RÉSUMÉ: RALPH DELAUBENFELS

Education

M.S., Statistics, with thesis, Ohio State University, Columbus, Ohio, 2004
Ph.D., Mathematics, University of California, Berkeley, California, 1982
B.S., Mathematics, University of California, Davis, California, 1975

Employment

Teacher-Scholar, Teacher-Scholar Institute, mathematics/statistics education, April 2008–present
Lecturer, Mathematics, Ohio State University, September 2006–December 2016, as needed
Lecturer, Statistics, Ohio State University, March 2004–December 2015, as needed
Instructor, Statistics and Mathematics, Ohio Dominican University, November 2006–April 2007, August 2009–May 2010
Homeschooling youngest son, June 2004–August 2009
Instructor, Statistics, Franklin University, May 2005–May 2006
Teaching Assistant/Instructor, Statistics, Ohio State University, 2002–2004
Professor, Mathematics, Ohio University, 1992–2002
Associate Professor, Mathematics, Ohio University, 1989–1992
Assistant Professor, Mathematics, Ohio University, 1986–1989
Assistant Professor, Mathematics, The University of Tulsa, 1984–1986
John Wesley Young Research Instructor, Dartmouth College, 1982–1984

Visiting positions

Visiting Professor, Mathematics, Nanjing University, December 1996
Visiting Professor, Mathematics, Nanjing University, December 1993
Visiting Professor, Mathematics, The University of New South Wales, August 1992
Invited Professor, Mathematics, Université de Poitiers, July 1992

Research interests

Statistics and mathematics history and philosophy, functional analysis and operator theory and their applications to differential equations and statistics.

Teaching and Curriculum Development

I have taught all levels of mathematics and statistics classes; the former, from elementary school to topics of current research; the latter, from introductory-level "terminal" classes to graduate classes. Mathematics classes taught include upper elementary and middle school arithmetic, high school algebra, probability, calculus for business majors, calculus for engineering majors (both single- and multi-variable), differential equations, linear algebra, both for engineers and for a general (non-calculus) audience, vector analysis, numerical analysis, undergraduate abstract real analysis, undergraduate complex analysis, graduate real analysis, graduate complex analysis, and functional analysis. Statistics classes taught include an introductory, terminal level class primarily for social scientists, an introductory probability and statistics classes for business majors, with the sequel traditionally given in the business college, calculus-based, upper division introductory probability and statistics for mathematics, engineering, and physical science students, and a non-calculus sequence in statistical inference for graduate students of all fields. The number of students in classes I have taught has ranged between 8 and 400 students, with the larger classes including supervising labs run by teaching assistants for those students.

One class, Math 116, which I have taught many lecture sections of, and been course coordinator for, at Ohio State University, is an analogue of a class my wife and I created at Ohio University, "Math as a Liberal Art" (see "Classes Created" below, number 5). This is a "terminal" course for students who might not take any other mathematics classes, with topics and techniques chosen to communicate the flavor of and ideas of mathematics while minimizing computation. I have created many labs for Math 116, which I trained the teaching assistants to implement in weekly small-group

meetings. I have also taught the analogue of this class (Math 121) at Ohio Dominican University, with the labs just described.

The "Concise Textbooks" series, mentioned under "Books" near the end of the resume, represents a new concept in textbook writing. Books in this series are intentionally written in a succinct style, teaching concepts in an active, meaningful way with short, explicit definitions and an emphasis on solving a wide range of problems.

The textbook "Mathematics Through History," mentioned below under "Books," also represents a new idea for mathematics curriculum in elementary and secondary school.

I was selected as the Outstanding Graduate Faculty member for the Mathematics Department at Ohio University for the academic year 1994–95, the last year I taught graduate classes.

I was nominated for the "best Teaching Assistant" in the Statistics Department at Ohio State University for the academic year 2003–2004, both quarters that teaching assistants were evaluated.

I was nominated for the 2015–2016 "Provost's Award for Distinguished Teaching by a Lecturer," at Ohio State University.

Classes created

1. "The moment problem and the spectral theorem." This was an undergraduate class (the prerequisite was undergraduate analysis; no Lebesgue measure or integration was used). Riemann-Stieltjes integration and the Hamburger moment problem were developed and then used to state and prove the spectral theorem.

2. (with K. deLaubenfels) "Reasoning, writing and mathematics." This was an elementary (the only prerequisite was one year of high school algebra) course designed to emphasize problem-solving, conscious thought and communication skills. In other words, it consisted entirely of "word problems."

2. "The spectral theorem and evolution equations." This was for students who had taken the usual graduate courses in analysis and functional analysis. We proved the spectral theorem and Stone's theorem, and applied them to numerous partial differential equations.

3. "Semigroups of operators and evolution equations" (two-quarter class). This was a research-level class. It emphasized the interaction between evolution equations, semigroups of operators and functional calculi constructions. It included new material on generalizations of semigroups of operators and functional calculi, what are known as regularized semigroups and regularized functional calculi.

4. Mathematics as a Liberal Art." This was a class meant for liberal arts majors, who might take no other mathematics classes in college. Mathematics was placed in its classical perspective as one of the fundamental liberal arts, rather than as a tool existing only to be quickly applied to science, engineering, etc. The major branches of mathematics were introduced in a way that required no more background than arithmetic, via simple illustrative examples, projects and experiments. Students became acquainted with mathematical reasoning without getting distracted by involved calculations. Topics included mathematical induction and deduction, number sequences and series, functions, geometry, probability, statistics and topology, all presented at an elementary level.

Tutoring and enrichment

1. *The Math Doc (is in).* For several quarters, I gave study halls two hours a week, offering free tutoring and an opportunity to work on homework, to both Ohio University students and anyone in the community.

2. *Homeschooling my children.* I have taught middle school and high school math through college algebra to my two oldest sons. I had primary responsibility for homeschooling my youngest son through high school, including teaching calculus, probability, statistics, physics, and chemistry.

3. *Homeschoolers math group.* K. deLaubenfels and I gave six two-hour math meetings for middle and high school homeschoolers, using short lectures, demonstrations, labs and projects to introduce similar triangles, topology, geometry, logarithms, probability and statistics.

4. *Volunteer tutoring.* For four years I tutored homeschooled children (in addition to our own) in elementary through high school math.

5. *Study halls.* My four office hours per week at Ohio University, and many office hours at Ohio State University, were held as a study hall. This meant that students could come to the room I had reserved, to work on their homework and ask me questions as they arose. By giving the students minimal hints, I ensured that their learning was as active as possible.

Presentations

1. *Extensions of d/dx that generate uniformly bounded semigroups,* American Mathematical Society conference, Reno, Nevada, April 24, 1981.

2. *Well-behaved derivations on $C[0,1]$,* American Mathematical Society conference, Evanston, Illinois, November 12, 1983.

3. *M-accretive operators with m-dispersive resolvents,* American Mathematical Society conference, Louisville, Kentucky, January 25–29, 1984.

4. *The moment problem and C^n-scalar operators,* Mathematical Association of America conference, Tulsa, Oklahoma, March 29–30, 1985.

5. (invited address) *The functional calculus,* Oklahoma State University Mathematics Colloquium, April 24, 1985.

6. *The abstract Cauchy problem on semiclosed subspaces,* International Conference on Theory and Applications of Differential Equations, Columbus, Ohio, March 21–25, 1988.

7. (invited address) *How to smooth a semigroup,* Georgetown University, Washington D. C., July 29, 1988.

8. *Some applications of C-semigroups to the abstract Cauchy problem,* 8^{th} Annual Southeastern-Atlantic-Regional Conference on Differential Equations, University of Georgia, November 4–5, 1988.

9. (invited address) *Bizarre exponentials and differential equations,* Wright State University Mathematics Colloquium, March 1989.

10. *C-existence families,* 2^{nd} International Conference on Trends in Semigroup Theory and Evolution Equations, Delft, Netherlands, September 25–29, 1989.

11. (invited address) *C-semigroups and improperly posed problems,* Mathematische Institut, Universität Tübingen, Tübingen, Federal Republic of Germany, October 3, 1989.

12. (invited address) *C-semigroups and improperly posed problems,* Equipe de Mathématiques de Besançon, Université de Franche-Comté, Besançon, France, October 6, 1989.

13. *The Laplace equation and C-semigroups,* International Conference on Differential Equations and Mathematical Physics, Birmingham, Alabama, March 15–21, 1990.

14. (invited address) *Some highlights of C-semigroups,* Louisiana State University Mathematics Colloquium, Baton Rouge, Louisiana, March 22, 1990.

15. (invited address) *Fun with spectrum,* Mini-Conference on Operator Theory and Evolution Equations, Georgetown, Washington D. C., December 17–19, 1990.

16. (invited address) *Automatic well-posedness,* Mathematics Department Colloquium, Université de Poitiers, Poitiers, France, June 27, 1991.

17. (invited address) *Boundary values of holomorphic semigroups,* International Conference on Differential Equations in Banach spaces, Bologna, Italy, July 1–5, 1991.

18. (invited address) *Simultaneous well-posedness,* 3^{rd} International Conference on Evolution Equations, Mons, Belgium, October 20–26, 1991.

19. (invited address) *The Laplace space,* Mini-Conference on Operator Theory and Evolution Equations, Louisiana State University, Baton Rouge, March 2–6, 1992.

20. (invited address) *The Schrödinger equation and regularized semigroups,* Colloquium, Mathematics Department, Technische Universität, Berlin, Germany, June 9, 1992.

21. (invited address) *Unbounded holomorphic functional calculus,* Mathematics Colloquium, Uniwersytet Jagiellonski, Instytut Matematyki, Krakow, Poland, June 12, 1992.

22. (invited address) *Regularized functional calculi and evolution equations,* Colloquium, Mathematisches Institut, Universität Zürich, Switzerland, June 19, 1992.

23. (invited address) *The Schrödinger equation and regularized semigroups,* Seminarie Analyse, Mathematics Department, University of Antwerp, Belgium, June 22, 1992.

24. (invited address) *Bounded variation and H^∞ functional calculus*, Analysis Seminar, School of Mathematics, Physics, Computing and Electronics, Macquarie University, Sydney, Australia, August 12, 1992.

25. (invited address) *Regularized functional calculi,* Pure Mathematics Seminar, University of New South Wales, Sydney, Australia, August 18, 1992.

26. (invited address) *Unbounded holomorphic functional calculus,* American Mathematical Society Conference, Special Session on operator theory, Dayton, Ohio, October 30–November 1, 1992.

27. (invited address) *Regularized functional calculi and evolution equations,* Conference on Evolution Equations, Louisiana State University, Baton Rouge, Louisiana, January 7–11, 1993.

28. (invited address) *Semigroups, functional calculi and representation of operators,* 3^{rd} Mini-Conference on Operator Theory and Evolution Equations, University of Puerto Rico, Rio Piedras, Puerto Rico, March 23–April 2, 1993.

29. *Application of regularized semigroups to problems in elasticity*, Differential Equations Conference, Ohio University, August 3–7, 1993.

30. (three invited lectures) *Existence families and solution spaces for evolution equations,* Mathematics Department, National Central University, Chung-Li, Taiwan, November 29 and December 1, 1993.

31. (invited lecture) *Regularized functional calculi and evolution equations,* Mathematics Department, Sun Yat-Sen University, Kaoshung City, Taiwan, December 2, 1993.

32. (invited address) *An ill-posed heat equation,* Annual Meeting of the Mathematical Society of Taiwan, National Chiao Tung University, Hsinchu, Taiwan, December 3–5, 1993.

33. (eight invited lectures) *Regularized semigroups, partial differential equations and functional calculi,* Nanjing University, People's Republic of China, December 6–18, 1993.

34. (invited lectures in People's Republic of China) *Regularized semigroups and some ill-posed problems,*

(a) Mathematics Department, Huazhong University, Wuhan, December 22, 1993;

(b) Mathematics Department, Xian Jiaotong University, Xian, December 25, 1993;

(c) Academia Sinica, Institute of Mathematics, Beijing, December 28, 1993; and

(d) Mathematics Department, Qufu Normal University, December 31, 1993.

35. (invited address) *A functional calculus approach to semigroups of operators,* 4^{th} Mini-Conference on Operator Theory and Evolution Equations, Baton Rouge, Louisiana, March 21–25, 1994.

36. (invited addresses)

(a) *An analogue of Stone's theorem for unbounded groups,* April 19, 1994;

(b) *Unbounded well-bounded operators, semigroups of operators and the Laplace transform,* April 22, 1994;
Banach Center Semester on Linear Operators, Banach Center, Warsaw, Poland.

37. *Entire vectors and entire existence families,* Conference on Evolution Equations, University of Strathclyde, Glasgow, Scotland, July 25–29, 1994.

38. (invited address) *Two heat equations,* Mississippi State University Mathematics Department Colloquium, December 1, 1994.

39. (invited address) *C^n-scalar operators,* University of Mississippi Mathematics Department Colloquium, December 2, 1994.

40. *Dichotomy on subspaces and superspaces,* NSF-CBMS Regional Conference on Approximation Dynamics with Applications to Numerical Analysis, University of Missouri, June 1–5, 1995.

41. (invited address) *Type of an operator,* Dipartimento di Matematica Seminar, Universita Degli Studi di Bologna, Italy, June 27, 1995.

42. (invited address) *A survey of pointwise functional calculi,* Mathematische Institut, Universität Tübingen, Tübingen, Germany, June 29, 1995.

43. (invited address) *H^∞ functional calculi,* Seminario di Analisi Matematica, Departimento di Matematica del Politecnico di Milano, Italy, July 3, 1995.

44. (invited address) *Type of an operator,* Institute für Angewandte Mathematik und Statistik Technische Universität München Seminar, Germany, July 5, 1995.

45. (invited address) *Entire vectors and evolution equations,* Mathematics and Statistics Colloquium, Wright State University, Dayton, Ohio, September 29, 1995.

46. (six invited lectures) *Regularized semigroups and regularized functional calculi,* Nanjing University, People's Republic of China, December 6–13, 1996.

47. (invited lectures in People's Republic of China) *Regularized semigroups and ill-posed abstract Cauchy problems,*

(a) Mathematics Department, Hebei University, Tianjin, December 16, 1996;

(b) Mathematics Department, Anhui Normal University, Wuhu, December 20, 1996; and

(c) Mathematics Department, Yangzhou University, Yangzhou, December 21, 1996.

48. (invited address) *Spectral conditions guaranteeing a nontrivial solution of the linear abstract Cauchy problem,* 6^{th} International Conference on Evolution Equations, Bad Herrenalb, Germany, September 14–19, 1998.

49. (invited addresses)

(a) *Asymptotic stability and chaos,* March 23, 2000;

(b) *Spectral mapping for operators with polynomially bounded resolvent,* March 24, 2000;
Workshop on Evolution Equations, Asymptotic Methods and Generalized Functions, Louisiana State Universty, Baton Rouge, Louisiana, March 22–25, 2000.

Publications

Articles in refereed journals

1. R. deLaubenfels, *Extensions of d/dx that generate uniformly bounded semigroups,* Pac. J. Math. 107 (1983), 95–105.

2. R. deLaubenfels, *M-accretive operators with m-dispersive resolvents,* Proc. Amer. Math. Soc. 92 (1984), 273–276.

3. R. deLaubenfels, *Well-behaved derivations on $C[0,1]$,* Pac. J. Math. 115 (1984), 73–80.

4. R. deLaubenfels, *The moment problem and C^n-scalar operators,* Honam J. Math. 7 (1985), 7–13.

5. R. deLaubenfels, *Scalar-type spectral operators and holomorphic semigroups,* Semigroup Forum 33 (1986), 257–263.

6. R. deLaubenfels, *Unbounded scalar operators on Banach lattices,* Honam J. Math. 8 (1986), 1–19.

7. R. deLaubenfels, *Powers of generators of holomorphic semigroups,* Proc. Amer. Math. Soc. 99 (1987), 105–108.

8. R. deLaubenfels, *A holomorphic functional calculus for unbounded operators,* Houston J. Math. 13 (1987), 545–548.

9. R. deLaubenfels, *Vectors of uniqueness for $i\,d/dx$,* Studia Math. 88 (1988), 269–274.

10. R. deLaubenfels, *d/dx, on $C[0,1]$, is C^1-scalar,* Proc. Amer. Math. Soc. 103 (1988), 215–221.

11. R. deLaubenfels, *Totally accretive operators,* Proc. Amer. Math. Soc. 103 (1988), 551–556.

12. R. deLaubenfels, *Inverses of generators,* Proc. Amer. Math. Soc. 104 (1988), 443–448.

13. R. deLaubenfels, *C^0-scalar operators on cyclic spaces,* Studia Math. 92 (1989), 49–58.

14. R. deLaubenfels, *A functional calculus for generators of uniformly bounded holomorphic semigroups,* Semigroup Forum 38 (1989), 91–103.

15. R. deLaubenfels, *Second order incomplete expiring Cauchy problems,* Semigroup Forum 39 (1989), 75–84.

16. R. deLaubenfels, *Polynomials of generators of integrated semigroups,* Proc. Amer. Math. Soc. 107 (1989), 197–204.

17. R. deLaubenfels, *Integrated semigroups, C-semigroups and the abstract Cauchy problem,* Semigroup Forum 41 (1990), 83–95.

18. R. deLaubenfels, *Integrated semigroups and integrodifferential equations,* Math. Z. 204 (1990), 501–514.

19. R. deLaubenfels, *Entire solutions of the abstract Cauchy problem,* Semigroup Forum 42 (1991), 83–105.

20. K. Boyadzhiev and R. deLaubenfels, *H^∞ functional calculus for perturbations of generators of holomorphic semigroups,* Houston J. Math. 17 (1991), No. 1, 131–147.

21. R. deLaubenfels, *Bounded, commuting multiplicative perturbations of strongly continuous groups,* Houston J. Math. 17 (1991), No. 3, 299–310.

22. R. deLaubenfels, *Existence and uniqueness families for the abstract Cauchy problem,* J. London Math. Soc. 44 (1991), 310–339.

23. R. deLaubenfels, *Holomorphic C-existence families,* Tokyo J. Math. 15 (1992), 17–38.

24. R. deLaubenfels, *Incomplete iterated Cauchy problems,* J. Math. An. and Appl. 168 (1992), 552–579.

25. K. Boyadzhiev and R. deLaubenfels, *Semigroups and resolvents of bounded variation, imaginary powers and H^∞ functional calculi*, Semigroup Forum 45 (1992), 372–384.

26. R. deLaubenfels, *Unbounded well-bounded operators, strongly continuous semigroups and the Laplace transform*, Studia Math. 103 (1992), 143–159.

27. R. deLaubenfels, *C-semigroups and the Cauchy problem,* J. Func. An. 111 (1993), 44–61.

28. R. deLaubenfels and H. Emamirad, *Application de la théorie des semi-groupes C-régularisés en élasticité linéaire,* C. R. Acad. Sci. Paris 316, Ser. I (1993), 759–762.

29. K. Boyadzhiev and R. deLaubenfels, *Boundary values of holomorphic semigroups,* Proc. Amer. Math. Soc. 118 (1993), 113–118.

30. R. deLaubenfels, *Matrices of operators and regularized semigroups,* Math. Z. 212 (1993), 619–629.

31. R. deLaubenfels, *C-semigroups and strongly continuous semigroups,* Israel J. Math. 81 (1993), 227–255.

32. R. deLaubenfels, *Unbounded holomorphic functional calculus and abstract Cauchy problems for operators with polynomially bounded resolvent,* J. Func. An. 114 (1993), 348–394.

33. J. Goldstein, J. Sandefur and R. deLaubenfels, *Regularized semigroups, iterated Cauchy problems and equipartition of energy,* Monat. Math. 115 (1993), 47–66.

34. R. deLaubenfels and S. Kantorovitz, *Laplace and Laplace-Stieltjes space,* J. Func. An. 116 (1993), 1–61.

35. C. Berg, K. Boyadzhiev and R. deLaubenfels, *Generation of generators of holomorphic semigroups,* J. Aust. Math. Soc. 55 (1993), 246–269.

36. R. deLaubenfels, *Automatic well-posedness with the abstract Cauchy problem on a Fréchet space,* J. London Math. Soc. 48 (1993), 526–536.

37. K. Boyadzhiev and R. deLaubenfels, *Spectral theorem for unbounded strongly continuous groups on a Hilbert space,* Proc. Amer. Math. Soc. 120 (1994), 127–136.

38. I. Doust and R. deLaubenfels, *Functional calculus, integral representations, and Banach space geometry,* Quaestiones Math. 17 (1994), 161–171.

39. R. deLaubenfels and M. Jazar, *Commuting multiplicative perturbations,* Houston J. Math. 20 (1994), 425–434.

40. L. Autret and R. deLaubenfels, *Semi-analytic vectors and second order ill-posed Cauchy problems,* C. R. Acad. Sci. Paris 321, Ser. I (1994), 271–275.

41. R. deLaubenfels, G. Sun and S. Wang, *Regularized semigroups, existence families and the abstract Cauchy problem,* J. Diff. and Int. Eqns. 8 (1995), 1477–1496.

42. R. deLaubenfels, *Automatic extensions of functional calculi,* Studia Math. 114 (1995), 237–259.

43. R. deLaubenfels and Y. Latushkin, *Dichotomy and H^∞ functional calculi,* Electronic Journal of Differential Equations 1995 (1995), 1–17.

44. R. deLaubenfels and S. Kantorovitz, *The semi-simplicity manifold for arbitrary Banach spaces,* J. Func. An. 113 (1995), 138–167.

45. R. deLaubenfels and S. Piskarev, *The growth rate of cosine families,* J. Math. An. and Appl. 196 (1995), 442–451.

46. R. deLaubenfels and F. Yao, *Entire solutions of the abstract Cauchy problem in a Hilbert space,* Proc. Amer. Math. Soc. 123 (1995), 3351–3356.

47. R. deLaubenfels and Vu Quoc-Phong, *Decomposable embeddings, complete trajectories, and invariant subspaces,* Studia Math. 119 (1996), 65–76.

48. R. deLaubenfels, *Pointwise functional calculi,* J. Func. An. 142 (1996), 32–78.

49. R. deLaubenfels and Vu Quoc-Phong, *The discrete Hille-Yosida space and the asymptotic behaviour of individual orbits of linear operators,* J. Func. An. 142 (1996), 539–548.

50. R. deLaubenfels, *Functional calculi, semigroups of operators, and Hille-Yosida operators,* Houston Journal of Mathematics 22 (1996), 787–805.

51. R. deLaubenfels, F. Yao and S. Wang, *Fractional powers and regularized type of an operator,* J. Math. An. and Appl. 199 (1996), 910–933.

52. R. deLaubenfels and M. Jazar, *Regularized spectral distributions,* Acta Applicandae Mathematicae 43 (1996), 267–287.

53. R. deLaubenfels and F. Yao, *Regularized semigroups of bounded semivariation,* Semigroup Forum 54 (1997), 43–57.

54. R. deLaubenfels and Vu Quoc-Phong, *Stability and almost periodicity of solutions of ill-posed abstract Cauchy problems,* Proc. Amer. Math. Soc. 125 (1997), 235–241.

55. R. deLaubenfels and H. Emamirad, *C-spectrality of the Schrödinger operator in L^p spaces,* Applied Mathematics Letters 10 (1997), 61–64.

56. R. deLaubenfels, H. Emamirad and M. Jazar, *Regularized scalar operators,* Applied Mathematics Letters 10 (1997), 65–69.

57. R. deLaubenfels, *Strongly continuous groups, similarity and numerical range on a Hilbert space,* Taiwanese Journal of Mathematics 1 (1997), 127–133.

58. R. deLaubenfels, Z. Huang, S. Wang, and Y. Wang, *Vector-valued Laplace transforms of polynomially bounded functions and semigroups of operators,* Israel J. Math. 98 (1997), 189–207.

59. R. deLaubenfels and Y. Lei, *Regularized functional calculi, semigroups and cosine functions for pseudodifferential operators,* Journal of Abstract and Applied Analysis 2 (1997), 121–136.

60. S. Wang and R. deLaubenfels, *Regularized quasi-spectral distributions,* Acta Mathematica Hungarica 78 (1998), 227–249.

61. R. deLaubenfels, *Similarity to a contraction, for power-bounded operators with finite peripheral spectrum,* Transactions of American Mathematical Society 350 (1998), 3169–3191.

62. R. deLaubenfels and S. Wang, *Spectral conditions guaranteeing a nontrivial solution of the abstract Cauchy problem,* Proceedings of American Mathematical Society 126 (1998), 3271–3278.

63. R. deLaubenfels and M. Jazar, *Functional calculi, regularized semigroups and integrated semigroups,* Studia Math. 132 (1999), 151–172.

64. R. deLaubenfels and Vu Quoc-Phong, *Majorized powers of an operator, discrete orbits and hyperinvariant subspaces,* Vietnam Journal of Mathematics 27 (1999), 69–84.

65. H. Emamirad, R. deLaubenfels, and V. Protopopescu, *Linear chaos and approximation,* Journal of Approximation Theory 105 (2000), 176–187.

66. R. deLaubenfels and S. Wang, *Compact admissible functional calculi and decomposability,* Mathematical Journal of Okayama University 42 (2000), 123–151.

67. R. deLaubenfels, *Regularized resolvent of sums of commuting operators,* Acta Math. Hungarica 92 (2001), 331–344.

68. R. deLaubenfels and H. Emamirad, *Chaos for functions of discrete and continuous weighted shift operators,* Ergodic Theory and Dynamical Systems 21 (2001), 1–17.

69. R. deLaubenfels, *Pointwise analogues of the spectral theorem on a Hilbert space,* Bulletin of the Polish Academy of Sciences 50 (2002), 103–116.

70. R. deLaubenfels, Vu Quoc Phong, and S. Wang, *Stability of semigroups of operators and spectral subspaces,* Semigroup Forum 64 (2002), 337–354.

71. S. Wang, R. deLaubenfels, and Vu Quoc-Phong, *Laplace transforms of vector-valued functions with growth ω and semigroups of operators,* Semigroup Forum 64 (2002), 355–375.

72. R. deLaubenfels, H. Emamirad, and K.-G. Grosse-Erdmann, *Chaos for semigroups of unbounded operators,* Mathematische Nachrichten 261–262 (2003), 47–59.

73. R. deLaubenfels, *Evolution systems and perturbations of generators of strongly continuous groups,* Journal of Evolution Equations 4 (2004), 451–462.

74. R. deLaubenfels, *Sequences of vectors that are orbits of operators,* J. Math. An. and Appl. 318 (2006), 459–466.

75. R. deLaubenfels, *The victory of least squares and orthogonality in statistics,* The Amer. Statistician 60 (2006), 315–321.

76. R. deLaubenfels, *Inverses of generators of integrated or regularized semigroups,* Semigroup Forum 75 (2007), 457–463.

77. R. deLaubenfels and J. Pastor, *A semigroup approach to fractional powers,* Semigroup Forum 76 (2008), 385–426.

78. R. deLaubenfels, *Inverses of generators of nonanalytic semigroups,* Studia Math. 191 (2009), 11–38.

79. R. deLaubenfels, *Continuous families of vectors that are orbits of a unitary group,* J. Math. An. and Appl. 351 (2009), 400–407.

Articles in refereed proceedings

80. R. deLaubenfels, *The abstract Cauchy problem on semiclosed subspaces,* Proceedings of International Conference on Theory and Applications of Differential Equations, Columbus, Ohio, 1988, Ohio University Press (1989), 223–227.

81. R. deLaubenfels, *C-existence families,* Semigroup Theory and Evolution Equations: the Second International Conference, Delft 1989, Lecture Notes in Pure and Applied Mathematics, Vol. 135, Marcel-Dekker (1991), 295–309.

82. R. deLaubenfels, *Boundary values of holomorphic semigroups, H^∞ functional calculi, and the inhomogeneous abstract Cauchy problem,* Differential Equations in Banach Spaces, Proceedings of the Bologna Conference 1991, Lecture Notes in Pure and Applied Mathematics, Vol. 148, Marcel-Dekker (1993), 181–194.

83. R. deLaubenfels, *Simultaneous well-posedness,* Evolution Equations, Control Theory and Biomathematics: the Third International Conference, Hans-sur-Lesse 1991, Lecture Notes in Pure and Applied Mathematics, Vol. 155, Marcel-Dekker (1993), 101–115.

84. R. deLaubenfels, *Regularized functional calculi and evolution equations,* Proceedings of International Conference on Evolution Equations, Baton Rouge, 1992, Lecture Notes in Pure and Applied Mathematics, Vol. 168, Marcel-Dekker (1994), 141–152.

85. R. deLaubenfels, *Entire vectors and entire existence families,* Proceedings of Conference on Evolution Equations, University of Strathclyde, 1994, Research Notes in Mathematics, Vol. 324, Pitman (1995), 100–108.

86. R. deLaubenfels, *Spectral projections, semigroups of operators, and the Laplace transform,* in Linear Operators, Banach Center Publications Vol. 38 (1997), 193–204.

87. R. deLaubenfels and J. Pastor, *Fractional powers and logarithms via regularized semigroups,* Proceedings of Conference on Semigroups of Operators, Rio de Janeiro, Brazil, 2001, Optimization Software, Incorporated (2002), 68–79.

Preprints

88. R. deLaubenfels, *C-existence families and improperly posed problems,* Semesterbericht Funktionalanalysis, Tübingen Wintersemester 1989/1990, 155–171.

89. R. deLaubenfels, *The Laplace space,* Seminar Notes in Functional Analysis and PDEs, Louisiana State University 1991/1992, 35–51.

90. R. deLaubenfels, *A functional calculus approach to semigroups of operators,* Seminar Notes in Functional Analysis and PDEs, Louisiana State University 1993/94, 83–107.

91. R. deLaubenfels and F. Yao, *Semigroups of bounded semivariation,* Seminar Notes in Functional Analysis and PDEs, Louisiana State University 1993/94, 108–118.

92. R. deLaubenfels, *A survey of pointwise functional calculi,* Tübinger Berichte, Heft 5, 1995/96, 80–94.

93. R. deLaubenfels, *How Old is Statistical Inference?,*
https://teacherscholarinstitute.com/Papers/HowOldIsStatisticalInference.pdf (2010).

94. R. deLaubenfels, *A relationship strictly between uncorrelated and independent,*
https://teacherscholarinstitute.com/Papers/BetweenUncorrelatedAndIndependent.pdf (2011).

95. R. deLaubenfels, *Common origins of statistical inference and calculus,*
https://teacherscholarinstitute.com/Papers/OriginsStatisticalInferenceCalculus.pdf (2012).

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