Curriculum Vitae of Timur Oikhberg

Dept. of Mathematics, University of Illinois at Urbana-Champaign, Urbana IL 61801
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EMPLOYMENT:

2022-present	Professor, University of Illinois, Urbana-Champaign.
2020-2022	Research Professor, University of Illinois, Urbana-Champaign.
2012-2020	Research Associate Professor, University of Illinois, Urbana-Champaign.
2006-2012	Visiting Scholar/Lecturer, University of Illinois, Urbana-Champaign.
2005-2012	Associate Professor (tenured), University of California, Irvine.
2001-2005	Assistant Professor, University of California, Irvine.
1998-2001	Instructor, University of Texas at Austin.

Ph.D: Texas A&M University, 1998.

FIELDS OF INTEREST: *Functional analysis*: Banach spaces, Banach lattices, quantum information, operator spaces and algebras, approximation theory.

RECENT TALKS:

- Free p-convex Banach lattices and non-linear maps between Banach spaces, Recent Advances in Banach lattices, Banff, May 7-12, 2023,

- Stable phase retrieval in arbitrary Banach lattices, Algebras in Analysis webinar, April 14, 2023.

- The geometry of unit ball of a Banach lattice, with applications to free lattices, Universidad Complutense, Madrid, March 23, 2023.

- Free Banach lattices, and their lattice isomorphisms (mini-course), Workshop on Banach spaces and Banach lattices II, ICMAT, Madrid, May 9 and 10, 2022.

- Free Banach lattices and their properties, Algebras in Analysis seminar (virtual), September 24, 2021.

- Stability of disjointness preservation, Preserver Webinar, August 19, 2020.

- Renormings of Banach lattices, Purdue University, October 29, 2019.

- On the stability of some preservers, GPOTS 2018, Miami OH, May 30, 2018.

- Separable universal Banach lattices, invited talk, Recent Advances in Banach lattices, Oaxaca, Mexico, May 4, 2018.

- p-multinormed spaces: injectivity, projectivity, subquotient repesentation, invited talk, Recent Advances in Banach lattices, Oaxaca, Mexico, May 1, 2018.

- Large sublattices in subsets of Banach lattices, Positivity IX, Edmonton, July 21, 2017.

- Large sublattices (subalgebras) of subsets of Banach lattices (algebras), invited talk, Transfinite methods in Banach spaces and algebras of operators, Bedlewo, Poland, July 18, 2016.
- Almost disjointness and band preserving operators, Universidad Complutense de Madrid, June 9, 2016.
- On some "almost preserver" problems, Universidad de Granada, June 3, 2016.

PUBLICATIONS:

1. *Absolute widths of some embeddings*, J. Approximation Theory 81 (1995), 120–126.
2. *Geometry of Operator Spaces and Products of Orthogonal Projections*, Ph.D. dissertation, Texas A&M University, 1998.
3. (with G. Pisier) *The "maximal" tensor products of operator spaces*, Proc. Edinburgh Math. Soc. 42 (1999), 267–284.
4. *Products of orthogonal projections*, Proc. Amer. Math. Soc. 127 (1999), 3659–3669.
5. *Completely complemented subspace problem*, J. Operator Theory 43 (2000), 375–387.
6. (with H. Rosenthal) *Certain extension properties for the space of compact operators*, J. Funct. Anal. 179 (2001), 251–308.
7. (with W. Johnson) *Separable lifting property and extensions of local reflexivity*, Illinois J. Math. 45 (2001), 123–137.
8. *Direct sums of operator spaces*, J. London Math. Soc. 64 (2001), 144–160.
9. *The Daugavet property of C^*-algebras and non-commutative L_p-spaces*, Positivity 6 (2002), 59–73.
10. (with H. Rosenthal and E. Stormer) *A predual characterization of semifinite von Neumann algebras*, Advances in quantum dynamics, Contemp. Math. 335 (2003), 243–245.
11. *Subspaces of maximal operator spaces*, Integral Equations and Operator Theory 48 (2004), 81–102.
12. (with E. Ricard) *Operator spaces with few completely bounded maps*, Math. Ann. 328 (2004), 229–259.
13. (with M. Martin) *An alternative Daugavet property*, J. Math. Anal. Appl. 294 (2004), 158–180.
14. (with V. Troitsky) *A theorem of Krein revisited*, Rocky Mountain J. Math. 35 (2005), 195–210.
15. *Operator spaces with prescribed sets of completely bounded maps*, J. Funct. Anal. 224 (2005), 296–315.
16. *Spaces of operators, the ψ-Daugavet property, and numerical indices*, Positivity 9 (2005), 607–623.

17. *Operator spaces with complete bases, lacking completely unconditional bases*, Houston J. Math. 32 (2006), 551–561.

18. *The non-commutative Gurarii space*, Arch. Math. 86 (2006), 356–364.

19. (with M. Junge) *Unconditional basic sequences and homogeneous Hilbertian subspaces of non-commutative L_p spaces*, Indiana Univ. Math. J. 56 (2007), 733–765.

20. *Hyperreflexivity and operator ideals*, J. Funct. Anal. 246 (2007), 242–280.

21. *The complete isomorphism class of an operator space*, Proc. Amer. Math. Soc. 135 (2007), 3943–3948.

22. (with H. Rosenthal) *A metric characterization of normed linear spaces*, Rocky Mountain J. Math. 37 (2007), 597–608.

23. (with A. Arias) *Embeddings of finite dimensional operator spaces into the second dual*, Studia Math. 181 (2007), 181–198.

24. *Some properties related to the Daugavet Property*, in Banach spaces and their applications in analysis, 399–401, Walter de Gruyter, Berlin, 2007.

25. *The operator shift space*, Proc. Edinburgh Math. Soc. (2) 51 (2008), 229–263.

26. *Products of projections in von Neumann algebras*, Lin. Alg. Appl. 429 (2008), 759–775.

27. (with M. Junge and N. Nielsen) *Rosenthal operator spaces*, Studia Math. 188 (2008), 17–55.

28. *Finite representability of homogeneous Hilbertian operator spaces in spaces with few completely bounded maps*, J. Operator Theory 61 (2009), 3–18.

29. *Representations of Banach algebras as algebras of completely bounded maps*, Math. Scand. 105 (2009), 99–120.

30. *Restricted Schur multipliers and their applications*, Proc. Amer. Math. Soc. 138 (2010), 1739–1750.

31. *Completely bounded and ideal norms of multiplication operators and Schur multipliers*, Integral Equations Op. Theory 66 (2010), 425–440.

32. (with A. Aksoy) *Some results on metric trees*, Banach Algebras 2009 (conference proceedings), 9–34, Banach Center Publications v. 91, Polish Academy of Sciences, Warsaw, 2010.

33. *Reverse monotone approximation property*, Function spaces in modern analysis, Contemp. Math. 547 (2011), 197–206.

34. *Rate of decay of s-numbers*, J. Approximation Theory 163 (2011), 311–327.

35. (with C. Rosendal) *Subspace structure of some operator and Banach spaces*, Journal of Logic and Analysis 3 (2011), Paper 2, 31 pp.

36. (with A. Peralta and M. Ramirez) *Automatic continuity of C^*-norms*, J. Math. Anal. Appl. 381 (2011), 799–811.

37. (with J. M. Almira) *Approximation schemes satisfying Shapiro's Theorem*, J. Approx. Theory 164 (2012), 534–571.

38. (with J. M. Almira) *Shapiro's Theorem for subspaces*, J. Math. Anal. Appl. 388 (2012), 282–302.

39. (with A. Peralta and D. Puglisi) *Automatic continuity of orthogonality or disjointness preserving bijections*, Rev. Mat. Complut. 26 (2013), 57–88.

40. (with M. Ostrovskii) *Dependence of Kolmogorov Widths on the Ambient Space*, Journal of Mathematical Physics, Analysis, Geometry 9 (2013), 25–50.

41. (with A. Peralta) *Automatic continuity of orthogonality preservers on a non-commutative $L_p(\tau)$ space*, J. Funct. Anal. 264 (2013) 1848–1872.

42. (with G. Garrigós and E. Hernández) *Lebesgue-type inequality for quasi-greedy bases*, Constr. Approx. 38 (2013), 447–470.

43. (with E. Spinu) *Domination of operators in the non-commutative setting*, Studia Math. 219 (2013), 35–67.

44. (with E. Spinu) *Operator ideals on non-commutative function spaces*, Integral Equations Operator Theory 79 (2014), 507–532.

45. (with K. Kudaibergenov, A. Peralta, and B. Russo) *2-local triple derivations of von Neumann algebras*, Illinois J. Math., 58 (2014), 1055–1069.

46. (with E. Spinu) *Ideals of operators on C^*-algebras and their preduals*, Bull. Lond. Math. Soc. 47 (2015), 156–170.

47. (with E. Spinu) *Subprojective Banach spaces*, J. Math. Anal. Appl. 424 (2015), 613–635.

48. (with S. Dilworth and D. Kutzarova) *Lebesgue constants for the weak greedy algorithm*, Rev. Mat. Complut. 28 (2015), 393–409.

49. (with A. Chavez-Dominguez) *Some notions of transitivity for operator spaces*, Contemp. Math. 643 (2015), 49–61.

50. *A note on latticeability and algebrability*, J. Math. Anal. Appl. 434 (2016), 523–537.

51. *A note on universal operators*, Ordered structures and applications, Burkhäuser, Basel, 2016, 339–347.

52. (with M. Junge and C. Palazuelos) *Reducing the number of questions in nonlocal games*, J. Math. Phys. 57 (2016), 102203, 15 pp..

53. (with P. Tradacete) *Almost disjointness preservers*, Canad. J. Math. 69 (2017), 650–686.

54. *Large sublattices in subsets of Banach lattices*, Arch. der Math. 109 (2017), 245–253.

55. (with H. G. Dales, N. J. Laustsen, and V. Troitsky) *Multi-norms and Banach lattices*, Diss. Math. 109 (2017), 1–115.

56. (with P. Tradacete) *Almost band preservers*, Positivity 21 (2017), 1393—1423.

57. *Greedy algorithm with gaps*, J. Approx. Theory 225 (2018), 176–190.

58. *Injectivity and projectivity in p-multinormed spaces*, Positivity 22 (2018), 1023–1037.

59. (with P. Berná, O. Blasco, G. Garrigós, and E. Hernández) *Embeddings and Lebesgue-type inequalities for the greedy algorithm in Banach spaces*, Constr. Approx. 48 (2018), 415–451.

60. *On the stability of some preservers*, Linear Algebra Appl. 563 (2019), 494–526.

61. (with D. Leung, L. Li, and M.A. Tursi) *Separable universal Banach lattices*, Israel J. Math. 230 (2019), 141–152.

62. (with P. Berná, S. Dilworth, D. Kutzarova, and B. Wallis) *The weighted Property (A) and the greedy algorithm*, J. Approx. Theory 248 (2019), 105300, 18 pp.

63. (with M.A. Tursi) *Order extreme points and solid convex hulls*, The Mathematical Legacy of Victor Lomonosov (ed. R. Aron et.al.), de Gryuter, 2020, 297–315.

64. (with P. Berná, O. Blasco, G. Garrigós, and E. Hernández) *Lebesgue inequalities for Chebyshev Thresholding Greedy Algorithms*, Rev. Mat. Complut. 33 (2020), 695–722.

65. (with M.A. Tursi) *Renorming AM-spaces*, Proceedings of the AMS, 150 (2022), 1127–1139.

66. (with A.Ya. Helemeskii) *Free and projective generalized multinormed spaces*, J. Math. Anal. Appl. 518 (2023), no. 1, Paper No. 126660.

67. (with B. de Mendonca Braga) *Coarse geometry of operator spaces and complete isomorphic embeddings into ℓ_1 and c_0-sums of operator spaces*, preprint, `https://arxiv.org/abs/2211.11854`, to appear in Math. Z..

68. (with M. Taylor, P. Tradacete, and V. Troitsky) *Free Banach lattices*, preprint, `https://arxiv.org/abs/2210.00614`

69. (with D. Freeman, M. Taylor, and B. Pineau) *Stable phase retrieval in function spaces*, preprint, `https://arxiv.org/abs/2210.05114`

70. *Geometry of unit balls of free Banach lattices, and its applications*, preprint, `https://arxiv.org/abs/2303.05209`

71. (with F. Albiac, J.L. Ansorena, O. Blasco, and H. Chu) *Counterexamples in isometric theory of symmetric and greedy bases*, preprint, `https://arxiv.org/abs/2304.05888`

SUPERVISION OF GRADUATE STUDENTS:

- Ph.D. advisor for H. Chu (UIUC, expecting to graduate May 2023).
- Ph.D. advisor for M.A. Tursi (UIUC, defended May 2021).
- Ph.D. advisor for M. Said (University of California - Irvine; defended March 2014).
- Preliminary or dissertation committee member for S. Rezvani, L. Gao, M. Zhao, H. Li (UIUC, 2016-present).

- External committee member for P. Berná (Universidad Autonoma de Madrid; defended July 2019).

EDITORIAL BOARDS:

Associate Editor for:

- *Advances in Operator Theory* (2020-present)

- *Illinois Journal of Mathematics* (2022-present)

SERVICE:

- Referee for a number of journals, among them *American Mathematical Monthly*, *Advances in Mathematics*, *Constructive Approximation*, *Extracta Mathematica*, *Houston Journal of Mathematics*, *International Journal of Theoretical Physics*, *Israel Journal of Mathematics*, *Journal of London Mathematical Society*, *Journal of Functional Analysis*, *Journal of Mathematical Analysis and Applications*, *Journal of Mathematical Sciences, University of Tokyo*, *Linear and Multilinear Algebra*, *Positivity*, *Proceedings of the American Mathematical Society*, *Studia Mathematica*, *Transactions of American Mathematical Society*.
- Reviewer for: *Mathematical Reviews*.
- Personnel reviewer for: *National Research Foundation of South Africa* (2012).
- Promotion and tenure committee (UIUC), 2022-present.
- Putnam Exam committee (UIUC), 2014-present.
- Undergraduate advising committee (UIUC), 2012-2022.
- Math 540 comprehensive exam committee (UIUC), 2020-present.
- Senate member (UIUC), 2017-2021.
- Course steward for Math 285 (UIUC), Fall 2018.
- Course development: created (with R. Laugesen and S. Clifton) a set of handouts for Math 285 (Differential Equations); Spring and Fall of 2018.

TEACHING AWARDS:

Appeared on the list of teachers ranked as excellent: Spring 2019, Spring 2020, Spring 2022, Fall 2022.

GRANT SUPPORT:

- NSF: DMS-9970369, 1999 – 2002; DMS-0200714, 2002 – 2005; DMS-0500957, 2005 – 2008.
- Simons Foundation: Collaboration grant, 2011 – 2016.