VITA
Leonard R. Rubin
December 28, 2024

1. *City of Residence*:
Norman, Oklahoma

2. *Phone Number*:
(405) 325-6711

3. *Business Address*:
Department of Mathematics, University of Oklahoma, 601 Elm Ave., Rm. 423, Norman, OK 73019

4. *Business Phone*:
(405) 325-6711

5. *Citizenship*:
U.S.

6. *Higher Education*:
B.S., Tulane, 1961 in Mathematics
M.S., Miami (Florida), 1963 in Mathematics
Ph.D., Florida State, 1965 in Mathematics (under J.J. Andrews)

7. *Military Service*:
Commissioned as Second Lieutenant, U.S. Army Reserve, May 1961
Inactive Reservist, May 1961-July 1965
Promoted to First Lieutenant, May 1964
Active Duty, July 1965-June 1967
Promoted to Captain, November 1966
Active Reserve, June 1967-June 1971
Honorable Discharge, June 1971

8. *Professional History*:
1966-1967: Part-time instructor, Northern Virginia Community College
1967(Summer) Systems Analyst with Computer Sciences Corporation, Alexandria, Virginia
1967: Assistant Professor of Mathematics, University of Oklahoma
1970: Tenured, University of Oklahoma
1971: Promoted to Associate Professor of Mathematics, University of Oklahoma

1973-1974: Visiting Associate Professor of Mathematics, University of Utah, while on sabbatical leave

1978: Promoted to Professor of Mathematics, University of Oklahoma

1983-1984: Acting Department of Mathematics Chairman, University of Oklahoma

1984-1985: Interim Department of Mathematics Chairman, University of Oklahoma

1985-1986: Fulbright Lecturer at the University of Zagreb, Yugoslavia, while on sabbatical leave

1988: University of Oklahoma Senior Faculty Summer Research Award

1992(Fall): Visiting Professor of Mathematics, University of Mexico Mathematics Institute, UNAM, while on sabbatical leave

1994–1996: Interim Associate Department Chairman, Department of Mathematics, University of Oklahoma

1996–2008: Associate Department Chairman, Department of Mathematics, University of Oklahoma

1999(Fall): Fulbright Lecturer at the University of Zagreb, Croatia, while on sabbatical leave

2006(Fall): Guest Professor of Mathematics: University of Zagreb, Zagreb, Croatia, University of Ljubljana, Ljubljana, Slovenia, Free University of the Netherlands, Amsterdam, the Netherlands, and the University of Warsaw, Warsaw, Poland, while on sabbatical leave

2015(July): Retirement from University of Oklahoma and appointment as Professor Emeritus, University of Oklahoma.

9. *Teaching Experience*:

Courses taught have included those in College Algebra, Trigonometry, Probability and Statistics, Calculus (all levels), Computer Simulations, Complex Variables, Linear Algebra, Engineering Math (ODE's and PDE's), Foundations, General and Algebraic Topology, Discrete Mathematical Structures. Classes ranged in size from the smallest, around 5 or 6 (advanced graduate), to those with over 200 students enrolled.

10. *Teaching Awards*:

Mortar Board Senior Honor Society: Outstanding Faculty Member for 1989-90

11. *Departmental Service*:

Many years service on the Graduate Committee

Director of Graduate Studies, January 1981 to September 1983

Committee A (Executive Committee) 1975-1977, 1979-1981, 1982-1983, 1990-1992

Colloquium Chairman, 1986-1994

Chair's Advisory Committee, 1989-2008

Departmental Liaison, 1994-1999

Space Committee, 2013-2015

12. *University Service*:

ROTC Advisory Committee 1976-78, 2000-2003

Tenure and Promotion Advisory Committee, Arts and Sciences, 1981-1983

Elected to Graduate Council, 1982-1985, 1997-1999, 2000-2003

Chair of subcommittee of the Graduate Council to evaluate the Graduate Dean, Fall 1997

Academic Appeals Board, 1983-1984

Faculty Appeals Board, 1987-1991

Chairman of the Faculty Appeals Board, 1990-1991

President's Advisory Committee, 1989-1991

Graduate College Academic Appeals Board, 1993-1996

University Recreational Services Advisory Committee, 1994-1997

College of Arts and Sciences Support of Teaching and Research Committee, 1994-1996

Committee Chairman, Arts and Sciences Support of Teaching and Research Committee, 1995-1996

College of Arts and Sciences Student Misconduct and Appeals Committee, 1995-1997

College of Arts and Sciences Jack Roe Denton Scholarship Award Committee Chairman, 1996-2013

Host to two Swedish international students, Fall 1997, Spring 1998

Elected to College of Arts and Sciences Policy Committee, 1997-1999

Chairman, College of Arts and Sciences Policy Committee, 1998-1999

Selected as member of the Faculty Senate Council on Campus Life, 2000-2002

Elected to College of Arts and Sciences Course and Curriculum Committee, 2003-2005

Elected as Chairman, College of Arts and Sciences Course and Curriculum Committee, 2004-2005

Elected as Member of the University of Oklahoma Speakers Bureau Committee, 2003-2006

13. *Mathematical Community Service*:

Reviewer of 563 mathematical research articles including 6 book reviews in the journals, *Zentralblatt für Mathematik* and *Mathematical Reviews*

Referee of more than 65 mathematical research articles for various journals in mathematics

Chairman, Review Panel, NSF Young Scholars Program, December 1987

Reviewer for Texas Higher Education Coordinating Board Awards in Mathematics, 2001

Reviewer for research proposals of NSF and other funding agencies

14. *Service Awards*:

Distinguished Reviewer for zbMATH Open, granted in 2024 by the Editorial Board

15. *Ph.D. Students Directed*:

Thomas J Sanders (1972)

Philip J. Schapiro (1976)

Gilbert M. Reekie (1976)

Paul R. Patten (1978)

David E. Rowe (1981)

Stuart Anderson (1982)

Richard Millspaugh (1989)

Charles Cooper (1990)

Vera Tonić (2009)

Matthew Lynam (2014)

16. *Research Publications*:

(1) Semigroups and clusters of indecomposability (with R. Dickman, R. Kelley and P. Swingle), *Fund. Math.* **56** (1964) 21-23.
(2) Characterization of n-spheres by an excluded middle membrane principle (with R. Dickman and P. Swingle), *Mich. Math. J.* **11** (1964) 53-59.
(3) Another characterization of the n-sphere and related results (with Dickman and Swingle), *Pac. J. Math.* **14** (1964) 871-878.
(4) Irreducible continua and generalization of hereditarily unicoherent continua by means of membranes (with R. Dickman and P. Swingle), *J. Australian Math. Soc.* **5** (1965) 416-426.
(5) Some spaces whose product with E^1 is E^4 (with J. Andrews), *Bull. Amer. Math. Soc.* **71** (1965) 675-677.
(6) The product of an unusual decomposition space with a line is E^4, *Duke Math. Jour.* **33** (1966) 323-330.
(7) The product of any dogbone space with a line is E^4, *Duke Math. Jour.* **37** (1970) 189-192.
(8) Recognizing certain factors of E^4, *Proc. Amer. Math. Soc.* **26** (1970) 199-200.
(9) A general class of factors of E^4, *Trans. Amer. Math.* **166** (1972) 215-224. (Erratum, **177** (1973) 505.)

(10) Line preserving topologies, *General Topology and its Applications* **2** (1972) 193-198.
(11) Indecomposable continua in Stone-Čech compactifications (with D. Bellamy), *Proc. Amer. Math. Soc.* **39** (1973) 427-432.
(12) C-separated sets and unicoherence (with R. Dickman), *Fund. Math.* **83** (1973) 25-33.
(13) C-separated sets in certain metric spaces (with R. Dickman and R. McCoy), *Proc. Amer. Math. Soc.* **40** (1973) 285-290.
(14) Compactly generated shape (with T. Sanders), *General Topology and its Appls.* **4** (1974) 73-78.
(15) Toroidal decompositions of manifolds yield factors of manifolds (with R. Daverman), *Studies in Topology* (1975), Academic Press, Inc., 83-110.
(16) Relative collaring, *Proc. Amer. Math. Soc.* **55** (1976) 181-184.
(17) New dimension-theory techniques for constructing infinite-dimensional examples (with R. Schori and J. Walsh), *General Topology and its Appls.* **10** (1979) 93-103.
(18) Hereditarily Strongly Infinite Dimensional Spaces, *Mich. Math. J.* **27** (1980) 65-73.
(19) Non-compact hereditarily strongly infinite dimensional spaces, *Proc. Amer. Math. Soc.* **79** (1980) 153-154.
(20) Completely regular absolutes and projective objects (with R. Dickman and J. Porter), *Pacific J. of Math.* **94** (1981) 277-295.
(21) Totally disconnected spaces and infinite cohomological dimension, *Topology Proceedings* **7** (1982) 157-166.
(22) Intersections of separators and essential submanifolds of I^n (with D. McCullough), *Fund. Math.* **116** (1983) 163-174.
(23) More compacta of infinite cohomological dimension, *Amer. Math. Soc.* Contemporary Mathematics Series, **44** (1985) 221-226.
(24) Determining the cohomological dimension of certain compacta, *Proc. Amer. Math. Soc.* **101** (1987) 371-376.
(25) Cell-like maps onto non-compact spaces of finite cohomological dimension (with P. Schapiro), *Topology Appls.* **27** (1987) 221-244.
(26) Recognition of certain classes of closed maps (with Z. Čerin and I. Ivanšić), *Czechoslovak Math. Journal* **38** (113), (1988) 319-323.
(27) Sectionally continuous injections of Euclidean spaces (with D.W. Curtis), *Topology and its Appls.* **32** (1989) 159-168.
(28) Approximate inverse systems of compacta and covering dimension (with S. Mardešić), *Pacific J. of Math.* **138** (1989), 129-144.
(29) Cell-like mappings and non-metrizable compacta of finite cohomological dimension (with S. Mardešić), *Trans. Amer. Math. Soc.* **313** (1989), 53-79.
(30) Some m-dimensional compacta admitting a dense set of imbeddings in R^{2m} (with D. McCullough), *Fund. Math.* **133** (1989) 273-245.

(31) Irreducible representations of normal spaces, *Proc. Amer. Math. Soc.* **107** (1989) 277-283.
(32) Sequentially equidistant points in metric spaces (with D. McCullough), *Israel J. of Math.* **59** (1990) 75-93.
(33) Characterizing cohomological dimension: the cohomological dimension of $A \cup B$, *Topology Appls.* **40** (1991), 233-263.
(34) Unknotting a disc in E^3 keeping its boundary fixed (with I. Ivanšić), *Rendiconti Circ. Mat. Palermo*, Series II **29** (1992), 229-249.
(35) Compactifications which preserve cohomological dimension (with P. J. Schapiro), *Glasnik Mat.*, **28(48)** (1993), 155-165.
(36) The hyperspaces of infinite-dimensional compacta for covering and cohomological dimension are homeomorphic (with T. Dobrowolski), *Pacific J. of Math.*, **164** (1994), 15-39.
(37) A note on approximate systems of metric compacta (with S. Mardešić and N. Uglešić), *Topology Appls.*, **59** (1994), 189-194.
(38) The space of ANR's in R^n (with T. Dobrowolski), *Fund. Math.*, **146** (1994), 31–58.
(39) An addition theorem for n-fundamental dimension in metric compacta (with R. Jiménez), *Topology Appls.*, **62** (1995), 281-297.
(40) Irreducible representations of metrizable spaces and strongly countable dimensional spaces (with R. Millspaugh and P. Schapiro), *Fund. Math.*, **148** (1995), 223-256.
(41) Extendable irreducible representations of compacta, *Glasnik Mat.*, **30(50)** (1995), 295-310.
(42) Certain 2-stable embeddings (with T. Dobrowolski and M. Levin), *Topology Appls.*, **80** (1997), 81-90.
(43) Cohomological dimension and approximate limits, *Proc. Amer. Math. Soc.*, **125** (1997), 3125-3128.
(44) The existence of n-shape theory for arbitrary compacta (with R. Jiménez), *Glasnik Mat.*, **33(53)**, (1998), 123-132.
(45) Borsuk's index and pointed movability for projective movable continua (with I. Ivanšić), *Topology Appls.*, **94** (1999), 147-153.
(46) Limit theorem for inverse sequences of metric spaces in extension theory (with P. Schapiro), *Pacific Jour. of Math.*, **187** (1999), 177-186.
(47) The Mardešić factorization theorem for extension theory (with M. Levin and P. J. Schapiro), *Proc. Amer. Math. Soc.*, **128** (2000), 3099-3106.
(48) Extension shape theory (with I. Ivanšić and P. Schapiro), *Kyungpook Math. Jour.*, **40** (2000), 157-172.
(49) A stronger limit theorem in extension theory, *Glasnik Mat.*, **36(56)** (2001), 95-103.
(50) The Extension dimension of universal spaces (with I. Ivanšić), *Glasnik Mat.*, **38(58)** (2003), 121-127.

(51) Extension dimension of stratifiable spaces (with I. Ivanšić), *Kyungpook Math. Jour.*, **43** (2003), 383-395.
(52) A product theorem in cohomological dimension for cyclic groups and metrizable spaces (with P. Schapiro), *Topology Proceedings*, **27** (2003), 291-293.
(53) Cell-like resolutions in the strongly countable **Z**-dimensional case, (with S. Ageev and R. Jiménez), *Topology Appls.*, **140** (2004), 5-14.
(54) A selection theorem for simplex-valued maps, (with I. Ivanšić), *Glasnik Mat.*, **39(59)** (2004), 331-333.
(55) Limit theorem for semi-sequences in extension theory (with I. Ivanšić), *Houston J. of Math.*, **31** (2005), 787-807.
(56) A local to global selection theorem for simplex-valued functions (with I. Ivanšić), *Glasnik Mat.*, **40(60)** (2005), 339-345.
(57) Resolutions for metrizable compacta in extension theory (with P. Schapiro), *Trans. Amer. Math. Soc.*, **358** (2005), 2507-2536.
(58) Local characterization of absolute co-extensors (with I. Ivanšić), *Glasnik Mat.*, **42(62)** (2007), 83-87.
(59) Some applications of semi-sequences to extension theory (with I. Ivanšić), *Topology Proceedings*, **31** (2007), 1-17.
(60) Unbounded sets of maps and compactification in extension theory, *Topology Appl.*, **155** (2007), 82-91.
(61) Inverse sequences and absolute co-extensors (with I. Ivanšić), *Bull. Polish Acad. Sci.*, **55** (2007), 243-259.
(62) Extension theory and the Ψ^{∞} operator (with I. Ivanšić), *Pub. Math. Debrecen*, **73/3-4** (2008), 265-280.
(63) A note on extension theory and direct limits (with S. Mardešić), *Pub. Math. Debrecen*, **75/3-4** (2009), 437-445.
(64) Extension dimension of a wide class of spaces (with I. Ivanšić), *Jour. Math. Soc. Jap.*, **61** (2009), 1-14.
(65) Embedding in a direct limit, *Kyungpook Math. Jour.*, **49** (2009), 725-729.
(66) Extension theory and the first uncountable ordinal space, *Topology Proceedings*, **36** (2010), 27-36.
(67) Extension theory and finite products of copies of $[0, \Omega)$, *Topology Appls.*, **157** (2010), 2413-2420.
(68) Pseudo-compactness of direct limits (with I. Ivanšić), *Topology Appls.*, **160** (2013), 360-367.
(69) Simultaneous $\mathbf{Z}/p$-acyclic resolutions of expanding sequences (with V. Tonić), *Glasnik Mat.*, **48(58)**, (2013), 443-466.
(70) The topology of limits of direct systems induced by maps (with I. Ivanšić), *Mediterr. J. Math.*, **11** (2014), 1261-1273.
(71) Product theorems and examples in pseudo-compactness (with I. Ivanšić), *Asian J. of Math. & Computer Research*, **4** (2015), 16-23.
(72) Finite products of limits of direct systems induced by maps (with I. Ivanšić), *Appl. Gen. Topol.*, **16** (2015), 209-215.

(73) Certain weakly generated noncompact pseudo-compact topologies on Tychonoff cubes, *Glasnik Mat.*, **51(71)**, (2016), 447-452.
(74) Generalized suspension theorem in extension theory, *Glasnik Mat.*, **52(72)**, (2017), 179-183.
(75) The paucity of universal compacta in cohomological dimension, *Topology Appls.*, **228**, (2017), 243-276.
(76) Topological n-cells and Hilbert cubes in inverse limits, *Appl. Gen. Topol.*, **19** (2018), 9-20.
(77) Extensional maps and approximate inverse limits (with M. Lynam), *Topology Appls.*, **239** (2018), 324-336.
(78) Approximate inverse systems and (m, n)-dimensions (with M. Lynam), *Glasnik Mat.*, **55(75)** (2020), 129-142.
(79) Čech systems and approximate inverse systems (with V. Matijević), *Glasnik Mat.*, **55(75)** (2020), 367-373.
(80) Čech systems that induce approximate inverse systems (with V. Matijević), *Topology Appls.*, **279** (2020), 107238.
(81) Quasi-components, Čech systems, and approximate inverse systems (with V. Matijević), *Rocky Mountain J. Math.*, **51** (2021), 657-667.
(82) Inverse systems of compact Hausdorff spaces and (m, n)-dimension (with M. Lynam), *Rad Hrvat. Akad. Znan. Umjet. Mat. Znan.*, **26** (2022), 189-199.
(83) Alternate proofs of the n-dimensional resolution theorems (with V. Tonić), *Topology Appls.*, **305** (2022), 107883.
(84) Čech systems and spaces that are not strongly 0-dimensional, (with V. Matijević), *Houston J. Math.*, **48** (2022), 189-203.
(85) Delay-inverse systems (with V. Matijević), *Topology Appls.*, **348** (2024) 108891.
(86) Characterizing strong infinite-dimension, weak infinite-dimension, and dimension in inverse systems (with M. Lynam), *Rad Hrvat. Akad. Znan. Umjet. Mat. Znan.*, **29** (2025), 299-318.
(87) The maximum cardinality of essential families in regular or normal spaces, *Rad Hrvat. Akad. Znan. Umjet. Mat. Znan.*, to appear.

17. *Expository Publications*:

(1) The gross feasibility estimator for military movement planning (with S. Ditmeyer), *New York Academy of Sciences*, 1967.
(2) Dogbone decompositions and factors of E^4, University of Georgia Summer Topology Conference Notes (1975).
(3) Cell-like maps, dimension and cohomological dimension: a survey, *Geometric and Algebraic Topology,* Banach Center Publications **18** (1986) 397-402.
(4) Teorija dimenzije 20. stoljeća, *Poučak*, **8** (2001), 5-11. (English title: Dimension theory in the 20th century. Article appears in Croatian, translated from English into Croatian by Ivan Ivanšić.)

18. *Books*:

    (1) *Extension, Dimension and Shape* (with Ivan Ivanšić), *Element Press*, Zagreb, (2020) 188 pages.

19. *Other Publications*:

    (1) Not every metrizable compactum is the limit of an inverse sequence with simplicial bonding maps, posthumously prepared and edited for Sibe Mardešić by L. Rubin, *Topology Appls.*, **239** (2018), 120-122.