

# Leo Livshits

## Curriculum Vita

### PERSONAL DATA

Name: Leonid (Leo, Leonya) Livshits

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### EDUCATION

Ph.D. (under P. Rosenthal)	<i>University of Toronto</i>	1991
M.Sc.	<i>University of Toronto</i>	1986
B.Mat.	<i>University of Waterloo</i>	1985

### POSITIONS HELD

Associate Professor (tenured)	<i>Colby College</i>	2001-present
Assistant Professor	<i>Colby College</i>	1994-2001
Visiting Scholar	<i>Carleton University</i>	1998-1999
Assistant Professor	<i>Bishop's University</i>	1992-1994
Assistant Professor	<i>Central Michigan University</i>	1991-1992

### RESEARCH PUBLICATIONS

#### Appeared

1. "Schur algebras on sequence spaces over Banach algebras"  
(with S-C. Ong, S-W. Wang)  
*Houston Journal of Mathematics*, 30, # 4, 1195-1217 (2004)
2. "On decomposability of periodic semigroups of non-negative matrices"  
*Linear Algebra and Its Applications*, 383, 163-174 (2004)
3. "Operator semigroups for which reducibility implies decomposibility"  
(with G.W. MacDonald, B. Mathes, H. Radjavi)  
*Positivity*, 7, # 3, 195-202 (2003)
4. "Matrix semigroups with commutable rank"  
(with G.W. MacDonald, B. Mathes, J. Okniński, H. Radjavi)  
*Semigroup Forum*, 67, 288-316 (2003)
5. "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)
6. "On band algebras"  
(with G.W. MacDonald, B. Mathes, H. Radjavi)  
*Journal of Operator Theory*; 46, #3: 545-560 (2001)

7. “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)
8. “n-Transitivity and the complementation property”  
(with G. W. MacDonald)  
*Linear Algebra and Its Applications*, 329: 157-169 (2001)
9. “Cone-transitive matrix semigroups”  
(with G.W. MacDonald, H. Radjavi)  
*Linear and Multilinear Algebra*, 47, 313-350 (2000)
10. “On operator bands”  
(with R. Drnovšek, G.W. MacDonald, B. Mathes, H. Radjavi, P. Šemrl)  
*Studia Mathematica*, 139, # 1: 91-100 (2000)
11. “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)
12. “Transitive linear semigroups”  
*Obzornik za matematiko in fiziko*, 46, # 2: 53-56 (1999)
13. “Reducible semigroups of idempotent operators”  
(with G.W. MacDonald, B. Mathes, H. Radjavi)  
*Journal of Operator Theory*, 40, # 1: 35-69 (1998)
14. “Continuity of Schur block-multiplication maps with respect to various operator topologies”  
*Journal of Operator Theory*, 34: 17-56 (1995)
15. “A note on 0 – 1 Schur multipliers”  
*Linear Algebra and Its Applications*, 222: 15-22 (1995)
16. “Block-matrix generalizations of finite-dimensional Schur products and Schur multipliers”  
*Linear and Multilinear Algebra*, 38: 59-78 (1994)
17. “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)
18. “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)
3. “An intuitive definition of determinant”

## CONFERENCE AND WORKSHOP PRESENTATIONS

1. “Matrix semigroups with multiplicative diagonals”  
*11-th Conference of the International Linear Algebra Society (ILAS)*  
University of Coimbra, Portugal (2004)
2. “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)
3. “Linear semigroups with commutable rank”  
Invited speaker and research group leader  
*International Linear Algebra Workshop*  
Bled, Slovenia (2002)
4. “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)
5. “Banach space duality in absolute Schur algebras”  
*Great Plains Operator Theory Symposium* (2000)
6. “Transitive linear semigroups”  
Invited speaker and research group leader  
*International Linear Algebra Workshop*  
Bled, Slovenia (1999)
7. “Reducibility and triangularizability of semigroups of idempotent operators”  
*Canadian Operator Theory Symposium*  
Charlottetown, PEI, Canada (1999)
8. “Minimal transitive semigroups of operators”  
Invited speaker  
*Canadian Mathematical Society Meeting, Special Session*  
Saint John, NB, Canada (1998)
9. “Reducibility of Operator Bands”  
*Great Plains Operator Theory Symposium* (1996)
10. “Block-matrix generalizations of of infinite-dimensional Schur products and Schur multipliers”  
*Canadian Operator Theory Symposium* (1993)
11. “Locally finite-dimensional spaces of operators”  
*Great Plains Operator Theory Symposium* (1992)
12. “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. “The effects of the transit of Venus, Earth’s irregularity over the Mohorovic discontinuity, and  $\beta$ -lactoglobulin deficiency on the theory of commuting populations of square arrays of non-negative numbers.”  
2004 Summer Seminar Series  
Colby College (July 2004)
2. “Decomposing periodic semigroups of non-negative matrices”  
Science Division lunch presentation  
Colby College (April 2004)
3. “Non-negative matrices, many at a time”  
Departmental Mathematics Colloquium  
Colby College (2004)
4. “Complete decomposability of semigroups of non-negative matrices”  
Invited seminar speaker  
Department of Pure Mathematics  
University of Waterloo  
Waterloo, ON, Canada (2004)
5. “On operator bands”  
Invited seminar speaker  
Department of Pure Mathematics  
University of Waterloo  
Waterloo, ON, Canada (1999)
6. “About not exactly groups of matrices satisfying  $A^2 = A$  exactly”  
Invited colloquium speaker  
Department of Mathematics  
Central Michigan University  
Mt. Pleasant, MI (1999)
7. “*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)
8. “The second most famous equation in linear algebra”  
Mathematics Department Colloquium  
Colby College (1999)
9. “Weighted Voting Systems”  
Departmental Mathematics Colloquium  
Colby College (1996)
10. “Recent results on Schur products”  
Colloquium speaker  
Department of Mathematics  
Bishop’s University  
Lennoxville, PQ, Canada (1992)

11. “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)
12. 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. Solutions to Problems in IMAGE Problems Corner (“IMAGE” is the bulletin of the International Linear Algebra Society)
  - (a) 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.
  - (b) 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.
  - (c) 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.
2. Reviewer for *AMS Mathematical Reviews* (1992-present)  
Reviewed:
  - (a) W. D. Banks and A. Harcharras, *Proc. Amer. Math. Soc.* **132** (2004), no. 7, 2121–2125; MR 2053985
  - (b) T. Shulman, *Methods Funct. Anal. Topology* **9** (2003), no. 3, 252–261; MR 2005901
  - (c) Ivanov I.G., Hasanov V.I., Minchev B.V., *Linear Algebra Appl.* **326** (2001), 27–44; CNO CMP 1 815 949
  - (d) Perov, A. I., *Dokl. Akad. Nauk* **368** (1999), no. 5, 601–603; CNO CMP 1 748 505
  - (e) P. Chaisuriya and S.-C. Ong, *SIAM J. Matrix Anal. Appl.* **20** (1999), no. 3, 596–605 (electronic); CNO CMP 1 685 044
  - (f) A. J. B. Ward, *Internat. J. Math. Ed. Sci. Tech.* **29** (1998), no. 2, 179–186; MR 2000a:15026
  - (g) K. Kitamura and Y. Seo, *Math. Japon.* **45** (1997), no. 2, 211–216; MR 98e:15033

- (h) M. Omladič and H. Radjavi, *Linear Algebra Appl.* **251** (1997), 59–72; MR 97k:47033
  - (i) H. Neudecker, S. Liu and W. Polasek, *Statistics* **26** (1995), no. 4, 365–373; MR 97b:15033
  - (j) M. Lacruz, *Linear Algebra Appl.* **219** (1995), 157–163; MR 96e:15046
  - (k) E. Marques de Sá and M. -J. Sodupe, *Linear Algebra Appl.* **193** (1993), 1–9; MR 94i:15026
  - (l) R. Mathias, *Linear Algebra Appl.* **184** (1993), 71–78; MR 94b:15019
  - (m) È. I. Grudo, *Vestsī Akad. Navuk Belarusī Ser. Fiz. Mat. Navuk* **127** (1992), no. 1, 102–103; MR 93i:15018
3. Referee for *Houston Journal of Mathematics* (1999)
  4. Reviewer for *MAA Online*  
Reviewed:
    - (a) “The William Lowell Putnam Mathematical Competition, 1995-2000”, by K. S. Kedlaya, B. Poonen and R. Vakil
  5. Textbook reviewer for Springer (Key College Publishing)  
Reviewed: “Basic Calculus: From Archimedes to Newton to its Role in Science” (2004)

### OTHER PROFESSIONAL DEVELOPMENT

1. *Society of Actuaries* exams 100, 110, 130, 135, 140

### GRANTS

Colby Science Division Grants (1998-2004)

### SERVICE AT COLBY

2003-2004

1. Member of the Administrative committee
2. Member of the College Affairs committee
3. Faculty representative appointed to Student Affairs committee of the Board
4. Member of the Grievance committee
5. Invited participant in the interview process for the Dean of Students search
6. Invited participant in the Overseers Visiting Committee review of the Admissions and Financial Aid office.
7. Panelist, Alumni Council panel on newly tenured faculty, Alumni weekend (2004)
8. Freshman advisor
9. Admissions liaison for mathematics department
10. Member of reappointment committee for Otto Bretscher (Math)
11. Member of first year review committee for Liam o’Brien (Math)
12. Member of sixth semester review committee for Marc Smith (CS)
13. Supervisor of Colby’s entries into W. L. Putnam mathematics competition
14. Instructor of the departmental Problem Solving seminar
15. Organizer of Math Meet 03 contestival (for students from Colby, Bowdoin, Bates and UM)
16. Faculty associate for the AMS residence hall.

2002-2003

1. Member of the Administrative committee
2. Member of the Grievance committee (which actually worked on a case this year!)
3. Member of Russian search committee (for J. de Sherbinin’s sabbatical replacement)
4. Freshman advisor
5. Admissions liaison for mathematics department
6. Chair of departmental long term planning committee
7. Member of J. Holly’s reappointment committee
8. Supervisor of Colby’s entries into W. L. Putnam mathematics competition
9. Instructor of the departmental Problem Solving seminar

2001-2002

(on family leave in the Spring semester)

1. Member of the Promotion and Tenure committee
2. Member of the Course Evaluation committee
3. Member of the Grievance committee
4. Member of Statistics search committee
5. Academic advisor to mathematics majors, Class of '02
6. Admissions liaison for mathematics department
7. Faculty advisor to Colby Badminton Club
8. Peer reviewer for Marc Smith (CS)
9. The outside member on Marc Smith's first year review committee (co-authored the report)

2000-2001

1. Member of the Cultural Events committee
2. Member of the Course Evaluation committee
3. Member of the Grievance committee
4. Member of Statistics search committee
5. Academic advisor to mathematics majors, Class of '02
6. Supervisor of Colby's entries into W. L. Putnam mathematics competition
7. Admissions liaison for mathematics department
8. Faculty advisor to Colby Chess Club

1999-2000

1. Faculty Chair of the Cultural Events committee
2. Member of the Course Evaluation committee
3. Academic advisor to mathematics majors, class of '02
4. Academic advisor to four first year students
5. Supervisor of Colby's entries into W. L. Putnum mathematics competition
6. Organizer of Math Meet 2000
7. Member of Colby's advisory committee to the steering committee for CBB Cape Town.
8. Co-manager of mathematics department web pages
9. Admissions liaison for mathematics department
10. Faculty advisor to Colby Chess Club

1998-99

On sabbatical leave

1997-98

1. Member of the Committee on Admissions and Financial Aid
2. Member of the Information Technology Committee
3. Junior faculty representative (Natural Sciences) on the Dean of Faculty search committee
4. Academic advisor to mathematics majors, class of '98

5. Academic advisor to five first year students
6. Supervisor of Colby's entries into W. L. Putnum mathematics competition
7. Co-organizer of Math Meet 1997
8. Organizer of "Problem Solving Techniques" seminar
9. Editor of the departmental newsletter "Mudd Pi"
10. Peer reviewer of Weiwen Miao (Math)
11. Peer reviewer of Allen Downey (CS)

1996-97

1. Member of the Committee on Admissions and Financial Aid
2. Academic advisor to mathematics majors, class of '98
3. Academic advisor to four first year students
4. Academic advisor to two second year students
5. Supervisor of Colby's entries into W. L. Putnum mathematics competition
6. Organizer of Math Meet 1996
7. Editor of the departmental newsletter "Mudd Pi"
8. Member of the Statistics search committee
9. Faculty associate, Williams Hall

1995-96

1. Member of the Committee on Dismissal
2. Member of the ad-hoc sub-committee on introducing Honors courses into first year curriculum
3. Academic advisor to mathematics majors, class of '98
4. Academic advisor to five first year students
5. Co-chair of the New Faculty Group
6. Senior Justice on student Judicial Board
7. Organizer of Math Meet 1995
8. Member of the Computer Science search committee
9. Member of the Applied Mathematics search committee

1994-95

1. Facilitator for the Faculty Retreat session on pedagogical philosophies and teaching styles
2. Academic advisor to mathematics majors, class of '98
3. Advisor to Math/CS club
4. Co-organizer of Mathematics and Computer Science colloquium series
5. Creator of the Math Meet
6. Reader of C. Citarella's ('95) Honors thesis