February, 2011, invited 45-minute talk.

*3rd Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2011)*, Victoria, June 2011, Minisymposium on *Designs and Codes*.

*Ninth Annual Conference on Privacy, Security and Trust (PST 2011)*, Concordia University, Montréal, July 2011, invited one-hour talk (keynote speaker).

*QKD Summer School 2011*, Institute for Quantum Computing, Waterloo, July 2011, three hours of lectures on *Information-theoretic Cryptography*.

*New Fellows Presentations*, Royal Society of Canada Annual Conference, Ottawa, November 2011, invited 20-minute talk.

*Forty-third Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, Boca Raton, Florida, March 2012, two invited one-hour talks.

*WilsonFest*, Pasadena, California, March 2012, invited 50-minute talk (featured speaker).

*SIAM Conference on Discrete Mathematics*, Halifax, June 2012, Minisymposium on *Design Theory*.

*5th International Symposium on Foundations & Practice of Security (FPS 2012)*, Montréal, October 2012, one-hour keynote talk.

*4th Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2013)*, St. John's, June 2013, Minisymposium speaker: Eric Mendelsohn: *Colleagues and Descendants*.

*QKD Summer School 2013*, Institute for Quantum Computing, Waterloo, July 2013, three hours of lectures on *Information-theoretic Cryptography*.

*Selected Areas in Cryptography (SAC 2013)*, Burnaby BC, August 2013, 20th anniversary distinguished speaker, 90-minute talk.

*Distinguished Lecture*, University of North Carolina at Charlotte, College of Computing and Informatics, April 2014.

*Workshop on Algebraic Design Theory and Hadamard Matrices (ADTHM 2014)*, Lethbridge, Alberta, July 2014, invited 50-minute talk (plenary speaker).

*QKD Summer School 2015*, Institute for Quantum Computing, Waterloo, July 2015, three hours of lectures on *Information-theoretic Cryptography*.

*29th Midwestern Conference on Combinatorics and Combinatorial Computing*, Charleston, October 2015, invited one-hour talk (keynote speaker).

*Forty-eighth Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, Boca Raton, Florida, March 2017, invited one-hour talk (plenary speaker).

*6th Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2017)*, Toronto, June 2017, invited speaker in the minisymposium *In Honour of the Work of Alex Rosa*.

*Alex Rosa 80*, Mikulov, Czech Republic, June 2017, invited participant and speaker.

*QKD Summer School 2017*, Institute for Quantum Computing, Waterloo, July 2015, six hours of lectures on *Fundamentals of Cryptography and Information-theoretic Cryptography*.

*Canadian Mathematics Society Winter Meeting*, Waterloo, December 2017, Session on *Design Theory*.

*Combinatorics 2018*, Arco, Italy, June 2018, plenary speaker, invited 50-minute talk.

*Conference on Combinatorics and its Applications In Celebration of Charlie Colbourn's 65th Birthday*, Singapore, July 2018, keynote speaker, invited 50-minute talk.

*7th Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2019)*, Vancouver, May 2019, invited speaker in the minisymposium on *Design Theory*.

*ArasuFest*, Kalamata, Greece, August 2019, invited 45-minute talk.

*Selected Areas in Cryptography (SAC 2019)*, Waterloo, August 2019, invited speaker, 50-minute talk.

*QKD Summer School 2019*, Institute for Quantum Computing, Waterloo, August 2019, three hours of lectures on *Information-theoretic Cryptography*.

*8th Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2021)* (online), May 2021, invited speaker in the minisymposium on *Practical Applications of Design Theory*.

*CMS 75th+1 Anniversary Summer Meeting* (online), June 2021, invited speaker in the session on *Graph Decompositions*.

*28th British Combinatorial Conference* (online), July 2021, invited speaker in the minisymposium on *Codes and Cryptography*.

*CMS Winter Meeting* (online), December 2021, invited speaker in the session on *Mathematics of Digital Communication*.

*Ontario Combinatorics Workshop*, University of Ottawa, May 2023, plenary speaker.

*9th Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2023)*, Winnipeg, June 2023, invited speaker in the minisymposium on *Design Theory and Coding Theory*.

*Selected Areas in Cryptography (SAC 2023)*, Fredericton, August 2023, I delivered the Stafford Tavares lecture, an invited 50-minute talk.

*CRM / UOttawa Distinguished Colloquium*, Ottawa, November 2023.

*Fifty-fifth Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, Boca Raton, Florida, March 2024, invited one-hour talk (plenary speaker).

*CMS Winter Meeting*, December 2024, Richmond, BC, invited speaker in the session on *Combinatorial Designs*.

*10th Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2025)*, Ottawa, May 2025, invited speaker in two minisymposiums: *How Many? The Art and Craft of Counting* and *Combinatorial Designs and Graph Decompositions*.

*Selected Areas in Cryptography (SAC 2025) Summer School*, Toronto, August 2025,  $2\frac{3}{4}$  hour invited tutorial.

## Research Grants

NSERC operating grant (Pure and Applied Mathematics), 1982–1985, \$15,865.

NSERC operating grant (Computing and Information Sciences), 1985–1987, \$35,200.

NSERC operating grant (Computing and Information Sciences), 1987–1990, \$95,700.

NSERC operating grant (Computing and Information Sciences), 1990–1992, \$63,800, *Cryptographic Protocols, Combinatorial Designs, and Fast Computation in Finite Fields*.

NSF (Computer and Computation Research, Theory of Computing), 1992–1994, \$76,574 (plus \$5,000 matching funds from the Center for Communication and Information Science, University of Nebraska), *Combinatorial Cryptography*.

NSA (Mathematical Sciences Program), 1993–1995, \$84,000 (plus \$21,000 matching funds from the Center for Communication and Information Science, University of Nebraska), *Combinatorial Designs*, joint grant with E. Kramer and S. Magliveras.

NSF (Computer and Computation Research, Theory of Computing), 1994–1997, \$95,868 (plus \$23,732 matching funds from the Center for Communication and Information Science, University of Nebraska), *Combinatorial Cryptography*.

NSA (Mathematical Sciences Program), 1996–1997, \$40,000 (plus \$11,300 matching funds from the Center for Communication and Information Science, University of Nebraska), *Designs and Other Combinatorial Problems*, joint grant with E. Kramer and S. Magliveras.

University of Nebraska Foundation, 1997, \$96,972, *Electronic Commerce Systems Laboratory*, joint grant with 13 others.

NSF (Computer and Computation Research, Theory of Computing), 1997–1998, \$95,316 (plus \$6,354 matching funds from the Center for Communication and Information Science, University of Nebraska), *Topics in Unconditionally Secure Cryptography*.

NSERC research grant (Computing and Information Sciences), 1998–2002, \$164,340, *Applications of Combinatorial Designs to Computer Science*.

NSERC/Certicom research grant (industrial research chair), 1998–2003, \$357,500, *Unconditionally Secure Cryptography*.

CITO, 1998–2000, \$220,000, *Information Security Technology and Applied Cryptography*, joint grant with G. Agnew, A. Hasan, A. Menezes and S. Vanstone.

MITACS, 1999–2000, \$206,000, *Applied Cryptography*, co-principal investigator (with S. Vanstone).

ORDCF, 1999–2004, \$827,500, *Centre for Applied Cryptographic Research*, co-principal investigator (with S. Vanstone).

MITACS, 2000–2001, \$130,000, *Applied Cryptography*, co-principal investigator (with S. Vanstone).

CITO, 2000–2002, \$200,000, *Information Security Technology and Applied Cryptography*, joint grant with G. Agnew, A. Hasan, A. Menezes, M. Mosca and S. Vanstone.

NSERC discovery grant (Computing and Information Sciences - B), 2002–2006, \$184,000, *Topics in Cryptography*.

Open Text, 2004–2007, \$60,000, *Data Security*, joint grant with G. Gong, A. Hasan and A. Menezes.

NSERC discovery grant (Computing and Information Sciences - B), 2006–2011, \$250,000, *Topics in Cryptography*.

NSERC collaborative research and development grant, 2007–2008, \$25391, joint grant with G. Gong, A. Hasan and A. Menezes.

MITACS, 2008–2010, \$240,000, *Useful Privacy-Enhancing Technologies* joint grant with R. Safavi-Naini, I. Goldberg (co-PIs) and 7 others.

NSERC Strategic Project, 2009–2012, \$450,000, *Computer and Communication Platform Security and Content Protection* joint grant with G. Gong, A. Hasan and A. Menezes.

MITACS, 2010–2012, \$240,000, *Useful Privacy-Enhancing Technologies* joint grant with R. Safavi-Naini, I. Goldberg (co-PIs) and 7 others.

NSERC discovery grant (Computing and Information Sciences - B), 2011–2016, \$245,000, *Cryptography and Cryptographic Protocols*.

NSERC CREATE grant, 2012–2017, \$1,650,000, *Building a Workforce for the Cryptographic Infrastructure of the 21st Century*, joint grant with M. Mosca (PI) and 7 others.

NSERC discovery grant (Computer Science), 2016–2025, \$316,000, *Unconditionally Secure Cryptography*.

NSERC General Research Funds (GRF), University of Waterloo, 2025–2026, \$15,375.

## Publications

### Books

1. D. R. Stinson. *An Introduction to the Design and Analysis of Algorithms*. Charles Babbage Research Centre, Winnipeg, Manitoba, 1985 (second edition, 1987), 213 pp.
2. J. H. Dinitz and D. R. Stinson (eds.). *Contemporary Design Theory: A Collection of Surveys*. John Wiley & Sons, New York, 1992, 639 pp.
3. D. R. Stinson (ed.). *Advances in Cryptology – CRYPTO '93 Proceedings*. Lecture Notes in Computer Science, vol. 773. Springer-Verlag, Berlin, 1994, 492 pp.
4. D. R. Stinson. *Cryptography: Theory and Practice*. CRC Press, Inc., Boca Raton, 1995, 434 pp.
5. D. L. Kreher and D. R. Stinson. *Combinatorial Algorithms: Generation, Enumeration & Search*. CRC Press, Inc., Boca Raton, 1999, 329 pp.

6. D. R. Stinson and S. Tavares (eds.). *Selected Areas in Cryptography – SAC 2000 Proceedings*. Lecture Notes in Computer Science, vol. 2012. Springer-Verlag, Berlin, 2001, 339 pp.
7. D. R. Stinson. *Cryptography: Theory and Practice, Second Edition*. Chapman & Hall/CRC, Boca Raton, 2002, 339 pp.
8. D. R. Stinson. *Combinatorial Designs: Constructions and Analysis*. Springer-Verlag, New York, 2004, 316 pp.
9. D. R. Stinson. *Cryptography: Theory and Practice, Third Edition*. Chapman & Hall/CRC, Boca Raton, 2006, 616 pp.
10. A. Biryukov, G. Gong and D. R. Stinson (eds.). *Selected Areas in Cryptography – SAC 2010 Proceedings*. Lecture Notes in Computer Science, vol. 6544. Springer-Verlag, Berlin, 2011.
11. D. R. Stinson and M. B. Paterson. *Cryptography: Theory and Practice, Fourth Edition*. Chapman & Hall/CRC, Boca Raton, 2018, 580 pp.
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