Leo Livshits
Curriculum Vita

PERSONAL DATA

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EDUCATION

Ph.D.	*University of Toronto*	1991
M.Sc.	*University of Toronto*	1986
B.Mat.	*University of Waterloo*	1985

POSITIONS HELD

Professor	*Colby College*	2008-present
Associate Professor	*Colby College*	2001-2008
Assistant Professor	*Colby College*	1994-2001
Visiting Scholar	*Carleton University*	1998-1999
Assistant Professor	*Bishop's University*	1992-1994
Assistant Professor	*Central Michigan University*	1991-1992

RESEARCH PUBLICATIONS

Appeared

1. "A Kadison Transitivity Theorem for C*-semigroups"
(with G.W. MacDonald, L. Marcoux, H. Radjavi)
Journal of Functional Analysis, 254, #1, 246-266 (2008)

2. "Approximate permutability of traces on semigroups of matrices"
(with J. Bernik, R. Drnovšek, T. Košir, M. Mastnak, M. Omladič, and H. Radjavi)
Operators and Matrices, 1, #4, 455-467 (2007)

3. "Topologically transitive matrix semigroups"
(with G.W. MacDonald, H. Radjavi)
Operators and Matrices, 1, # 2, 165-179 (2007)

4. "Semitransitive subspaces of operators"
(with Semitransitivity Working Group at LAW'05, Bled)
Electronic Journal of Linear Algebra, 15, 225-238 (2006)

5. "Schur algebras over function algebras"
(with S-C. Ong, S-W. Wang)
Houston Journal of Mathematics, 30, # 4, 1195-1217 (2004)

6. "On decomposability of periodic semigroups of non-negative matrices"
Linear Algebra and Its Applications, 383, 163-174 (2004)

7. "Operator semigroups for which reducibility implies decomposibility"
(with G.W. MacDonald, B. Mathes, H. Radjavi)
Positivity, 7, # 3, 195-202 (2003)

8. "Matrix semigroups with commutable rank"
(with G.W. MacDonald, B. Mathes, J. Okniński, H. Radjavi)
Semigroup Forum, 67, 288-316 (2003)

9. "An irreducible semigroup of non-negative square-zero operators"
(with R. Drnovšek, D. Kokol-Bukovšek, G. W. MacDonald, M. Omladič, H. Radjavi)
Journal of Integral Equations and Operator Theory, 42, 449-460 (2002)

10. "On band algebras"
(with G.W. MacDonald, B. Mathes, H. Radjavi)
Journal of Operator Theory; 46, #3: 545-560 (2001)

11. "Banach space duality in absolute Schur algebras"
(with S-C. Ong, S-W. Wang)
Journal of Integral Equations and Operator Theory, 41, # 3: 343-359 (2001)

12. "n-Transitivity and the complementation property"
(with G. W. MacDonald)
Linear Algebra and Its Applications, 329: 157-169 (2001)

13. "Cone-transitive matrix semigroups"
(with G.W. MacDonald, H. Radjavi)
Linear and Multilinear Algebra, 47, 313-350 (2000)

14. "On operator bands"
(with R. Drnovšek, G.W. MacDonald, B. Mathes, H. Radjavi, P. Šemrl)
Studia Mathematica, 139, # 1: 91-100 (2000)

15. "On transitive linear semigroups"
(with R. Drnovšek, G.W. MacDonald, B. Mathes, H. Radjavi, P. Šemrl)
Linear Algebra and Its Applications, 305: 67-86 (2000)

16. "Transitive linear semigroups"
Obzornik za matematiko in fiziko, 46, # 2: 53-56 (1999)

17. "Reducible semigroups of idempotent operators"
(with G.W. MacDonald, B. Mathes, H. Radjavi)
Journal of Operator Theory, 40, # 1: 35–69 (1998)

18. "Continuity of Schur block-multiplication maps with respect to various operator topologies"
Journal of Operator Theory, 34: 17-56 (1995)

19. "A note on $0-1$ Schur multipliers"
Linear Algebra and Its Applications, 222: 15-22 (1995)

20. "Block-matrix generalizations of finite-dimensional Schur products and Schur multipliers"
Linear and Multilinear Algebra, 38: 59-78 (1994)

21. "On invertibility of the map $T \longrightarrow STS^{-1} + S^{-1}TS$"
(with S.-C. Ong)
Linear Algebra and Its Applications, 183: 117-129 (1993)

22. "Locally finite-dimensional spaces of operators"
Proceedings of AMS, 119, #1: 165-169 (1993)

Papers in preprint form

1. "A note on Cantor Group"
(with Chris Dow (student), Ben Mathes, George Welch)

2. "Construction of Jordan-form made easy"
(with G.W. MacDonald, B. Mathes, H. Radjavi)

CONFERENCE AND WORKSHOP PRESENTATIONS

1. "When "nearly" is close enough: collections of non-negative matrices that are near to those with standard triangularization, have standard triangularization of their own."
Invited speaker
5-th International Linear Algebra Workshop
Kranjska Gora, Slovenia (2008)

2. "Playing with the Bands in the 60's:
Heydar Radjavi and Semigroups of Idempotents"
Invited Speaker
International Linear Algebra Conference in Honor Of Heydar Radjavi's 70-th Birthday
Bled, Slovenia (2005)

3. "Matrix semigroups with multiplicative diagonals"
11-th Conference of the International Linear Algebra Society (ILAS)
University of Coimbra, Portugal (2004)

4. "Matrix semigroups with multiplicative DIAPRs, and other childish pursuits"
Invited speaker
AARMS Research Session in Linear Algebra; APICS Mathematics, Statistics and Computer Science conference
UPEI, Charlottetown, PE, Canada (2003)

5. "Linear semigroups with commutable rank"
Invited speaker and research group leader
International Linear Algebra Workshop
Bled, Slovenia (2002)

6. " On decomposable semigroups of nonnegative matrices satisfying the equation $A^n = A$"
9-th Conference of the International Linear Algebra Society (ILAS)
Technion, Haifa, Israel (2001)

7. "Banach space duality in absolute Schur algebras"
Great Plains Operator Theory Symposium (2000)

8. "Transitive linear semigroups"
Invited speaker and research group leader
International Linear Algebra Workshop
Bled, Slovenia (1999)

9. "Reducibility and triangularizability of semigroups of idempotent operators"
   Canadian Operator Theory Symposium
   Charlottetown, PEI, Canada (1999)

10. "Minimal transitive semigroups of operators"
    Invited speaker
    Canadian Mathematical Society Meeting, Special Session
    Saint John, NB, Canada (1998)

11. "Reducibility of Operator Bands"
    Great Plains Operator Theory Symposium (1996)

12. "Block-matrix generalizations of of infinite-dimensional Schur products and Schur multipliers"
    Canadian Operator Theory Symposium (1993)

13. "Locally finite-dimensional spaces of operators"
    Great Plains Operator Theory Symposium (1992)

14. "Continuity properties of Schur multipliers with respect to weak, strong and norm topologies on $\mathcal{B}(\mathcal{H})$"
    Canadian Operator Theory Symposium (1992)

COLLOQUIUM AND SEMINAR PRESENTATIONS

1. "What can we learn from matrix diagonals?"
   Department of Mathematics Colloquium
   Colby College (February 2009)

2. "The effects of the transit of Venus, Earth's irregularity over the Mohorovic discontinuity, and β-lactoglobulin deficiency on the theory of commuting populations of square arrays of non-negative numbers."
   2004 Summer Seminar Series
   Colby College (July 2004)

3. "Decomposing periodic semigroups of non-negative matrices"
   Science Division lunch presentation
   Colby College (April 2004)

4. "Non-negative matrices, many at a time"
   Departmental Mathematics Colloquium
   Colby College (2004)

5. "Complete decomposability of semigroups of non-negative matrices"
   Invited seminar speaker
   Department of Pure Mathematics
   University of Waterloo
   Waterloo, ON, Canada (2004)

6. "On operator bands"
   Invited seminar speaker
   Department of Pure Mathematics
   University of Waterloo
   Waterloo, ON, Canada (1999)

7. "About not exactly groups of matrices satisfying $A^2 = A$ exactly"
   Invited colloquium speaker
   Department of Mathematics
   Central Michigan University
   Mt. Pleasant, MI (1999)

8. "*One who dares to wander in vast matrix lands*
   A subject of great fascination shall find.
   My heart goes aflutter at the mention of Bands,
   of the non-rubber, non-wedding, non-musical kind."
   L.L.

   Natural Science Division lunchtime presentation
   Colby College (1999)

9. "The second most famous equation in linear algebra"
   Mathematics Department Colloquium
   Colby College (1999)

10. "Weighted Voting Systems"
    Departmental Mathematics Colloquium
    Colby College (1996)

11. "Recent results on Schur products"
    Colloquium speaker
    Department of Mathematics
    Bishop's University
    Lennoxville, PQ, Canada (1992)

12. "On invertibility of the map $T \longrightarrow STS^{-1} + S^{-1}TS$"
    Invited seminar speaker
    Department of Mathematics
    University of Toronto
    Toronto, ON, Canada (1992)

13. A series of colloquium and seminar presentations on Schur products
    Department of Mathematics
    Central Michigan University
    Mt. Pleasant, MI (1991-92)

CONFERENCES AND WORKSHOPS ATTENDED

1. Workshop on nonnegative matrices, Hamilton Institute, NUI-Maynooth, Ireland (2004)
2. 7-th workshop on numerical ranges and numerical radii (WONRA), University of Coimbra, Portugal (2004)
3. Deltech diversity workshop, Colby College (February 2004)
4. *World Mathematical Year 2000 Symposium on the Legacy of John Charles Fields*
5. *Canadian Operator Theory Symposium* (2000)
6. Workshop on incorporating technology into calculus
   instruction, Rockhurst College, Kansas City, MO (1998)
7. *Canadian Operator Theory Symposium* (1997)
8. *Canadian Operator Theory Symposium* (1996)
9. *Great Plains Operator Theory Symposium* (1995)
10. Workshop "*Mathematica in Calculus*,"
    Bowdoin College (1995)

OTHER PROFESSIONAL ACTIVITIES

1. Refereed for *Proceedings of AMS, Journal of Linear Algebra and Its Applications, Operators and Matrices, Journal of the Korean Mathematical Society, International Journal of Mathematics and Mathematical Sciences, Houston Journal of Mathematics.*

2. Provided solutions to Problems in IMAGE Problems Corner ("IMAGEïs the bulletin of the International Linear Algebra Society)

   (a) Problem 32-2 (proposed by Alexander Kovačec, Universidade de Coimbra, Coimbra, Portugal)
   Published as the solution 31-2.2 in IMAGE 33, page 25, Fall 2004.

   (b) Problem 32-6 (proposed by G. Trenkler, Universität Dortmund, Dortmund, Germany).
   Published as the solution 32-6.1 in IMAGE 33, page 27, Fall 2004.

   (c) Problem 32-7 (proposed by G. Trenkler, Universität Dortmund, Dortmund, Germany and by D. Trenkler, University of Ostanbrück, Ostanbrück, Germany).
   Published as the solution 32-7.1 in IMAGE 33, page 31, Fall 2004.

   (d) Problem 31-1 (an open problem proposed by J. Groß and G. Trenkler, Universität Dortmund, Dortmund, Germany).
   Published as the sole solution 31-1.1 in IMAGE 32, page 20, April 2004.

   (e) Problem 31-2 (posed by H. Ricardo, Medgar Evars College (CUNY) Brooklyn, New York).
   Published as solution 31-2.2 as one of four published and mentioned solutions in IMAGE 32, page 22, April 2004.

   (f) Problem 31-3 (posed by Y. Tian, Queen's University, Kingston, Canada).
   One of four published and mentioned solutions in IMAGE 32, page 25, April 2004.

3. Reviewer for *AMS Mathematical Reviews* (1992-present)
   Reviewed:

   2005: W. D. Banks and A. Harcharras, *Proc. Amer. Math. Soc.* **132** (2004), no. 7, 2121–2125; MR 2053985

   2005: Chaisuriya, P.; Ong, S.-C. *Southeast Asian Bull. Math.* **26** (2003), no. 6, 889–898. MR2021646

   2005: T. Shulman, *Methods Funct. Anal. Topology* **9** (2003), no. 3, 252–261; MR 2005901

   2002: Yang, Zhong-peng; Feng, Xiao-xia *Pure Appl. Math. (Xi'an)* **17** (2001), no. 1, 86–89 MR1827496

   2002: Ivanov I.G., Hasanov V.I., Minchev B.V., *Linear Algebra Appl.* **326** (2001), 27–44; CNO CMP 1 815 949

   2001: Perov, A. I., *Dokl. Akad. Nauk* **368** (1999), no. 5, 601–603; CNO CMP 1 748 505

   2000: P. Chaisuriya and S.-C. Ong, *SIAM J. Matrix Anal. Appl.* **20** (1999), no. 3, 596–605 (electronic); CNO CMP 1 685 044

   2000: A. J. B. Ward, *Internat. J. Math. Ed. Sci. Tech.* **29** (1998), no. 2, 179–186; MR 2000a:15026

   1998: K. Kitamura and Y. Seo, *Math. Japon.* **45** (1997), no. 2, 211–216; MR 98e:15033

   1997: M. Omladič and H. Radjavi, *Linear Algebra Appl.* **251** (1997), 59–72; MR 97k:47033

   1997: H. Neudecker, S. Liu and W. Polasek, *Statistics* **26** (1995), no. 4, 365–373; MR 97b:15033

   1996: M. Lacruz, *Linear Algebra Appl.* **219** (1995), 157–163; MR 96e:15046

   1994: E. Marques de Sá and M. -J. Sodupe, *Linear Algebra Appl.* **193** (1993), 1–9; MR 94i:15026

   1994: R. Mathias, *Linear Algebra Appl.* **184** (1993), 71–78; MR 94b:15019

   1993: È. I. Grudo, *Vestsī Akad. Navuk Belarusī Ser. Fīz. Mat. Navuk* **127** (1992), no. 1, 102–103; MR 93i:15018

4. Reviewer for *MAA Online*
   Reviewed:

   (a) "The William Lowell Putnam Mathematical Competition, 1995-2000", by K. S. Kedlaya, B. Poonen and R. Vakil

   (b) "The Cauchy-Schwarz Master Class," by J. Michael Steele

5. Textbook reviewer for Springer (Key College Publishing)
   Reviewed: "Basic Calculus: From Archimedes to Newton to its Role in Science"(2004)

OTHER PROFESSIONAL DEVELOPMENT

Society of Actuaries exams 100, 110, 130, 135, 140