Antonina Kolokolova

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Research Interests

Complexity theory, algorithms, proof complexity and logic; SAT/SMT; machine learning, computational learning theory; knowledge compilation; computational neuroscience.

Education

Ph.D. Computer Science: University of Toronto, 2005
Supervisor: Stephen A. Cook
Thesis: *Theories of arithmetic from descriptive complexity*

M.Sc. Computer Science: University of Toronto, 2000
Supervisor: Stephen A. Cook
Thesis: *V-Horn: a Horn-based second-order theory of arithmetic*

B. Sc. Computer Science and Mathematics: University of Arizona, 1998.
Honours in Computer Science on proof complexity, supervised by T. Pitassi.
Honours in Mathematics on dynamical systems, supervised by W. Schaffer.

Academic employment

Sep 2015 – now	Associate professor	Department of Computer Science
Jul 2007 – Aug 2015	Assistant professor	Memorial University of Newfoundland
Jan 2005 – May 2007	PIMS Postdoctoral Fellow	School of Computing Science Simon Fraser University
May 2005 – Aug 2005 Sep 2004 – Dec 2004	Visiting scientist	Mathematical Institute AV CZ Prague, Czech Republic

Awards

Best paper award	Computational Complexity Conference	2016
Best Professor award	Computer Science Graduate Society	2018-2019
Teaching Excellence award	MUN Computer Science Society	2017-2018
Teaching Excellence award	MUN Computer Science Society	2014-2015

Invited special programs and long-term visits

Jan-May 2018	Simons Institute for the Theory of Computing (Berkeley, USA) *Satisfiability: theory, practice and beyond*
Sep'19-Aug'20	Simon Fraser University (Burnaby, BC, Canada), visiting faculty.
Aug-Dec 2018	Simons Institute for the Theory of Computing (Berkeley, USA) *Lower bounds*
Jan-May 2018	Simons Institute for the Theory of Computing (Berkeley, USA) *Brain and computation*
Jan-July 2016	University of California, San Diego (La Jolla, CA, USA)
Aug-Dec 2015	Simons Institute for the Theory of Computing (Berkeley, USA) *Fine-Grained Complexity and Algorithm Design*
Apr-Jul 2012	Newton institute (Cambridge, UK) *Syntax and Semantics: On aspects of Turing's work*
Sep'09-May'10	Institute for Advanced Study (Princeton, USA)

Invited/plenary talks

- *Workshop of The Proof Society*, Swansea, UK, 2019
- *4th annual international conference on algorithms and discrete applied mathematics (CALDAM 2018) pre-conference school*, Guwahati, India, 2018
- *2018 Winter Meeting of the Association of Symbolic Logic*, San Diego, USA, 2018
- *4th Lund Conference on Games, Interaction, Reasoning, Learning and Semantics*, Lund, Sweden, 2016
- *Very Informal Gathering of Logicians*, UCLA, Los Angeles, USA 2013
- *Turing100.nl*, Amsterdam, Netherlands, 2012.
- *The Incomputable* workshop, Newport Pagnell, UK, 2012
- The International Workshop *Logical approaches to Barriers in Computing and Complexity*, Greifswald, 2010.
- *Computability in Europe: Logic and Theory of Algorithms (CiE 2008)* conference.

Research funding

NSERC Discovery grant	$145,000 for 5 years	2015 – now
NSERC Engage	$17,500 for 6 months	Aug 2014 – Jan 2015
RDC IRIF Ignite	$98,500 for 2 years	Jan 2011 – Oct 2013
NSERC Discovery grant	$80,000 for 7 years	2008 – 2015
Start-up grant, MUN Computer Science	$20,000	2007 – 2008

Scientific event organization

Winter 2021	*Satisfiability: theory, practice and beyond*, Semester-long special program at the Simons Institute for the Theory of Computing (Berkeley, USA), co-organizer.
April 2020	DIMACS workshop on *Meta-Complexity, Barriers, and Derandomization*, Rutgers (USA), co-organizer.
May 2019	*Symposium on 50 Years of Complexity Theory: A Celebration of the Work of Stephen Cook* at the Fields Institute, Toronto (Canada). Scientific committee member.
Aug 2017	*Algorithms and Data Structures Symposium (WADS'17)*, St. John's (Canada). **Local organizer and PC co-chair**.
Jan 2014	*Theoretical foundations of applied SAT solving*, Banff International Research Station for Mathematical Innovation and Discovery (BIRS; Banff, Canada), co-organizer
Oct 2011	*Proof complexity,* Banff International Research Station for Mathematical Innovation and Discovery (BIRS; Banff, Canada)

Student supervision totals

PhD	3 ongoing
MSc	7 completed
Course-based MSc	4 completed
Honours	4 completed
Undergraduate research assistants	17 completed

Publications

In refereed journals:

- Samuel R. Buss, Valentine Kabanets, Antonina Kolokolova, Michal Koucký, "Expander construction in VNC^1", *Annals of Pure and Applied Logic* 171(7): 102796, 2020
- Jiawei Gao, Russell Impagliazzo, Antonina Kolokolova, and Ryan Williams. "Completeness for first-order properties on sparse structures with algorithmic applications." *ACM Transactions on Algorithms (TALG)* 15(2): 1-35, 2018
- Noah Fleming, Antonina Kolokolova, and Renesa Nizamee. "Complexity of alignment and decoding problems: restrictions and approximations." *Machine Translation* 29(3-4): 163-187,2015
- Ruiwen Chen, Valentine Kabanets, Antonina Kolokolova, Ronen Shaltiel, and David Zuckerman. "Mining Circuit Lower Bound Proofs for Meta-Algorithms." *Computational Complexity* 24(2): 333-392, 2015
- Tamkin Khan Avi, Antonina Kolokolova, Adam Murphy, Richard Bajona, Kenneth Collingwood, Melissa Reid, "Glider mission planning using generic solvers", *Journal of Ocean Technology* 2(9):49-67, 2014
- Antonina Kolokolova, " Expressing vs. proving: relating forms of complexity in logic", *Journal of Logic and Computation* 22(2): 267-280, 2012
- Stephen Cook and Antonina Kolokolova, "A second-order system for polytime reasoning based on Grädel's theorem", *Annals of Pure and Applied logic* 124: 193-231, 2003.

In refereed conferences:

- Marco Carmosino, Valentine Kabanets, Antonina Kolokolova, Igor Carboni Oliveira "LEARN-Uniform Circuit Lower Bounds and Provability in Bounded Arithmetic." FOCS 2021
- Marco Carmosino, Kenneth Hoover, Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova "Lifting for Constant-Depth Circuits and Applications to MCSP." ICALP 2021: 44:1-44:20
- Chunxiao Li, Jonathan Chung, Soham Mukherjee, Marc Vinyals, Noah Fleming, Antonina Kolokolova, Alice Mu, Vijay Ganesh "On the Hierarchical Community Structure of Practical Boolean Formulas. " SAT 2021: 359-376
- Alexander Golovnev, Rahul Ilango, Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, Avishay Tal "$AC^0[p]$ Lower Bounds against MCSP via the Coin Problem", ICALP'2019.

- Nnamdi Ozah, Antonina Kolokolova "Compression improves image classification accuracy", 32nd Canadian Conference on Artificial Intelligence (CanAI'19), 2019.

- Vijay Ganesh, Antonina Kolokolova, Robert Robere "Proof complexity of Satisfiability Modulo Theories", International Conference on Computer Aided Verification (CAV'18), 2018.

- Paul Beame, Noah Fleming, Russell Impagliazzo, Antonina Kolokolova, Denis Pankratov, Toniann Pitassi, Robert Robere, "Stabbing planes", Innovations in Theoretical Computer Science (ITCS'18), 10:1-10:20, 2018.

- Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, Pierre Mckenzie and Shadab Romani, "Does looking inside a circuit help?", 42nd International Symposium on Mathematical Foundations of Computer Science (MFCS'17), 2017.

- Marco Carmosino, Russell Impagliazzo, Valentine Kabanets and Antonina Kolokolova, "Agnostic Learning from Tolerant Natural Proofs", 21st International Workshop on Randomization and Computation (RANDOM'17), 35:1-35:19, 2017.

- Samuel R. Buss, Valentine Kabanets, Antonina Kolokolova, Michal Koucký, "Expander construction in VNC^1", Innovations in Theoretical Computer Science (ITCS'17), 31:1-31:26, 2017.

- Jiawei Gao, Russell Impagliazzo, Antonina Kolokolova, Ryan Williams, "Completeness for First Order Properties on Sparse Structures with Algorithmic Applications", Proceedings of the Twenty-Eighth Annual ACM-SIAM Symposium on Discrete Algorithms. Society for Industrial and Applied Mathematics (SODA'17), 2017: 2162-2181

- Marco Carmosino, Russell Impagliazzo, Valentine Kabanets, and Antonina Kolokolova, "Learning algorithms from Natural Proofs", in Computational Complexity Conference (CCC'16), 2016: 10:1-10:24 (**Best paper award**).

- Abdullah-al-Mamun, Antonina Kolokolova, Dan Brake "Detecting Contextual Anomalies from Time-Changing Sensor Data Streams", at ECML PKDD'15 (PhD Consortium), 2015.

- Marco Carmosino, Russell Impagliazzo, Valentine Kabanets, and Antonina Kolokolova. "Tighter Connections between Derandomization and Circuit Lower Bounds" In LIPIcs-Leibniz International Proceedings in Informatics, vol. 40. Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik (RANDOM 2015), 2015.

- Ruiwen Chen, Valentine Kabanets, Antonina Kolokolova, Ronen Shaltiel, David Zuckerman "Mining Circuit Lower Bound Proofs for Meta-Algorithms", in proceedings of 29th IEEE Conference on Computational Complexity (CCC 2014), pages 262-273.

- Antonina Kolokolova, Yongmei Liu, David G. Mitchell and Eugenia Ternovska, "On complexity of Model expansion.", at 17th International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-17, 2010), LNCS 6397, pages 447-458.

- Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, "An axiomatic approach to algebrization", in proceedings of 41st ACM Symposium on Theory of Computing (STOC 2009), pages 695-704.

- Antonina Kolokolova, "Many facets of complexity in logic", invited paper at Computability in Europe (CiE 2008), LNCS 5028, pages 316-325.

- Antonina Kolokolova, "Closure properties of weak systems of bounded arithmetic", in proceedings of the 14th Conference on Computer Science Logic (CSL 2005), pages 369-383.

- Stephen Cook and Antonina Kolokolova, "A second-order theory of NL", in Proceedings of the 19th annual IEEE symposium on Logic in Computer Science (LICS 2004), pages 398-407.

- Stephen Cook and Antonina Kolokolova, "A second-order system for polytime reasoning based on Grädel's theorem", in proceedings of the 16th annual IEEE symposium on Logic in Computer Science (LICS 2001), pages 177-186.

Surveys/book chapters:

- Antonina Kolokolova "Complexity barriers as independence", invited chapter in "The Incomputable - Journeys beyond the Turing barrier"", ed. Barry Cooper and Mariya Soskova (Springer), 2016. ISBN 978-3-319-43667-8

Technical reports and unpublished conference presentations

- Eric Binnendyk, Marco Carmosino, Antonina Kolokolova, Ramyaa Ramyaa, and Manuel Sabin. "Learning with distributional inverters." arXiv:2112.12340 (2021).

- Marco Carmosino, Valentine Kabanets, Antonina Kolokolova, Igor Carboni Oliveira "LEARN-Uniform Circuit Lower Bounds and Provability in Bounded Arithmetic." ECCC 28: 95 (2021)

- Chunxiao Li, Jonathan Chung, Soham Mukherjee, Marc Vinyals, Noah Fleming, Antonina Kolokolova, Alice Mu, and Vijay Ganesh. "On the Hierarchical Community Structure of Practical Boolean Formulas." arXiv:2103.14992 (2021).

- Antonina Kolokolova, Mitchell Billard, Robert Bishop, Moustafa Elsisy, Zachary Northcott, Laura Graves, Vineel Nagisetty, Heather Patey: GANs & Reels: Creating Irish Music using a Generative Adversarial Network. arXiv:2010.15772 (2020)

- Alexander Golovnev, Rahul Ilango, Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, Avishay Tal "$AC^0[p]$ Lower Bounds against MCSP via the Coin Problem" Electronic Colloquium on Computational Complexity (ECCC) technical report TR19-018, 2019

- Paul Beame, Noah Fleming, Russell Impagliazzo, Antonina Kolokolova, Denis Pankratov, Toniann Pitassi, Robert Robere, "Stabbing planes", Electronic Colloquium on Computational Complexity technical report TR17-151, 2017.

- Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, Pierre Mckenzie and Shadab Romani, "Does looking inside a circuit help?", Electronic Colloquium on Computational Complexity technical report TR17-109, 2017.

- Samuel R. Buss, Valentine Kabanets, Antonina Kolokolova, Michal Koucký "Expander construction in VNC^1", Electronic Colloquium on Computational Complexity technical report TR16-144, 2016.

- Marco Carmosino, Russell Impagliazzo, Valentine Kabanets, and Antonina Kolokolova, "Algorithms from Natural Lower Bounds", Electronic Colloquium on Computational Complexity technical report TR16-008, 2016.

- Antonina Kolokolova, Renesa Nizamee, "Approximating solution structure of the weighted sentence alignment problem", arXiv:1409.2433 [cs.CL], 2014

- Antonina Kolokolova, Renesa Nizamee, "Approximating optimal solution structure with edit distance and its applications", informal proceedings/presentation at *Computability in Europe (CiE)* 2014.

- Ruiwen Chen, Valentine Kabanets, Antonina Kolokolova, Ronen Shaltiel, David Zuckerman "Mining Circuit Lower Bound Proofs for Meta-Algorithms", Electronic Colloquium on Computational Complexity technical report TR13-057, 2013

- Valentine Kabanets and Antonina Kolokolova, "Compression of Boolean functions", Electronic Colloquium on Computational Complexity technical report TR13-024, 2013

- Antonina Kolokolova, Kenneth Collingwood, Melissa Reid "SAT Solvers for AUV Mission Planning", Workshop on Underwater Robotics, May 2011.

- Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, "An axiomatic approach to barriers in complexity", invited paper at Greifswald 2010 workshop "Logical Approaches to Barriers in Computing and Complexity".

- Antonina Kolokolova, Yongmei Liu, David G. Mitchell and Eugenia Ternovska, "On complexity of Model expansion.", short paper at 16th International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-16, 2010).

- Antonina Kolokolova, Yongmei Liu, David G. Mitchell and Eugenia Ternovska, "Model expansion and the expressiveness of FO(ID) and other logics". Simon Fraser University technical report TR2007-29, 2007

- Antonina Kolokolova, Yongmei Liu, Eugenia Ternovska and David Mitchell, " Complexity of Expanding a Finite Structure and Related Tasks", workshop on Logic and Computational Complexity (LCC 2006).

- Stephen Cook and Antonina Kolokolova, "A second-order system for polynomial-time reasoning based on Grädel's theorem", Electronic Colloquium on Computational Complexity technical report TR01-024, 2001.

- Preparation of a manuscript for lectures by Steven Rudich and Avi Wigderson at the IAS/Park City Summer School 2000, published as IAS/Park City Mathematics Series volume 10 "Computational Complexity Theory", Steven Rudich and Avi Wigderson (editors).

Submitted/in preparation

- Abdullah Faruq, Antonina Kolokolova, Brian Claus "Planning an interesting path", in preparation.

- Maria Louisa Bonet, Russell Impagliazzo, Valentine Kabanets, Antonina Kolokolova, Jordi Levy, "Resolution Bounds for Random Formulas Under the Power-law Distribution", in preparation.

Invited workshops

- Schloss Dagstuhl - Leibniz-Zentrum für Informatik GmbH (Germany) *Computational complexity of discrete problems*, 2019

- Schloss Dagstuhl - Leibniz-Zentrum für Informatik GmbH (Germany) *Algebraic Methods in Computational Complexity*, 2018

- Banff International Research Station for Mathematical Innovation and Discovery of Casa Casa Matemática Oaxaca (BIRS-CMO, Oaxaca, Mexico) *Theory and Practice of Satisfiability Solving*, 2018

- Banff International Research Station for Mathematical Innovation and Discovery of Casa Casa Matemática Oaxaca (BIRS-CMO, Oaxaca, Mexico) *Analytic Techniques in Theoretical Computer Science*, 2018

- Clay Mathematics Institute *Workshop on Complexity Theory* (Oxford, UK), 2018

- *Proof complexity* workshop at FLOC'19 (Oxford, UK), 2019

- Schloss Dagstuhl - Leibniz-Zentrum für Informatik GmbH (Germany) *Proof complexity*, 2018

- Institute of Mathematics, Czech Academy of Sciences (Prague, Czech Republic) *Bounded arithmetic workshop*, 2017
- NII Shonan Meeting (Kanagawa, Japan) *Logic and Computational Complexity*, 2017
- Mathematisches Forschungsinstitut Oberwolfach (Germany) *Proof Complexity and Beyond*, 2017
- Fields institute (Toronto, ON): *Theoretical foundations of SAT solving*, 2016
- Simons Institute (Berkeley, CA, USA) Four workshops associated with "Fine-Grained Complexity and Algorithm Design" program, 2015, and "Reunion workshop", 2016.
- Schloss Dagstuhl - Leibniz-Zentrum für Informatik GmbH (Germany) *Resource-bounded problem solving*, 2014.
- Rome, Italy *Limits of Theorem Proving* workshop, 2012
- Newton Institute (Cambridge, UK) workshop *The Incomputable*, 2012.
- Bellairs research station (Barbados) *Workshop on Computational Complexity*, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018
- Mathematisches Forschungsinstitut Oberwolfach (Germany) *Mathematical Logic: Proof theory, Constructive Mathematics*, 2008, 2011, 2014, 2017
- Newton's Institute (Cambridge, UK) *New Directions in Proof Complexity*, 2006
- Banff International Research Station for Mathematical Innovation and Discovery (BIRS; Banff, Canada) workshops on *Advances in Computational Complexity*, 2004, 2006, 2008,2010, 2013, 2016
- Institute for Advanced Study workshop on *Complexity of Proofs and Computations* (Princeton,USA), 2001.

Invited seminars and visits

- Université de Montréal: seminar, June 28, 2017
- Université de Montréal: seminar, June 28, 2016
- University of California, San Diego: seminar, May 16, 2016
- Caltech: seminar, Feb 4, 2016
- University of Washington: seminar, Jan 12, 2016
- Université de Montréal: seminar, June 30, 2015

- University of Toronto: seminar, June 18, 2015
- University of California, San Diego: seminar, Jul 11, 2014
- Harvard/MIT logic seminar, Harvard, Apr 15, 2013
- Math department, MUN. Oct 22, 2012.
- Institut für Informatik of the Ludwig-Maximilians-Universität München (München, Germany): seminar, Oct 2nd, 2012
- Mathematical Institute AV CZ (Prague, Czech Republic): visitor+seminar, Jul 7-15, 2012
- University of Edinburgh (Edinburgh, UK): seminar, Jun 8th, 2012
- Tohoku University (Sendai, Japan): seminar, Jul 22nd, 2011.
- Tokyo Institute of Technology (Tokyo, Japan): visitor, June-August 2011
- Simon Fraser University (Vancouver, Canada): departmental seminar, Apr 26,2011.
- Technion, (Haifa, Israel): visitor+seminar, Jul 8-24, 2010.
- CUNY logic workshop, New York (USA): seminar, Apr 23, 2010.
- Institute for Advanced Study (USA): visitor, Sep 2009 – May 2010.

Academic service

Program committees:

- "'Computational Complexity Conference (CCC'22), 2022
- "'Innovations in Theoretical Computer Science (ITCS'21), 2021
- "'Logic in Computer Science" conference (LICS'20), Saarbrücken (Germany), 2020
- "'Innovations in Theoretical Computer Science (ITCS'20), Seattle (USA), 2020
- "23rd international Conference on Randomization and Computation" (RANDOM'19)
- "The 13th International Computer Science Symposium in Russia" (CSR'18)
- "Logic and Computational Complexity" workshop (LCC'18)
- "'Logic in Computer Science" conference (LICS'18), Oxford (UK), 2018
- "2017 Annual ASL (association for symbolic logic) meeting", Boise (USA), 2017

- "Logic and Computational Complexity" workshop (LCC'15), Kyoto (Japan), 2015
- "Algorithms and data structures symposium" (WADS'15), Victoria (Canada), 2015
- "Computability in Europe" conference (CiE'15), Bucharest (Romania),2015
- "Logic in Computer Science" conference (LICS'13), New Orleans (USA), 2013
- "Computability in Europe" conference (CiE'13), Milano (Italy),2013
- "Turing in Context II" workshop, Brussels (Belgium), 2012.
- "Atlantic Provinces Council on the Sciences" (APICS'09), Halifax (Canada), 2009

Editorial:

- On editorial board of "Journal on Satisfiability, Boolean Modeling and Computation", Sep 2018 – now.
- Springer series "Progress in Computer Science and Applied Logic", Nov 2017-now.
- Special issue of "Computational geometry: Theory and Applications" (WADS 2017).
- On editorial board of Mathematical Logic Quarterly. Jan 2013 – Dec 2018.

Refereeing:

Annals of Pure and Applied Logic, Discrete Applied Math. Journal, Archive for Math. Logic, Journal of Logic and Computation, Computational Complexity journal, Logic in Computer Science (LICS) conference, Foundations of Computer Science (FOCS) conference, Transactions on Computational Logic, Fundamenta Informaticae, Math Reviews

Theses reviews/examiner: 1 habilitation, 4 PhD, 7 MSc.

Student supervision

- PhD students:
  - Ali Farrokhtala (co-supervised): May 2021 - now
  - Kyle Nickerson (co-supervised): Dec 2020 - now
  - Nnamdi Ozah: Sep 2018-now.
  - Arastoo Bozorgi (co-supervised): Jul 2017- Jan 2021. Thesis: "From online social network analysis to a user-centric private sharing system". Now postdoc at MUN.
  - Rida Albira (co-supervised): Sep 2016-now.

- MSc students:
  - Majid Beheshti Mohtasham (co-supervised): Jun 2018-Oct 2019. Thesis: *Cryptographic hardness of feature selection in strict and pure synthetic genetic datasets.* Now at Verafin.
  - Mst. Mausumi Sabnam Mustari (MSc in Scientific Computing): Jan 2015-Jan 2018. Thesis: *Configuring spiking neural network training algorithms.* Now at U. de Montreal.
  - Shadab Romani (co-supervised): Apr 2015-July 2016. Thesis: *Succinct representations of Boolean functions and the Circuit-SAT problem.* Now PhD at SFU.
  - Abdullah al Mamun: Sep 2013-Jan 2016. *Anomaly Detection from Time-Changing Environmental Monitoring Sensor Data Streams.* Now PhD at Purdue U.
  - Abdullah Faruq: Sep 2012-Apr 2017. *Planning an interesting path.* Now at Klick.
  - Tamkin Avi: May 2012-Oct 2014. Thesis: *Glider mission planning using generic solvers.* Now at Bluedrop.
  - Renesa Nizamee: Sep 2009-Jul 2014. Thesis: *The intrinsic hardness of structure approximation.* Now at IBM.
  - Scott McCarthy (co-supervised): Sep 2007-Apr 2011. Withdrawn.
- Undergraduate honours students:
  - Vineel Nagisetty (2019). Now at Borealis AI.
  - Noah Fleming (2015). **Now faculty at MUN**
  - Adam Murphy (2013). Now at Vision33.
  - Robert Robere (2011). **Now faculty at McGill.**
- Course-based MSc project supervision:
  - Sourav Sarker (Fall 2020).
  - Shaik Umar (summer 2019). Now at Creatros.
  - Bina Javed (Fall 2017). Now at Eckler.
  - Nnamdi Ozah (Fall 2017). Now PhD at MUN.
  - Norbert Obiekwe (summer 2013). Now at REDspace.
- Undergraduate research assistants (2008-2019):
  Hilary Sinclair, Daniel Power, Laura Graves, Vineel Nagisetty, Robert Bishop, Moustafa Elsisy, Zachary Northcott, Mitchell Billard, Noah MacAulay, Noah Fleming, Adam Murphy, Richard Bajona, Ken Collingwood, Melissa Reid, Robert Robere, Olivemarie Garland, Molham Kamel.

Mentorship and diversity

- Participant in the *Women in Computability* mentorship program in 2008 and 2014.
- Supported a student to attend "Women in Theory" workshop at the "Center for Computational Intractability" (2010) as well as her CDMP mentorship program application (2009).
- Invited speaker at the *Women in Computability* workshop, 2008.

Departmental service

- *Departmental and university committees*
  - Undergraduate studies: Sep 2009 – Aug 2010, Winter 2011, Sep 2016 – Aug 2019, Sep 2021 - now
  - Graduate admissions committee Sep 2021 – now
  - Graduate studies: Feb 2008 – Aug 2009, Winter 2011 – Aug 2013. Sep 2014 – June 2015, Sep 2016– Aug 2019
  - Library committee: Sep 2016-Aug 2017.
  - Undergraduate curriculum development: Nov 2012-June 2015
  - Promotion and tenure: Sep 2012- Aug 2013, Sep 2017-Aug 2018.
  - Search committee: 2011-2012, Sep 2013- July 2014, Sep 2020 – Aug 2021
  - Media and marketing: Sep 2007-Aug 2009, Sep 2011-Aug 2013, Sep 2016-Aug 17.
- *Other departmental service*
  - Departmental seminars organization: Jan 2008 – June 2015, Sep 2016 – Aug 2019
  - Programming competition organization: Fall 2009, Winter 2011 – Fall 2014.
  - Coaching at the regional programming competition: Fall 2014.
- *Recruitment and promotional events*
  - "Let's talk science: Lab Extravaganza" high school outreach event: Winter 2013, 2014, 2015, 2019
  - "Eastern Newfoundland Science Fair": April 2014
  - Open house organization: Fall 2011
  - High school interviewing: May 2011.