

SCOTT M. LALONDE

CURRICULUM VITAE

The University of Texas at Tyler
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EMPLOYMENT

Associate Professor. The University of Texas at Tyler, Tyler, TX.	2020–present
Assistant Professor. The University of Texas at Tyler, Tyler, TX.	2014–2020
Graduate Student Instructor. Dartmouth College, Hanover, NH.	2011–2014
Graduate Teaching Assistant. Dartmouth College, Hanover, NH.	2009–2011
Research Assistant. Clarkson University, Potsdam, NY.	2008–2009

EDUCATION

PhD in Mathematics. Dartmouth College, Hanover, NH. Thesis: <i>Nuclearity and Exactness for Groupoid Crossed Product C^*-algebras</i> Advisor: Dana P. Williams	June 2014
A.M. in Mathematics. Dartmouth College, Hanover, NH.	June 2011
M.S. in Mathematics. Clarkson University, Potsdam, NY. Thesis: <i>A Computational Approach to Measuring Homeomorphic Defect</i> Advisors: Erik Bollt and Joseph Skufca	May 2009
B.S. in Mathematics. Clarkson University, Potsdam, NY. <i>With Great Distinction.</i>	May 2008

PUBLICATIONS

(An asterisk indicates that the coauthor is an undergraduate student.)

JOURNAL ARTICLES

1. *On some permanence properties of exact groupoids*, Houston J. Math, **46** (2020), no. 1, 151–187. ([arXiv](#)).
2. *Some consequences of the stabilization theorem for Fell bundles over exact groupoids*, J. Operator Theory, **81** (2019), no. 2, 335–369. ([arXiv](#))
3. *Condition (K) for inverse semigroups and the ideal structure of their C^* -algebras* (with David Milan and Jamie Scott*), J. Algebra, **523** (2019), 119–153. ([arXiv](#), [DOI](#))
4. *Amenability and uniqueness for groupoids associated with inverse semigroups* (with David Milan), Semigroup Forum, **95** (2017), no. 2, 321–344. ([arXiv](#), [DOI](#))

5. *Allowed patterns of symmetric tent maps via commutator functions* (with Kassie Archer), *SIAM J. Discrete Math.*, **31** (2017), no. 1, 317–334. ([arXiv1606.01317](#), [DOI](#))
6. *Equivalence and exact groupoids*, *Houston J. Math.*, **42** (2016), no. 4, 1267–1290. ([arXiv](#))
7. *Nuclearity and exactness for groupoid crossed products*, *J. Operator Theory*, **74** (2015), no. 1, 213–245. ([arXiv](#), [DOI](#))
8. *Understanding the effects of polymer extrusion filter layering configurations using derivative-free optimization* (with K.R. Fowler and E.W. Jenkins), *Optim. Eng.*, **11** (2010), no. 2, 339–354. ([DOI](#))
9. *A simulation-based optimization approach to polymer extrusion filter design* (with K.R. Fowler, E.W. Jenkins, and C.L. Cox), *Filtration*, **9** (2009), no. 3, 224–230.
10. *A simulation-based optimization approach to polymer extrusion filter design* (with K.R. Fowler, E.W. Jenkins, and C.L. Cox), the Proceedings of the American Filtration and Separations Society Annual Conference, May 2008.

IN PREPARATION

11. *On the likelihood of certain allowed patterns for shift maps* (with Kassie Archer).
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HONORS AND AWARDS

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| Teaching and Learning Award | April 2018 |
| <i>UT Tyler Center for Excellence in Teaching and Learning (CETL)</i> | |
| Awarded a \$2,000 stipend to implement the proposal “Improved Learning in Calculus Courses at UT Tyler”, which involves revamping the calculus curriculum to include active learning and a flipped classroom approach. | |
| Faculty Teaching Award | April 2017 |
| <i>UT Tyler Mathematics Department</i> | |
| Given to a member of the UT Tyler mathematics faculty in recognition of excellence in teaching. | |
| Kenneth P. Bogart Teaching Award | November 2013 |
| <i>Dartmouth College Mathematics Department</i> | |
| Given to a fifth-year graduate student who best exemplifies outstanding dedication to and excellence in advancing the educational mission of the department. | |
| AMS Sectional Meeting Travel Grant | Fall 2013 |
| Outstanding Graduate Student Teacher | 2012 |
| <i>Dartmouth Center for the Advancement of Learning</i> | |
| Nominated by undergraduate students from Math 1 (Calculus with Algebra). | |
| Dartmouth College Graduate Fellowship | 2009–2014 |
| Hamlin-Darraugh Award | 2008 |
| <i>Clarkson University Mathematics Department</i> | |
| Given to the senior mathematics or computer science major who has made a noteworthy contribution in mathematics or computer science while at Clarkson. | |

R. Gerald Bradshaw Award

2007

Clarkson University Mathematics Department

Given to the outstanding junior mathematics or computer science major.

SELECTED PRESENTATIONS

INVITED TALKS

Allowed patterns of dynamical systems

Towson University REU Seminar

June 2022

Morita equivalence of groupoids and their C^ -algebras*

Workshop on Cuntz-Pimsner Algebras, University of Houston

December 2019

Allowed and forbidden patterns of dynamical systems via commuter functions

Mathematics Colloquium, Texas A&M University-Commerce

March 2019

Fell bundles: Unifying C^ -algebras associated to groupoids*

Linear Analysis Seminar, Texas A&M University

September 2017

A brief overview of groupoid C^ -algebras*

Analysis Seminar, University of Houston

April 2017

Some recent progress on C^ -algebras associated to groupoids*

Analysis Seminar, University of Houston

April 2017

Groupoid dynamical systems, C^ -algebras, and crossed products*

Mathematics Colloquium, Sam Houston State University

March 2017

Permanence properties of exact groupoids

Analysis Seminar, University of Houston

September 2016

Equivalence and exact groupoids

Workshop in Analysis and Probability Seminar, Texas A&M University

July 2014

Equivalence theorems for groupoids and their C^ -algebras*

University of Texas at Tyler

March 2014

Dartmouth College Mathematics Colloquium

February 2014

Results on nuclearity and exactness for groupoid crossed product C^ -algebras*

Joint Mathematics Meetings, Baltimore, MD

January 2014

Special Session on Classification Problems in Operator Algebras

Groupoid equivalence and exactness

AMS Fall Central Sectional Meeting, Washington University in St. Louis

October 2013

Special Session on Groupoids in Analysis and Geometry

OTHER RESEARCH PRESENTATIONS

Uniqueness theorems and ideal structure for inverse semigroup C^ -algebras via groupoids*

Groupoidfest 2019, University of Nevada, Reno

November 2019

- Stabilization for Fell bundles over exact groupoids*
Great Plains Operator Theory Symposium, Miami University May 2018
- Permanence properties of exact groupoids*
Great Plains Operator Theory Symposium, Texas Christian University May 2017
Joint Mathematics Meetings, Atlanta, GA January 2017
- Amenability and uniqueness for groupoids associated to inverse semigroups*
Great Plains Operator Theorem Symposium, University of Illinois May 2016
- Equivalence and exact groupoids*
Joint Mathematics Meetings, San Antonio, TX January 2015
- Nuclearity and exactness of groupoid crossed products*
Great Plains Operator Theory Symposium, University of California, Berkeley May 2013
- Exact groupoids and crossed products*
New Hampshire Operator Theory Symposium, University of New Hampshire May 2013
- Properties of groupoid dynamical systems and their crossed products* (Poster)
Dartmouth Graduate Poster Session April 2013
- Properties of groupoid dynamical systems and associated crossed product C^* -algebras* (Poster)
Joint Mathematics Meetings, San Diego, CA January 2013
- Nuclearity of groupoid crossed products*
New Hampshire Operator Theory Symposium, Dartmouth College October 2012
- A computational approach to measuring homeomorphic defect*
M.S. Thesis Defense, Clarkson University April 2009
- Monte Carlo integration and mostly conjugacy*
Seminar in Nonlinear Processes, Clarkson University March 2009
- Maximizing the performance of a polymer extrusion filter via derivative-free optimization techniques*
Thirteenth Annual McNair Research Conference, The University at Buffalo July 2007

EDUCATIONAL AND STUDENT-ORIENTED TALKS

- Patternicity, Prediction, and Proof*
Math Club, University of Texas at Tyler October 2018
- What we've got here is failure to conjugate*
Math Club, University of Texas at Tyler November 2017
- Stokes and the surveyor's shoelaces*
Math Club, University of Texas at Tyler February 2017
- Fun with Fourier analysis*
Math Club, University of Texas at Tyler April 2015
SIAM Chapter Meeting, Dartmouth College May 2014
Mathematical Adventures & Diversions, Lafayette College February 2014

Projects in an Introductory Abstract Algebra Course

Joint Mathematics Meetings, San Antonio, TX

January 2015

MAA Session on Teaching or Learning Advanced Mathematics

MENTORING**Masters Thesis Advisor**Phung Tran, *Equivalent constructions of Cartan pairs*

2017–2018

M.S. Thesis Committee MemberFariha Mahfuz (UT Tyler), *Applications of Markov chains*

Spring 2021

Humberto Bautista Serrano (UT Tyler), *On the intersection number of finite groups*

Spring 2019

Ph.D. Committee MemberNishant Suri (University of Houston), *Naimark's problem for graph C^* -algebras*

Spring 2017

Senior Capstone ProjectsRobert Plymail, *The axiom of choice*

Fall 2020

Kyle Stoltz, *All one polynomials and perfect numbers*

Spring 2020

Alexandrea Terranova, *Areas, volumes, and the isoperimetric problem*

Spring 2019

Vincent Villalobos, *Path groupoids of directed graphs*

Fall 2017

Kayla Cook, *Elliptic curve factoring algorithms*

Spring 2016

Honors Program Contract CoursesMelissa Rodriguez-Sanchez, *Proofs in calculus*

Fall 2022

Ayush Kumar, *An equivalent definition of open balls*

Spring 2021

Jason Gutsch, *Modeling neuron activity with differential equations*

Fall 2015

PROFESSIONAL DEVELOPMENT & WORKSHOPS**UT Tyler Center for Excellence in Teaching and Learning**

2015–present

Attended multiple workshops designed to enhance learning and instruction.

Texas NExT Fellow

2016–2018

Dartmouth College Active Learning Institute

December 2013

Dartmouth Center for the Advancement of Learning

Invited to attend a two-day workshop on course design, collaborative learning, and effective use of technology for active learning. The workshop is tailored toward challenges identified in advance by the participants.

Dartmouth Mathematics Teaching Seminar

Summer 2011

An intensive summer-long course taken by graduate students who have recently advanced to PhD candidacy. Involves serious discussion of educational philosophies, classroom techniques, and course design. Ends with design and instruction of two week-long Math Camps for local middle and high school students.

SERVICE

TO STUDENTS

COMAP Mathematical Contest in Modeling (MCM) – Team advisor Co-advised the UT Tyler teams as they attempted to solve real-world problems over the course of 3–4 days.	2016–present
Lyceum Student Research Showcase – Judge Judged undergraduate research posters and talks.	2017–present
Putnam Competition – Team advisor Co-advised the UT Tyler team for the William Lowell Putnam Mathematical Competition.	2015–2020
UT Tyler Math Club – Co-advisor Supervised and organized activities (together with Kassie Archer).	2018–2019
UT Tyler Co-Curricular Funds – College of Arts & Sciences Awarded \$1,000 (together with Kassie Archer) to allow UT Tyler students to attend the 2019 Joint Mathematics Meetings.	2018–2019
SIMIODE SCUDEM III – Team co-advisor Coached two UT Tyler teams (with Regan Beckham) for the annual differential equations modeling challenge.	October 2018
LSAMP Poster Session – Judge Judged undergraduate research posters for the UT System Louis Stokes Alliance for Minority Participation (UT LSAMP) summer research academy.	August 2016

TO THE UNIVERSITY

Mathematics Department Committees (* indicates chair)	
<i>Awards Committee*</i>	2017–present
<i>Curriculum Committee</i>	Biennially
<i>Governance Committee</i>	2018–2019
<i>Hiring Committee</i>	2018–2019
<i>Graduate Committee</i>	Biennially
<i>Ph.D. Proposal Committee*</i>	2020–present
<i>Technology Committee*</i>	2017–present
UT Tyler Math Department Webmaster	2016–present
UT Tyler WeBWorK Administrator	2015–2021

TO THE PROFESSION

Reviewer <i>Mathematical Reviews</i>	2019–present
Journal Referee <i>Discrete Applied Mathematics</i> <i>Journal of the Australian Mathematical Society</i>	2018–present

Mathematics

Open Mathematics

Topology and Its Applications

Book Reviewer

2021

Foundations for Undergraduate Research in Mathematics series (Birkhauser)

TO THE COMMUNITY

Guest Appearance – KYTX News

March 2018

Appeared on a CBS 19 newscast to discuss the probability of choosing a perfect college basketball bracket as part of their March Madness coverage.

EDUCATIONAL OUTREACH

Johns Hopkins Center for Talented Youth – Instructor

October 2013

Dartmouth College

The Magic and Mystery of Hexaflexagons

GWISE Science Day – Workshop instructor

April 2013

Dartmouth College

Conducted 10-minute exploratory sessions with middle-school students about the Möbius strip and its properties.

Exploring Mathematics – Instructor

August 2011

Dartmouth College

Planned and conducted two intensive, week-long workshops for local middle- and high-school students. The workshops focused on elementary number theory and cryptography and the mathematics of various games and puzzles.

COURSES TAUGHT

Assistant/Associate Professor, The University of Texas at Tyler.

2014–present

HNRS 2413 – *Honors Calculus I*

HNRS 2414 – *Honors Calculus II*

MATH 2312 – *Precalculus*

MATH 2413 – *Calculus I*

MATH 2414 – *Calculus II*

MATH 3203 – *Matrix Methods in Science and Engineering*

MATH 3305 – *Ordinary Differential Equations*

MATH 3345 – *Analysis I*

MATH 3404 – *Multivariate Calculus*

MATH 3425 – *Foundations of Mathematics*

MATH 4341 – *Real Analysis II*

MATH 4342 – *Introduction to Complex Variables*

MATH 4160 – *Senior Seminar I*

MATH 4161 – *Senior Seminar II*

MATH 5331 – *Algebra I*

MATH 5333 – *Topics in Algebra*

MATH 5341 – *Real Analysis I*

MATH 5342 – *Real Analysis II*

MATH 5343 – *Topics in Real Analysis*

MATH 5391 – *Selected Topics in Math (Differential Topology)*

Graduate Instructor, Dartmouth College.

2011–2014

Wrote syllabi, homework, and exams, and oversaw student presentations. Enjoyed freedom over the design, implementation, and instruction of the courses.

Courses taught:

MATH 31 – *Topics in Algebra*

Summer 2013

MATH 31 – *Topics in Algebra*

Summer 2012

MATH 1 – *Calculus with Algebra*

Fall 2011

TA Training Leader, Dartmouth College

Fall 2013

Led biweekly sessions to prepare first and second year math graduate students for their duties as teaching assistants.

Teaching Assistant, Dartmouth College.

2009–2011

Held nightly tutorial sessions and assisted with the grading of exams.

MATH 22 – *Linear Algebra with Applications*

Spring 2011

MATH 11 – *Multivariable Calculus for Two-Term AP First-Year Students*

Fall 2010

MATH 8 – *Calculus of Functions of One and Several Variables*

Spring 2010

MATH 23 – *Differential Equations*

Fall 2009

Teaching Assistant, Clarkson University.

2006–2008

Ran weekly recitation sections and graded homework and quizzes.

MA 232 – *Elementary Differential Equations*

2006–2008

REFERENCES

Available upon request.