

Curriculum Vitae

Thomas Brüstle

Maurice Auslander Chair

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and

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Université de Sherbrooke

February 2025

CURRICULUM VITAE

Introduction

Name : Thomas Brüstle

Place and date of birth : Munich, Germany, November 16th, 1964

Citizenship : German

Languages: German, English, French

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Qualifications

- June 1987 Bachelor's in Mathematics, Ludwig-Maximilians-Universität München
- Nov. 1990 Master's in Mathematics, University of Zürich
- May 1995 Ph.D. in Mathematics (Supervisor Prof. Dr. P. Gabriel), University of Zürich
- May 2002 Habilitation in Mathematics, University of Bielefeld

Academic Experience

1990-1995	Teaching Assistant	Universität Zürich
1996-2002	C1-position (wissenschaftlicher Assistent)	University of Bielefeld
2002-2005	C2-position (Hochschuldozent)	University of Bielefeld
2003-	Maurice Auslander Research Chair	UdeS and Bishop's
2003-2004	Assistant professor	Bishop's University
2003-2006	Assistant professor	U. de Sherbrooke
2004-2008	Associate professor	Bishop's University
2006- 2013	Associate professor	U. de Sherbrooke
2008-	Full professor	Bishop's University
2013 -	Full professor	U. de Sherbrooke

Research Contributions:

- [56] Riju Bindua, Thomas Brüstle, and Luis Scoccola *Decomposing zero-dimensional persistent homology over rooted tree quivers*, arXiv:2411.19319
- [55] Thomas Brüstle, Eric J. Hanson, Sunny Roy, and Ralf Schiffler, *An exact structure approach to almost rigid modules over quivers of type \mathbb{A}* , arXiv:2410.04627, submitted to Journal of Algebra.
- [54] Claire Amiot, Thomas Brüstle, Eric J. Hanson, *Invariants of persistence modules defined by order-embeddings*, arXiv:2402.09190, submitted to SIAM Journal on Applied Algebra and Geometry
- [53] Benjamin Blanchette, Thomas Brüstle, Eric J. Hanson, *Exact structures for persistence modules*, arXiv:2308.01790, accepted to appear in ICRA2022 proceedings.
- [52] Thomas Brüstle, Souheila Hassoun, Amit Shah, Aran Tattar, *Stratifying systems and Jordan-Hölder extriangulated categories*, arXiv:2208.07808, submitted to Glasgow Mathematical Journal.
- [51] Benjamin Blanchette, Thomas Brüstle, Eric J. Hanson, *Homological approximations in persistence theory*, Canadian Journal of Mathematics, Volume 76, Issue 1, February 2024, pp. 66 - 103.
- [50] Marco Armenta, Thomas Brüstle, Souheila Hassoun, Markus Reineke, *Double framed moduli spaces of quiver representations*, arXiv:2109.14589, Linear Algebra and Applications 650 (2022), 98–131.
- [49] Rose-Line Baillargeon, Thomas Brüstle, Mikhail Gorsky, Souheila Hassoun, *On the lattice of weakly exact structures*, arXiv:2009.10024, J. Algebra 612 (2022), 77–109.
- [48] Claire Amiot, Thomas Brüstle, *Derived equivalences between skew-gentle algebras using orbifolds*, Documenta Mathematica 27 (2022), 933–982.
- [47] Thomas Brüstle, Souheila Hassoun, Aran Tattar, *Intersections, sums, and the Jordan-Hölder property for exact categories*, J. Pure Appl. Algebra 225 (2021), no. 11, 35 pp. (arXiv:2006.03505)

- [46] Th. Brüstle, D. Smith and H. Treffinger, *Stability Conditions and Maximal Green Sequences in Abelian Categories*, Revista de la Unión Matemática Argentina Volume 63 (2022) no. 1, pp. 203–221. (arXiv:1805.04382)
- [45] J. Alves, D. Castonguay, and Th. Brüstle, *Unit form recognition by mutations: application of mutations in the search of positive roots*, Discrete Appl. Math. 291 (2021) 223–236.
- [44] Th. Brüstle, S. Hassoun, D. Langford and S. Roy, *Reduction of exact structures*, J. Pure Appl. Algebra 224 (2020), no. 4, 106212, 29 pp. (arXiv:1809.01282)
- [43] Th. Brüstle, G. Douville, K. Mousavand, H. Thomas, E. Yildirim, *On the combinatorics of gentle algebras*, Canad. J. Math. 72 (2020), no. 6, 1551–1580.
- [42] Th. Brüstle, D. Smith and H. Treffinger, *Wall and Chamber Structure for finite-dimensional Algebras*, Adv. Math. 354 (2019), 106746, 31 pp. (arXiv:1805.01880)
- [41] Th. Brüstle and J. Zhang, *Non-Leaving-Face property for marked surfaces*, Frontiers of Mathematics in China, 2019, 14(3): 521–534. (arXiv:1801.09501)
- [40] J. Alves, D. Castonguay, and Th. Brüstle, *A Polynomial Recognition of Unit Forms Using Graph-Based Strategies*, Discrete Applied Mathematics 253 (2019), 61–72.
- [39] Th. Brüstle, S. Hermes, K. Igusa, and G. Todorov, *Semi-invariant pictures and two conjectures on maximal green sequences*, Journal of Algebra, Volume 473, 1 March 2017, Pages 80–109.
- [38] J. Alves, D. Castonguay, and Th. Brüstle, *A Polynomial Recognition of Unit Forms*, Electronic Notes in Discrete Mathematics, Volume 55, November 2016, Pages 203–206, 14th Cologne-Twente Workshop on Graphs and Combinatorial Optimization (CTW16).
- [37] Th. Brüstle and S. Pan, *Transfer of derived equivalences from subrings to endomorphism algebras*, J. Algebra and its Applications, Vol. 15, No. 06 (2016).

- [36] Th. Brüstle and Q. Yu, *Tagged mapping class groups I: Auslander-Reiten translation*, Math. Zeitschrift, Volume 279, Issue 3 (2015), Page 1103–1120.
- [35] L. Beaudet, Th. Brüstle, and G. Todorov, *Projective dimension of modules over cluster-tilted algebras*, Algebras and Representation Theory: Volume 17, Issue 6 (2014), Page 1797–1807.
- [34] Th. Brüstle, D. Yang, *On Ordered Exchange Graphs*, EMS Series of Congress Reports: Advances in Representation Theory of Algebras (2014), 135–193. DOI: 10.4171/125-1/5
- [33] Th. Brüstle, G. Dupont and M. Pérotin, *On Maximal Green Sequences*, Int Math Res Notices (2014), 4547–4586.
- [32] Th. Brüstle and J.Zhang, *A module-theoretic interpretation of Schiffler’s expansion formula*, Communications in Algebra, Volume 41, Issue 1 (2013), 260–283.
- [31] Th. Brüstle and J.Zhang, *On the cluster category of a marked surface*, Algebra & Number Theory 5-4 (2011), 529–566.
- [30] Th. Brüstle, J.-A. de la Pena and A. Skowronski, *Tame algebras and Tits quadratic forms*, Advances in Mathematics 226 (2011), 887–951.
- [29] A. Beineke, Th. Brüstle and L. Hille, *Cluster-Cyclic Quivers with three Vertices and the Markov Equation*, Algebras and Representation Theory, Volume 14, Number 1 (2011), 97–112.
- [28] I. Assem, Th. Brüstle and R. Schiffler, *Cluster-tilted algebras without clusters*, Journal of Algebra 324 (2010), 2475–2502.
- [27] I. Assem, Th. Brüstle, G. Charbonneau-Jodoin and P.-G. Plamondon, *Gentle algebras arising from surface triangulations*, Algebra and Number Theory, Vol. 4, No. 2 (2010), 201–229.
- [26] I. Assem, Th. Brüstle and R. Schiffler, *On the Galois coverings of a cluster-tilted algebra*, Journal of Pure and Applied Algebra, Volume 213, Issue 7, (2009), 1450-1463.

- [25] I. Assem, M. Blais, Th. Brüstle, and A. Samson, *Mutation classes of skew-symmetric 3×3 -matrices*, Comm. Algebra 36 (2008), no. 4, 1209–1220.
- [24] I. Assem, Th. Brüstle and R. Schiffler, *Cluster-tilted algebras as trivial extensions*, Bull. London Math. Soc. 40 (2008), 151–162.
- [23] I. Assem, Th. Brüstle and R. Schiffler, *Cluster-tilted algebras and slices*, Journal of Algebra 319 (2008), 3464–3479.
- [22] I. Assem, Th. Brüstle, R. Schiffler and G. Todorov, *m-cluster categories and m-replicated algebras*, Journal of Pure and Applied Algebra **212/4** (2008), 884–901.
- [21] Th. Brüstle, *Classification of algebras and their representations*, in Handbook of tilting theory, London Math. Soc. Lecture Note Series No. 332 (2007), 15–30.
- [20] I. Assem, Th. Brüstle, R. Schiffler and G. Todorov, *Cluster categories and duplicated algebras*, J. Algebra, **305** (2006), 548–561.
- [19] Th. Brüstle, *Typical Examples of Tame Algebras*. Representations of finite dimensional algebras and related topics in Lie theory and geometry, 27–44, Fields Inst. Commun., 40, Amer. Math. Soc., Providence, RI, 2004
- [18] Th. Brüstle, *Tame Tree Algebras*, Journal für die reine und angewandte Mathematik (Crelle’s Journal) **567** (2004), 51–98.
- [17] Th. Brüstle and V.V.Sergeichuk, *Estimate of the number of one-parameter families of modules over a tame algebra*, Linear Algebra and its Applications **365** (2003), 115–133.
- [16] Th. Brüstle, *On positive roots of pg-critical algebras*, Linear Algebra and its Applications **365** (2003), 107–114.
- [15] Th. Brüstle, *On \mathbb{E}_6 -free tree algebras*, Representations of Algebras Vol II (Proceedings ICRA IX), BNU Press, Beijing (2002), 174–182.

- [14] Th. Brüstle and Y. Han, *Tame two-point algebras without loops*, Comm. Algebra **29** (2001), no.10, 4683–4692.
- [13] Th. Brüstle, S. König and V. Mazorchuk, *The coinvariant algebra and representation types of blocks of category \mathcal{O}* , Bull. London Math. Soc. **33** (2001), no. 6, 669–681.
- [12] Th. Brüstle, L. Hille and G. Röhrle, *Finiteness for Parabolic Group Actions in Classical Groups*, Archiv der Mathematik **76** (2), (2001), 81–87.
- [11] Th. Brüstle, *Derived-tame tree algebras*, Compositio Mathematica **129** (2001), 301–323.
- [10] Th. Brüstle, *Kit algebras*, Journal of Algebra **240** (2001), no. 1, 1–24.
- [9] Th. Brüstle and L. Hille, *Actions of Parabolic Subgroups in GL_n on Unipotent Normal Subgroups and Quasi-hereditary Algebras*, Colloquium Mathematicum **83** (2000), no. 2, 281-294.
- [8] Th. Brüstle and L. Hille, *Matrices over Upper Triangular Bimodules and Δ -filtered Modules over Quasi-hereditary Algebras*, Colloquium Mathematicum **83** (2000), no. 2, 295–303.
- [7] M. Barot, Th. Brüstle and J.A. de la Peña, *Derived-tame tree algebras of type \mathbb{E}* , Forum Mathematicum **12**(6) (2000), 713–721.
- [6] Th. Brüstle and L. Hille, *Finite, Tame and Wild Actions of Parabolic Subgroups in $GL(V)$ on Certain Unipotent Subgroups*, Journal of Algebra **226** (2000), no. 1, 347–360.
- [5] Th. Brüstle, L. Hille, C.M. Ringel and G. Röhrle, *The Delta-filtered modules without self-extensions for the Auslander algebra of $k[T]/\langle T^n \rangle$* , Algebras and Representation Theory **2** (1999), 295-312.

- [4] Th. Brüstle, L. Hille, G. Röhrle and G. Zwara, *The Bruhat-Chevalley order of Parabolic Group Actions in General Linear Groups and Degeneration for Delta-filtered Modules*, *Advances in Mathematics* **148** (2) (1999), 203–242.
- [3] Th. Brüstle, *On the growth function of tame algebras*, *C.R. Acad. Sci Paris*, **322** (1996), 211-215.
- [2] Th. Brüstle, *Matrix-finite Bimodules: An Algorithm*, *C.R. Acad. Sci Paris*, **319** (1994), 1141-1145.
- [1] Th. Brüstle, *On commutative tame algebras*, *C.R. Acad. Sci Paris*, **318** (1994), 13-18.

Recent research support

- Mitacs Globalink award for the visit of Yongning Yan, China, to Sherbrooke (\$6,000), Summer 2025.
- Mitacs Globalink award for the visit of Tanmay Bakshi, Indian Institute of Technology Roorkee, to Sherbrooke (\$6,000), Summer 2024.
- Mitacs Globalink award for the visit of Riju Bindua, IIT Delhi, to Sherbrooke (\$6,000), Summer 2024.
- Mitacs Globalink award for the visit of Valentine Soto (Grenoble) to Sherbrooke (\$6,000), Fall 2023.
- Mitacs Globalink award for the visit of Benjamin Blanchette to Japan (\$6,000), Summer 2023.
- Séjour de recherche FRQ-CRM-CNRS (visit Grenoble in summer 2023, \$8,000)
- NSERC Discovery Institutes Support Grant DIS (\$5,740,065), Centre de recherches mathématiques (CRM), as one of 9 co-applicants, principal applicant Octav Cornea.

- CHARMS - Clusters, Homological Algebra, Representations and Mirror Symmetry, Grant Funding Sources: Agence nationale de la recherche (ANR) (France) Programme national de recherche (PNR) Total Funding - 240,770 euros. Co-applicants : Amiot, Claire; Chapoton, Frédéric; Fock, Vladimir; Hohlweg, Christophe; Jacquet-Malo, Lucie; Keller, Bernhard; Pilaud, Vincent; Plamondon, Pierre-Guy; Schroll, Sibylle; Sgella, Salvatore; Thomas, Hugh; Wagner, Emmanuel; Principal Applicant : Palu, Yann
- NSERC discovery grant 2019-2024 (\$130,000), Exact Structures in Representation Theory.
- NSERC discovery grant 2014-2019 (\$140,000)
- FQRNT group grant, Quebec, 2013-2016 (\$126,000 for the research group formed by I. Assem, Th. Brüstle, V. Charette, S. Liu and V.Shramchenko)
- Subvention d'équipe PIFIR, Université de Sherbrooke, 2011-2021, \$20,000 per year, for the research group formed by I. Assem, M. Beaudry, J.-M.Belley, Th. Brüstle, V. Charette, T.Kaczynski, S. Liu and V.Shramchenko.
- NSERC discovery grant 2009-2014 (\$140,000)
- SRC grant Bishop's University, 2019 (\$9,000), Ribbon graphs in representation theory.

Recent talks and meetings

- to come: ARTA Köln
- to come: Gabriel legacy Bielefeld
- NTNU Trondheim Flash Talks (online), January 10, 2025, invited lecture: An exact structure approach to almost rigid modules.
- Conference on Representation theory - combinatorial aspects and applications to TDA, NTNU, Trondheim, Norway, December 1-5, 2024, invited lecture: Decomposing rooted tree modules with the elder rule.

- Minicourse on Topological Data Analysis, Verona, Italy, October 21-25, 2024, invited lecture.
- Workshop Simple-mindedness and stability, Ambleside (UK), July 8-12, 2024, invited lecture.
- GATMAID (Geometry, Algebra and Topology in Machine Learning, Artificial Intelligence and Big Data, Barcelona (Spain), June 25-28, 2024, Mini-course
- Spring Workshop on the Representation Theory of Algebras and related areas, OIST (Japan), April 22-26, 2024, Mini-course on stability conditions in representation theory.
- Seminar Murcia, March 5, 2024, presentation "Linear Invariants for poset representations".
- Eindhoven, Netherlands, SIAM conference, invited sessionspeaker, July 2023, presentation: Homological approximations in persistence theory
- ARTA conference, Kingston, ON, invited speaker, June 2023, presentation: Homological approximations in persistence theory
- Aarhus, Denmark, Mini-symposium, invited speaker, June 2023, presentation: Homological approximations in persistence theory
- AMS Sectional meeting, Atlanta, March 2023, Session speaker, presentation: Homological approximations in persistence theory
- Oberwolfach February 2023, active participant.
- CMS winter meeting, Section on Representation Theory, Toronto December 2022, presentation "Relative torsion classes".
- Auslander Conference, Woods Hole, October 2022, invited expository lecture "Homological approximations in persistence theory".
- Algebra Seminar, Queen's University, Kingston, September 2022, presentation "Homological approximations in persistence theory".
- Functor Categories, Model Theory, and Constructive Category Theory, University of Almería, Spain, July 11-15, 2022, presentation "Homological approximations in persistence theory".

- Fourth Canada-Mexico-USA Conference in Representation Theory, Non-commutative Algebra, and Categorification, Northeastern University, Boston, June 9-12, 2022, presentation "Homological approximations in persistence theory".
- RTAA - Representation Theory of Algebras and Applications, Sao Paolo (online), 27 May 2022, webinar on "Homological approximations in persistence theory".
- Northeastern University, Boston, March 2022: Presentation at Topology Seminar: relative homology and persistence theory.
- (online) The Sixth Isfahan Seminar on Representations of Algebras (ISRA-VI), December 2021 (main speaker, 3 hour lecture series): Wall and chamber structure and maximal green sequences in representation theory.
- Isaac Newton Institute, Cambridge, September 2021: Labelling chains of torsion classes
- (online) Algebra Seminar, University of Iowa, Fall 2021, On multi-parameter persistence theory: homological invariants.
- FDSeminar (online seminar created during covid, it serves as forum for representation theory): On exact categories, June 2021.
- VirtARTA (Virtual meeting Advances in Representation Theory of Algebras), May 17-28, 2021: Tame strongly simply connected algebras and weakly non-negative quadratic forms.
- Workshop Representations of Algebras, Oberwolfach, Germany, January 2020: Derived equivalences between skew-gentle algebras using orbifolds
- 50 years representation theory in Bielefeld: Past and Future, Bielefeld, September 2019: Matrix reductions, past and future
- Summer School on Stability Conditions, Hausdorff Center, Bonn, September 2019: Rudakov stability
- CRM workshop on quiver varieties, Montreal, August 2019: On c -vectors

- Homological methods, Iowa City, August 2019: On c-vectors
- Workshop on Cluster Algebras and Applications, Kyoto, Japan, June 2019: Skew-gentle algebras and Fukaya Categories of orbifolds
- Conference on Representation Theory and Homological Mirror Symmetry, Leicester, UK, May 2019: Skew-gentle algebras and Fukaya Categories of orbifolds
- AMS sectional meeting, Hartford, CT, April 2019: Skew-gentle algebras.

(Co-)organizer of recent and upcoming meetings

- to come: BIRS-CMI workshop (with Apoorva Khare, Amit Kuber, Shraddha Srivastava) on "Quivers in representation theory" for 42 on-site and up to 300 virtual participants, to run at the Chennai Mathematical Institute (Chennai, India) Nov 30 – Dec 5, 2025.
- to come: (with M. Garcia) Session of the CMS Summer Meeting June 2025 on Combinatorial representation theory, June 2025, Quebec city.
- (with C. Chindris and K. Mousavand) ISM Discovery School "Applications of Representation Theory in Topological Data Analysis and Geometric Invariant Theory", Montreal, June 2024.
- BIRS workshop (with Claire Amiot, Sergio Estrada, Steve Oudot, Luis Scoccola) on "Representation Theory and Topological Data Analysis" for 42 on-site and up to 300 virtual participants, to run at the Banff International Research Station (Alberta, Canada) in April 7-12, 2024.
- (with Claire Amiot, Yann Palu and Pierre-Guy Plamondon) CIRM - Centre International de Rencontres Mathématiques, Marseilles. The meeting "Current trends in representation theory, cluster algebras and geometry" has been accepted for 27 November – 1 December, 2023. Euro 40,000 from CIRM.
- (with K. Mousavand and Ch. Paquette) ISM Discovery School "Mutations: from cluster algebras to approximation theory", July 2022.

- (with V. Bazier-Matte and E. Hanson) Session of the CMS Summer Meeting July 2022 on Relative Homology and Persistence Theory, June 2022, St John's, NL.
- (with JP. Burelle) SAG seminar, Sherbrooke, ongoing.
- (with I.Assem, Ch.Paquette, S.Trepode, Tianyaun Xu, E.Yildirim) VirtARTA, May 2021, 300+ participants, fully online.
- (with S.Hassoun, A.Shah, S-A.Wegner) Additive categories between algebra and functional analysis, March 2021, fully online:
<https://researchseminars.org/seminar/cats2021>
- (with S.Hassoun) The TRAC Seminar - Théorie de Représentations et ses Applications et Connections, fully online: <https://sites.google.com/view/thetracseminar/>
- (with Juan Carlos Bustamante, Shiping Liu) Organisation du Rencontre de THÉORIE des REPRÉSENTATIONS des ALGÈBRES - Édition Corona, 25-26 septembre 2020, en ligne:
<https://researchseminars.org/seminar/SheRepTh>
- (with J.A. de la Pena, D.Pauksztello, D.Ploog) BIRS CMO workshop, Oaxaca, Mexico, October 2018, Stability conditions in representation theory
- (with the members of the representation theory group in Sherbrooke) Annual meeting on representation theory of algebras, Sherbrooke.

Awards and other evidence of impact

- External examiner of the Ph.D. defense for Benedikt Fluhr, TUM, Munich, Germany, December 2024.
- External Examiner for the Promotion Committee of the University of Kentucky, for the Promotion of Krysthyna Serhienko, August 2024.
- External reviewer for the Takebe Katahiro Prize of the Mathematical Society of Japan, 2024.

- Best paper award for our publication in Revista de la Union Matematica Argentina, with David Smith and Hipolito Treffinger, title of the paper is: Stability conditions and maximal green sequences in abelian categories, 2023.
- collaboration with IQ (AlgoLab, collaboration started in January 2023), on Quantum TDA.
- collaboration with Optina Diagnostics (medical imaging company in Montreal, collaboration started in January 2023), on TDA and Machine Learning methods applied to medical imaging. Collaborators are, besides Optina, Professor Hugh Thomas from UQAM.
- External reviewer for the FRQ program "Research Support for New Academics", January 2023.
- External Examiner for the Promotion Committee of the University of Lancaster, England, for the Promotion of David Pauksztello, April 2022.
- External Examiner for the Promotion Committee of the University of Durham, England, for the Promotion of Dr. P. Tumarkin, 2021.
- External evaluator for professor position at NTNU, April 2021.
- Simons Visiting Professorship (SVP), joint program with MFO, two weeks visit at University of Grenoble, January 2020.
- Member of the Laboratoire de combinatoire et d'informatique mathématique at the Centre de recherches mathématiques, Montreal.

Recent supervision of graduate students

Supervisor of Léa Lavoué, M2 student from Université de Poitiers, stage de recherche 6 months Jan-June 2025, rep theory of finite-dimensional algebras.

Co-supervisor of Monica Garcia, postdoctoral student, Fall 2024 - Summer 2026,

Co-supervisor of Faraz Ahmed, postdoctoral student, Fall 2024 - Summer 2025,

Supervisor of Luis Scoccola, postdoctoral student, summer 2024 - summer 2025, Project: Characterizing the image of H_0 on graphs

Supervisor of Justin Desrochers, PhD student, winter 2024 -

Supervisor of Jeremy Gagnon, Master's student, winter 2024 -

Supervisor of Jon Pilarte, Master's student, Fall 2023 -

Supervisor of Pierre Bodin, PhD student, in cotutelle with PG. Plamondon, Sherbrooke and Versailles, Fall 2021-

Supervisor of Sunny Roy, PhD student, winter 2022-

Co-supervisor of Valentine Soto, PhD student at Institut Fourier, Grenoble, Winter 2020 - Fall 2024.

Supervisor of Eric Hanson (joint with Hugh Thomas), postdoctoral student, UQAM and Sherbrooke, Fall 2021 - Summer 2023.

Supervisor of Rose-Line Baillargeon, Master's student, Winter 2021 - Fall 2023.

Supervisor of Gabrielle Pelletier, Master's student, Fall 2020 - Fall 2021. Cégep Drummond

Supervisor of Marco Armenta (joint with Ibra, Shiping, Pierre-Marc Jodoin), postdoctoral student, Fall 2019 - Summer 2021. He is currently Professionnel de recherche at the Institut Quantique in Sherbrooke.

Supervisor of Benjamin Blanchette, doctoral student, Fall 2019 - Summer 2023.

Supervisor of Sunny Roy, Master's student, summer 2019 - Fall 2021.

Supervisor of Ndongo Diouf, postdoctoral student, 2019-2020.

Supervisor of Zhi Cheng, postdoctoral student, summer 2017.

Supervisor of Min Huang, postdoctoral student (with Shiping Liu), summer 2017 – summer 2019

Supervisor of Denis Langford, Ph.D. student, Winter 2019 –

Supervisor of Souheila Hassoun, Ph.D. student, Fall 2016 – Summer 2021. 2021 Recipient of Carl Herz prize recognising best PhD thesis in Quebec. Zelevinsky postdoctoral Fellow Northeastern, Boston, Fall 2021 – Summer 2024.

Recent (co-)supervision of undergraduate students

- * Yongning Yan, China, summer 2025, Mitacs internship.
- * William Forget, summer 2025, NSERC USRA.
- * Laurianne Baril, winter 2025, NSERC USRA. Project: Compression multiplicity in Topological Data Analysis.
- * Tanmay Bakshi, Mitacs internship, project: Quiver analysis of neural networks, Summer 2024. Now in MSE program in Scientific Computing at the University of Pennsylvania (UPenn).
- * Riju Bindua, Mitacs internship, project: D_4 -filtered graphs in TDA, Summer 2024.
- * Samuel Leblanc, Winter 2024, projects: Invariants for persistence modules, analysis of quiver networks in AI
- * Jon Pilarte, Fall 2022-Winter 2023, Project: Multiparameter persistence modules
- * Camille Larivière, Summer 2021, ISM scholarship, Project: Simple groups
- * François Beaudry, Summer 2021, Project: Grothendieck group of exact category
- * Toby Caouette, Summer 2021, Project: Grothendieck group of an exact category.
- * Samuel Lalumière-Lavoie, Winter 2020, research initiation. Project: extriangulated categories.
- * Rose-Line Baillargeon, Fall 2019, NSERC USRA. project: Isomorphism of lattices between exact structures and subbifunctors of Ext^1 .
- * Louis-Simon Létourneau, Fall 2019, research initiation. Project: 2d-persistence theory
- * Gabriel Dupuis, Fall 2019, research initiation. Project: 2d-persistence theory