CURRICULUM VITAE

Name:	KARL HEINRICH HOFMANN
Rank:	Professor
Department:	Mathematics

VITAL STATISTICS:

Date of Birth:	October 3, 1932 Heilbronn, Germany
Marital Status:	Married: 5/9/63 (Isolde)
Children:	Claudia Sofia (11/17/70) Georg Wilhelm (6/6/73)

EDUCATION:

1952-57	Universität Tübingen und Universität Hamburg
1957	Prüfung für das Lehramt an höheren Schulen, Universität Tübingen
1958	Dr. rer. nat., Universität Tübingen
1962	Habilitation für das Fach Mathematik, Universität Tübingen

PROFESSIONAL BACKGROUND:

1958-59	Universität Tübingen, Assistant Professor (teaching, research)
1959-60	Universität Tübingen, Member of the Research Group for Mathematical Statistics
1961-65	Universität Tübingen, Dozent (teaching, research)
1963-65	Tulane University, Associate Professor (teaching, research)
1965-	Tulane University, Professor (teaching, research)
1977-78	Tulane-Newcomb Junior Year Abroad Program, Professor-in-Charge, Paris, France (teaching, administration)
1980	Tulane University, W. R. Irby Professor of Mathematics (teaching, research)
1982-98	Technische Hochschule Darmstadt, Germany, Professor C4 für Mathematik, Arbeitsgruppe 5 (Funktionalanalysis)
1998	Technische Universität Darmstadt, Professor Emeritus
1982	Tulane University, Adjunct Professor of Mathematics
1998	Technische Universität Darmstadt, Emeritus Professor of Mathematics

Visiting Positions:

1960-61	Tulane University, New Orleans, Visiting Research Associate
1966	Universität Tübingen, Germany, Gastprofessor, summer 1966
1967-68	Institute for Advanced Study, Princeton, N.J.: Visiting Member, (also summer, 1965)
1973-74	Université de Paris VI, Paris, France; professeur associé
1974	Technische Hochschule, Darmstadt, Germany, Gastprofessor (summer)
1977	La Trobe University, Melbourne, Australia, Visiting Professor (May 1 - June 4)
1980-81	Technische Hochschule, Darmstadt, Germany, Gastprofessor
1986	Université Catholique de Louvain-la-Neuve, Belgium, professeur invité (January 20- 25)
1987	Université Catholique de Louvain-la-Neuve, Belgium, professeur invité (April 13-18)
1988	Université Catholique de Louvain-la-Neuve, Belgium, professeur invité (March 7-April 1)
2000	University of South Australia, Mawson Lakes Campus, Adelaide, Visiting Scholar (October 15- January 30, 2001)
2002	University of Ballarat, Victoria, Australia Visiting Scholar (October 14- January 31, 2003)
2004	University of Ballarat, Victoria, Australia Visiting Professor (October- January, 2005)

PUBLICATIONS:

A. Papers in Journals:

1. Eine Bemerkung über die zentralen Untergruppen in zusammenhängenden Gruppen, Archiv. d. Math. **9** (1958), 33-38.
2. Topologische Loops, Math. Z. **70** (1958), 13037.
3. Topologische Loops mit schwachen Assoziativitätsforderungen, Math. Z. **70** (1958), 125-155.
4. Topologische Doppelloops, Math. Z. **70** (1958), 213-230.
5. Topologische distributive Doppelloops, Math Z. **71** (1959), 36-38.
6. Topologische Doppelloops und topologische Halbgruppen, Math. Ann. **138** (1959), 239-258.
7. Über archimedische angeordnete, einseitig distributive Doppelloops, Archiv. d. Math. **10** (1959), 348-355.
8. Die Mächtigkeit zusammenhängender Hausdorffräume, Archiv. d. Math. **11** (1960), 419-422 (with H. Kneser).
9. Lokalkompakte zusammenhängende topologische Halbgruppen mit dichter Untergruppe, Math. Ann. **140** (1960), 22-32 und Berichtigung, ibid., s. 442.
10. Erwartungtreue Schätzwerte bei der Volumbestimmung nichtkugeliger Zellkerne, Biometrische Zeitschrift **2** (1960), 257-268.
11. Topologische Halbgruppen mit dichter submonogener Unterhalbgruppe, Math. Z. **74** (1960), 232-276.
12. Ein komplexer Neokörper ohne reellen Unerneokörper, Math. Z. **75** (1961), 295-298.
13. Über die topologische und algebraische Struktur topologischer Doppelloops und einiger topologischer projektiver Ebenen, Colloquium on the Algebraic and Topological Foundations of Geometry in Utrecht, 1960. Oxford 1961, 61-71.
14. The automorphism group of certain function rings, Archiv. d. Math. **12** (1961), 420-424 (with Fred B. Wright).
15. Connected abelian groups in compact loops, Trans. Amer. Math. Soc. **104** (1962), 132-143.
16. Der Schursche Multiplikator topologischer Gruppen, Math. Z. **79** (1962), 389-421.

17./18. Über die Zeit aus mathematischer Sicht I, II, Math. Phys. Sember. **9** (1962), 142-156, und **10** (1963), 34-46.

19. Locally compact semigroups in which a subgroup with compact complement is dense, Trans. Amer. Math. Soc. **106** (1963), 19-51.

20. Homogeneous locally compact groups with compact boundary, Trans. Amer. Math. Soc. (1963), 52-63.

21. Pointwise periodic groups, Fund. Math. **52** (1963), 103-122 (with Fred B. Wright).

22. Über lokal kompakte positive Halbkörper, Math. Ann. **151** (1963), 262-271.

23. Zerfällung topologischer Gruppen, Math. Z. **84** (1964), 16-37.

24. Tensorprodukte lokal kompakter abelscher Gruppen, Journ. f. d. reine u. ang. Math. **261** (1964), 134-149.

25. Irreducible semigroups, Bull. Amer. Math. Soc. **70** (1964), 621-627 (with P. S. Mostert).

26. Totally ordered D-class decomposition, Bull. Amer. Math. Soc. **70** (1964), 765-772 (with P. S. Mostert).

27. Lie algebras with subalgebras of co-dimension one, Illinois Journ. of Math. **9** (1965), 636-643.

28. Die topologische Struktur des Raumes der Epimorphismen kompakter Gruppen, Archiv. d. Math. **16** (1965), 191-196 (with P. S. Mostert).

29. Connected extensions of simple semigroups, Czechosl. Math. J. **15** (1965), 295-298 (with P. S. Mostert).

30. Compact groups acting with $(n-1)$-dimensional orbits on subspaces of n-manifolds, Math. Ann. **167** (1966), 224-239 (with P. S. Mostert).

31. The representation of biregular rings by sheaves, Math. Z. **91** (1966), 103-123 (with J. Dauns).

32. Über das Nilradikal lokal kompakter Gruppen, Math. Z. **91** (1966), 206-215.

33. Gelfand-Naimark theorems for non-commutative topological rings, Second Symposium on General Topology and its Relations to Modern Algebra and Analysis in Prague, 1966. Prague, 1967, 184-189.

34. Nilpotent groups and automorphisms, Acta. Scient. Math. **29** (1968), 225-246 (with J. Dauns).

35. Categories with convergence, exponential functors, and the cohomology of compact abelian groups, Math. Z. **104** (1968), 106-140.

36. One dimensional coset spaces, Math. Ann. **178** (1968), 44-52 (with P. S. Mostert).

37. The cohomology of compact abelian groups, Bull. Amer. Math. Soc. **74** (1968), 975-978 (with P. S. Mostert).

38. Applications of transformation groups to problems in the theory of semigroups, Conference on Transformation Groups, Tulane Univ., 1967. Springer-Verlag, 1968, 370-380 (with P. S. Mostert).

39. The existence of continuous functors, exponential functors, and the Cech cohomology Hopf algebra of compact groups, Proc. Int. Symp. on Extension Theory, Berlin, 1967, Dt. Verl. d. Wiss., Berlin, 1969, 115-117.

40. Extending C*-algebras by adjoining identity, ibid., 119-125.

41. Spectral theory of algebras and adjunction of identity, Math. Ann. **179** (1969), 175-202 (with J.Dauns).

42. Finite dimensional submodules of G-modules for a compact group, Proc. Cambridge Phil. Soc. **69** (1969) 47-52.

43. Problems about compact semigroups, Proceedings of the Conference on Semigroups in Detroit, 1968. Academic Press, 1969, 85-100 (with P. S. Mostert).

44. The cohomology ring of a compact abelian group, Proceedings of the International Symposium on Topology and its Applications in Herceg-Novi, Yugoslavia, 1968; Belgrade 1969, 189-192.

45. About the cohomology ring of a finite abelian group, Bull. Amer. Math. Soc. **75** (1969), 391-395 (with P. S. Mostert).

46. A general invariant metrisation theorem for compact spaces, Fund. Math. **68** (1970).

47. Automorphic actions of compact groups, Proc. 2nd Florida Symposium on Semigroups and Automata, II, Dept. Math. Univ. Florida, Gainesville, April, 1971, 53 pp.

48. The centralizing theorem for left normal groups of units in compact monoids, Semigroup Forum **3** (1971), 31-42 (with M. Mislove).

49. Representation of rings in sheaves and fields, Bull. Amer. Math. Soc. **78** (1972), 291-373.

50. Clan acts and codimension, Semigroup Forum **4** (1972), 206-214 (with J. Day).

51. Die Formel von Campell, Hausdorff und Dynkin und die Definition Liescher Gruppen, Theory of Sets and Topology, Dt. Verl. d. Wissensch., Berlin, 1972, 251-264.

52. Fixed point and centralizing theorems in compact semigroup theory, Colloquia Math. Soc. Janos Bolyai, 8. Topics in Topology, Kesthely (Hungary), (1972), 417-424 (with M. Mislove).

53. On the duality of semilattices and its applications, Proc. Univ. Houston, Lattice Theory Conf., Houston 1973, 261-268 (with M. Mislove and A. Stralka).

54. Lawson semilattices do have a Pontryagin duality, same Proceedings, 200-215 (with M. Mislove).

55. On the dimensional stability of compact zero dimensional semilattices, same Proceedings, 194-199 (with M. Mislove).

56. Mapping cylinders and compact monoids, Math. Annalen **205** (1973), 219-239 (with A. Stralka).

57. Push-outs and strict projective limits of semilattices, Semigroup Forum **5** (1973), 243-261 (with A. Stralka).

58. Errors in "Elements of Compact Semigroups", Semigroup Forum **5** (1973), 285-322 (with H. Carruth and M. Mislove).

59. Alexander Doniphan Wallace on his 68th birthday, Semigroup Forum **7** (1973), 10-31 (with R. J. Koch and P. S. Mostert).

60. Dimension raising maps in topological algebra, Math. Z. **135** (1973), 1-36 (with M. Mislove and A. Stralka).

61. On a centralizer result of Hunter's, Semigroup Forum **6** (1973), 365-372 (with R. P. Hunter).

62. Théorie directe des groupes de Lie I-IV, Seminaire Dubreil (Algèbre) 27e anneé, 1973-74, no.1 (24 p.), no.2 (16 p.), no.3 (39 p.), no.4 (15 p.); Secrétariat mathématique, Paris.

63. On the fixed point set of a compact transformation group with some applications to compact monoids, Trans. Amer. Math Soc. **206** (1974), 137-162 (with M. Mislove).

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65. Sur la décomposition semidirecte des groupes compacts connexes, Proc. Symp. Topol. Groups and Lie Groups, Rome 1974; Symposia Mathematica **26** (1975), 471-476.

66. Epimorphisms of compact Lawson semilattices are surjective, Archiv. d. Math. **26** (1975), 337-345 (with M. Mislove).

67. On the dimensional capacity of compact semilattices, Houston J. Math. **1** (1975), 43-55 (with M. Mislove and A. Stralka).

68. Category theoretical methods in topological algebra, in: Ernst Binz and Horst Herrlich, Eds.: Categorical Topology, Proceedings of a Conference in Mannheim 21-25 July, 1975, xv+719 pp., Lecture Notes in Mathematics **540** (1976), 345-403.

69. On the amalgamation in concrete categories with concrete duals, Algebra Universalis **6** (1976), 327-347 (with M. Mislove).

70. Topological Semigroups, History, Theory, Applications, Jahresbericht d. dt. Mathematikervereinigung **78** (1976), 9-59.

71. Irreducibility and generation in continuous lattices, Semigroup Forum **13** (1977), 307-353 (with J. D. Lawson).

72. The lattice of kernel operators and topological algebra, Math. Z. **154** (1977), 175-188 (with M. Mislove).

73. Bundles and sheaves are equivalent in the category of Banach spaces, in: Lecture Notes in Mathematics **575** (1977), 53-69.

74. Book Review. "Representation of commutative semitopological semigroups" by C. Dunkl and D. Ramirez, Bull. Amer. Math. Soc. **83** (1977), 236-243.

75. On the density of the image of the exponential function, Math. Ann. **234** (1978), 263-273 (with A. Mukherjea).

76. Locally compact products and coproducts in categories of topological groups, Bull. Austr. Math. Soc. **17** (1978), 401-417 (with S. Morris).

77. The spectral theory of continuous lattices, Trans. Amer. Math. Soc. **246** (1978), 285-310 (with J. D. Lawson).

78. Sheaf theoretical concepts in analysis: Bundles and Sheaves of Banach Spaces, Banach $C(X)$-modules, Lecture Notes in Mathematics **753** (1979), 415–441 (with Klaus Keimel).

79. A note on Baire spaces and continuous lattices, Bull. Austr. Math. Soc. **21** (1980), 265-279.

80. Continuous lattices and the theory of locally quasicompact spaces, Lecture Notes in Mathematics **871** (1981), 209-248 (with M. Mislove).

81. The spectrum as a functor, Lecture Notes in Mathematics **871** (1981), 249-263 (with F. Watkins).

82. An essay on free compact groups, Proc. Int. Conf. on Categorical Aspects of Topology and Analysis at Carleton Univ. 1981, Lecture Notes in Mathematics, 915, 1982, 171-197.

83. Compact extensions of compactly generated nilpotent groups are pro-Lie, Proc. Amer. Math. Soc. **84** (1982), 443-448, (with J. R. Liukkonen and M. Mislove).

84. Concentration functions and a class of non-compact groups, Math. Ann. **256** (1981), 535-548 (with A. Mukherjea).

85. The local theory of semigroups in nilpotent Lie groups, 16 pp. (with J. D. Lawson), Semigroup Forum **23** (1981), 343-357.

86. Eine Stilkunde des Raumbegriffs - Spekulationen zwischen Kunst- und Mathematikgeschichte, Jahrbuch Überblicke der Mathematik 1982, Bibliographisches Institut AG, 171-191.

87. The order theoretical foundations of a theory of quasicompactly generated spaces without separation axiom, J. Australian Math. Soc. **36** (1984), 194-212 (with J. D. Lawson).

88. Foundations of Lie semigroups, Lecture Notes in Mathematics **998** (1983), 128-201 (with J. D. Lawson).

89. Divisible subsemigroups of Lie groups, J. London Math. Soc. (2) **27** (1983), 427-434 (with J. D. Lawson).

90. Order aspects of the essential hull of a topological T_0-space, Annals of Discrete Math. **23** (1984), 193-206.

91. On free objects in the category of completely distributive lattices, in "Continuous Lattices and their Applications". R. E. Hoffmann and K. H. Hofmann, Eds., Marcel Dekker, New York 1985, 129-150 (with M. Mislove).

92. Complete distributivity and the injective hull of a T_0-space, ibid. (see 91), 121-127.

93/94. On Sophus Lie's Fundamental Theorems I, II Indag. Math., **45** (1983), 453-466, ibid. **460** (1984), 255-265 (with J. D. Lawson).

95. Remarks on the spectral theory of C^*-algebras, in: Proceedings of International Conference on Representation Theory and Operator Algebras. In: Neptun, Romania 1980, Pitman, Boston, London, Melbourne 1983, pp. 239-253.

96. Finite dimensional continuous representations of compact regular semigroups (with A. M. Skryago), Semigroup Forum **28** (1984), 199-234.

97. Free compact groups I: Free compact abelian groups, (with S. A. Morris), Topology and its Applications **23** (1986), 41-64. Errata Topol. Appl. **28** (1988), 101-102.

98. Semigroups in Lie groups, Lie semialgebras in Lie algebras (with J. Hilgert), Trans. Amer. Math. Soc. **28** (1985), 481-504.

99. Stably continuous frames and their topological manifestations, in Categorical Topology, Proc. Conference Toledo, Ohio 1983, Heldermann Verlag Berlin 1984, 282-307.

100. Lie semialgebras are real phenomena, Math. Ann. **270** (1985), 97-105 (with J. Hilgert).

101. The invariance of cones and wedges under flows, Geometriae Dedicata, **21** (1986), 205-217 (with J. Hilgert).

102. Book Review: "Einführung in die Ordnungstheorie" von Marcel Erné, Bibl. Inst. Mannheim, 1982, v+296 pp., Order **1** (1984), 205-208.

103. Book Review: "The Theory of Topological Semigroups" by J. H. Carruth, J. A. Hildebrandt and R. J. Koch, Marcel Dekker, New York 1983, 244 pp., American Scientist **72** (1984), 306-307.

104. On Sophus Lie's Fundamental Theorems III, J. Funct. Analysis. 67 (1986), 1-27 (with J. Hilgert).

105. Lie theory for semigroups, Semigroup Forum **30** (1984), 243-251 (with J. Hilgert).

106. Local semigroups in Lie groups, and locally reachable sets, (with J. D. Lawson), Rocky Mountain J. of Math. **20** (1990), 717-735.

107. Lie's fundamental theorems for local analytical loops, Pac. J. Math.**123** (1986), 301-327 (with K. Strambach).

108. The Akivis algebra of a homogeneous loop, Mathematika, **33** (1986), 87-95 (with K. Strambach).

109. Controllability of systems on a nilpotent Lie group, Beiträge zur Algebra und Geometrie **20** (1985), 185-190 (with J. Hilgert and J. D. Lawson).

110. Semigroups in the 19th century? A historical note. In: Theory of Semigroups, Mathematische Gesellschaft der DDR, 1984, pp.44-65.

111. Invariant quadratic forms on finite dimensional Lie algebras, Bull. Austr. Math. Soc. **33** (1985), 21-36 (with Verena S. Keith).

112. Lorentzian cones in real Lie algebras, Monatshefte f. Math. **100** (1985), 183-210 (with J. Hilgert).

113. Old and New on Sl(2), Manusc. Math. **54** (1985), 17-52 (with J. Hilgert).

114. Invariant cones in real Lie algebras, in: Aspects of Positivity in Functional Analysis, R. Nagel, U. Schlotterbeck, M.P.H. Wolff (editors), Elsevier Science Publishers, 1986, 209-216 (with J. Hilgert).

115. Torsion and curvature in smooth loops, Publ. Math. Debrecen, **38** (1990), 1-26 (with K. Strambach).

116. Free Compact Groups II: The center, Topology and its Applications **28** (1988), 215-231 (with S. A. Morris).

117. Weight and c, J. Pure and Applied Algebra, **68** (1991), 181-194 (with S. A. Morris).

118. Book Review: "Representations of Compact Lie Groups" by Theodor Bröcker and Tammo tom Dieck, Springer Verlag New York, Berlin, Heidelberg, Tokyo, 1985, x+313 pp., Bull. Amer. Math. Soc. **16** (1986), 153-161, also Jahresbericht der Dt. Math. Vereinigung **89** (1987), 39-43 (shorter version).

119. Compactly embedded Cartan algebras and invariant cones in Lie algebras, Advances in Mathematics **75**, (1989), 168-201, (with J. Hilgert).

120. More on Cancellative Semigroups on Manifolds, Semigroup Forum **37** (1988), 93-111 (with W. Weiss).

121. The smallest proper congruence on S(X), Glasgow Math. J., **30** (1988), 301-313 (with K. D. Magill, Jr.).

122. The foliation of semigroups by congruence classes, Monatshefte f. Math. **106** (1988), 179-204 (with W. A. F. Ruppert).

13. Invariant cones in Lie Algebras, Semigroup Forum **37** (1988), 241-252 (with J. Hilgert).

124. Classification of invariant cones in Lie Algebras, Bull. Amer. Math. Soc. **19** (1988), 441-446 (with J. Hilgert).

125. Idempotent continuous multiplications on homotopy and cohomology surfaces, Rocky Mountain J. of Mathematics, **21** (1991), 1279-1315 (with K. Strambach).

126. Foliations induced by congruences, Semigroup Forum **38** (1989), 363-367 (with W. A. F. Ruppert).

127. Free Compact Groups III: Free semisimple compact groups (with S. A. Morris) in: K. Husek, S. MacLane, Eds. Proc. Conf. Cat. Top Prague 1988, World Scientific Publ. Singapore, 1989, 20-219.

128. On the interior of subsemigroups of Lie groups, Transactions Amer. Math. Soc. **324** (1991), 169-179 (with W.A.F. Ruppert).

129. Equidimensional immersions of locally compact groups, Math. Proc. Camb. Phil. Soc. **105** (1989), 253-261 (with Ta-Sun Wu, Jeoung S. Yang).

130. On the causal structure of homogeneous manifolds, Math. Scand. **67** (1990), 119-144 (with J. Hilgert).

131. Hyperplane subalgebras in Lie algebras, Geometriae dedicata, **36** (1990), 207-224.

132. On an application of the work of D. E. Knuth to semigroups, Semigroup Forum **39** (1989), 117-124.

133. Lie groups and semigroups, in: The analytical and topological theory of semigroups, K. H. Hofmann, J. D. Lawson, and J. S. Pym, Eds., de Gruyter Verlag, Berlin, 1990, 3-26.

134. Free compact groups IV: Splitting the component and the structure of the commutator group. J. Pure and Applied Algebra, **70** (1991), (with S. A. Morris).

135. Einige Ideen Sophus Lies - hundert Jahre danach, Jahrbuch Überblicke Mathematik 1991, 93-125.

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137. Book Review: Yaglom, I. M.: Felix Klein and Sophus Lie, Evolution of the Idea of Symmetry in the Nineteenth Century, Boston-Basel: Birkhäuser-Verlag 1988, 237 S., in: Jahresber. d. Dt. Math. Ver. **92** (1990), 19-21 (Buchbesprechungen).

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140. A memo on the exponential function and regular points, Arch. d. Math. (Basel) **59** (1992), 24-37.

141. Compact subgroups of Lie groups and locally compact groups, Proc. Amer. Math. Soc., **120** (1994), 623-634 (with C. Terp).

142. Book Review: "Lie Groups and Algebraic Groups" by A. L. Onishchik and E. V. Vinberg, Springer-Verlag New York Inc., 1990, IX+328 pp., in: Jahresber. d. Dt. Math. Ver. **96** (1994), Buchbesprechungen 9-15.

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144. Free compact groups V: Remarks on projectivity, in: H. Herrlich and H.-E. Porst, Eds., Category Theory at Work, Heldermann Verlag, Berlin 1991, 177-198 (with S. A. Morris).

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147. Generators on the arc component of compact connected groups, Math. Proc. Camb. Phil. Soc., **113** (1993), 479-486 (with Sidney A. Morris).

148. Finitely generated connected locally compact groups, Seminar Sophus Lie **2** (1992), 123-134 (with Sidney A. Morris).

149. Near-Cartan-algebras and groups, Seminar Sophus Lie **2** (1992), 135-151.

150. Locally compact groups with closed subgroups open and p-adic, Math. Proc. Camb. Phil. Soc. **118** (1995), 303-313 (with S. A. Morris, S. Oates-Williams, and V. N. Obraztsov).

151. On porcupine varieties in Lie algebras, Math. Annalen **238** (1994), 403-425 (with W.A. F. Ruppert).

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157. Semigroups and Hilbert's Fifth Problem, Mathematica Slovaka **44** (1994), 365-377.

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164. Epimorphisms of C*-algebras are surjective, Archiv d. Math. (Basel) **35** (1995), 134–137 (with K.-H. Neeb).

165. Small large subgroups of topological groups, Note di Matematica **14** (1997), 161–165 (with S. A. Morris, P. Nickolas, and V. Pestov).

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C1. Books and Articles illustrated:

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Aigner, M. and G. M. Ziegler, Proofs from the Book, Springer-Verlag Berlin etc., 1998, viii+199pp. Second Edition 2001, viii+215 pp. (three additional drawings for newly inserted text), German Version 2002: Das BUCH der Beweise, 2002, viii+247 S., Zweite Auflage, 2004, vii+271 S., (one replacement drawing p. 153), Second Edition 2003, Japanese Translation, 2002, xiii+314 pp., Polish Translation 2002, 266 pp., Third Edition 2003, viii+239 pp. (four additional drawings for nexly inserted text), Turkish Edition 2009, 263 pp. Fourth Edition 2009, xiii+274 pp. (five additional drawings for newly inserted text). Fifth Edition 2014, xiii+380 (seven additional drawings for newly inserted text). Sixth Edition 2018, (one additional drawing for newly inserted text).

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Enzensberger, Hans Magnus, Zugbrücke außer Betrieb/Drawbridge up — Die Mathematik im Jenseits der Kultur/A Cultural Anathema, A. K. Peters, Natick, Massachusetts, USA, 1999, 48pp Hardcopy edition 2001, ISBN 1-56881-156-X; Japanese Edition 2003, ISBN 4-535-78351-9, 75pp

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IEEE Signal Processing Magazine **24**-4 (2007), Front Cover Design; see also page 1 and the first pages of all articles dealing with the "Bootstrap Method".

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Winterstein, S., Hrsg., Die Strudlhofstiege—Biographie eines Schausplatzes Bibliophile Edition, Wien, 2010, 175 S. One pen and water color illustration, p. 121.

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C2. Other illustrations:

Abel-Rau, S., Was um uns lebt und webt, Gedichte. Illustriert mit Federzeichnungen. Im Verlag der Buchhandlung Knödler, Reutlingen, 1953, 92 pp

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C3. Ausstellungen—Exhibitions

• TU Berlin, August 1998 anlässlich des ICM in Berlin: Plakate aus 15 Jahren.

• Schlösschen in der Orangerie Darmstadt, Bildhafte Mathematik: Ausstellung von Keramiken von Jürgen Bokowski und von Kolloquiumsplakaten von Karl H. Hofmann, Sommer 2004.

• Jahrestagung der Gesellschaft für Operations Research München, Universität der Bundeswehr 1.-3. September 2010; 35 Kolloquiumsplakate.

• Joint Mathematics Meeting January 2011 in New Orleans, January 6–10: Exhibition MathArt; two Colloquium Posters.

• CTW 2012—11th Cologne–Twente Workshop on Graphes and Combinatorial Optimization, München, Universität der Bundeswehr 29.-31. Mai 2012; 30 Kolloquiumsplakate. (Cf. Proceedings, Stefan Pickl, Ed., ISBN 978-3-943207-05-7 with 11 Illustrations.)

• Ausstellung zum 85. Geburtstag von Karl Heinrich Hofmann, Fachbereich Mathematik der TU Darmstadt anlsslich des Kolloquiums am 3.November 2017; 20 Kolloquiumsplakate

C4. Mathematics in Publicity

At Technische Universität Darmstadt weekly posters 125 cm by 44 cm for the "Colloquium in Mathematics" = "Mathematisches Kolloquium" since 1983 to present, see Website:

https://www.mathematik.tu-darmstadt.de/fb/kolloq/galerie_/index.de.jsp

D. Editorial Work:

Managing Editor:	Journal of Lie Theory 1994; Vol. 4 (1994), through Vol 8 (1998), Heldermann Verlag Lemgo, (formerly Seminar Sophus Lie 1, 2, 3, 1991-1993)
Communicating Editor	Journal of Lie Theory 1999-2018.
Editor:	Semigroup Forum, New York 1970-1998
Honorary Editor:	Semigroup Forum, New York 1998-
Editor:	Forum Mathematicum, Berlin 1989-1999
	Wissenschaftlicher Beirat: Mathematische Zeitschrift, Heidelberg 1972-1995
Editor:	R & E (Research and Exposition in Mathematics), Heldermann Verlag, Berlin, 1981-
Scientific Board:	Encyclopedia of Mathematics, Kluwer Acad. Publ., Dordrecht, 1988-
Editor:	Proceedings of the Tulane Year on Ring and Operator Theory, 1971-72. Lecture Notes in Math., 246, 247, 248, Heidelberg, 1972.
Editor:	(with J. Jürgenson and H.-J. Weinert) Recent Advances in the Algebraic Analytical and Topological Theory of Semigroups. Lecture Notes in Mathematics 998 (1983).
Editor:	Almost periodic compactifications, continuity, and compact semigroups (Proceedings of a Seminar held at the Technische Hochschule Darmstadt 1/28/83 through 2/8/83.
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Editor:	(with R.-E. Hoffmann), Continuous Lattices and their Applications, Proceedings of the Bremen Workshop in July 1982, Marcel Dekker, New York 1985.
Editor:	(with J. D. Lawson and J. Pym) The analytical and topological theory of semigroups: Trends and Directions, De Gruyter Verlag, Berlin, 1990.
Editor:	(with R. Wille) "Symmetry" – A collection of essays on the symmetries of discrete structures, Heldermann Verlag Berlin, 1990.
Editor:	(with J. D. Lawson and E. B. Vinberg) Semigroups in Algebra, Geometry, and Analysis, de Gruyter Verlag, Berlin, 1995, viii + 368 pp.
Editor:	(with Michael W. Mislove) Recent Advances in Semigroup Theory, London Math. Soc. Lecture Notes Series **231**, Cambridge Univ. Press, 1996, ix+165pp.

Editor:	(with Michael W. Mislove) Special Issue of Semigroup Forum dedicated to the Memory of Alfred H. Clifford, Semigroup Forum 52-1 (1995).
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Guest Editor	(with S. Ardanza-Trevijano, M. J. Chasco, and E. Martin-Peinador, and D. Shakmatov// Special Issue of Topology and its Applications in Honor of the 60th birthday of Dikran Dikranijan, 2010.

Invited Colloquia and Lectures since 1995:

July 6, 1995	TU Clausthal-Zellerfeld; Semigroups.
Oct. 28, 1995	Tulane University, An example of synthetic thinking in mathematics.
Nov. 14, 1995	Univ. of New Orleans, The synthesising effect of semigroup theory.
Nov. 30, 1995	Case Western Reserve University (Cleveland) Semigroup Theory.
Dec. 6, 1995	Louisiana State University Commutator subgroups of compact groups.
Dec. 7, 1995	LSU Semigroup Theory as unifying principle.
Feb. 24, 1996	University of Wroclaw (Poland), Compact Semigroups Applied.
Feb. 31, 1996	Banach Center, Warsaw (Poland), Banach algebras in the foundationof Lie Theory.
July 6, 1996	Universität für Bodenkultur, Wien, Austria (Seminar Sophus Lie) Extensions of compact abelian groups by discrete ones.
Sept. 20, 1996	University of Arkansas, Fayetteville AR, Self-dual locally compact abelian groups.
Oct. 05, 1996	University of Tübingen, Offene und verborgene Bezüge zwischen Malerei und Mathematik.
Nov. 07, 1996	University of Hannover, Eine Anwendung der Halbgruppentheorie in der Zahlentheorie.
Dec. 09, 1996	Mathematisches Forschungsinstitut Oberwolfach, A survey on the exponential function of real Lie groups.
Mar. 12, 1997	Lousiana State University, On the surjectivity of the exponential function of real Lie groups,
Mar. 12, 1997	Tulane University, On the surjectivity of the exponential function of real Lie groups,
Apr. 1, 1997	University of Waterloo, On the surjectivity of the exponential function of real Lie groups,
July 16, 1997	Physikalisch Technische Bundesanstalt, Braunschweig, Das Riemann-Helmholtz-Liesche Raumproblem

Apr. 3, 1998	University of New Orleans, The space problem from a mathematical view point
Apr. 27, 1998	Louisiana State University, The space problem according to Riemann-Helmholtz-Lie-Tits-Freudenthal
May 22, 1998	Universität Hannover, Das Riemann-Helmholtz-Liesche Raumproblem
July 06, 1998	Darmstadt Tech: Lecture in the interdisciplinary Series 'Was steckt dahinter': Das Raumproblem aus mathematischer Sicht
Dec. 04, 1998	Universität Tübingen, Hellmuth Kneser: Persönlichkeit, Werk und Wirkung. (Festkolloquium zum 100. Geburtstag Hellmuth Knesers)
Feb. 05, 1999	Universität Clausthal-Zellerfeld, Compact group actions and fixed points (Seminar Sophus Lie)
Mar. 29, 1999	Tulane University, Compact abelian groups and fixed point theory (Laszlo Fuchs conference)
July 02, 1999	Hydrological and Meteorological University of St.Petersburg, A personal view of the history of topological semigroups, Conference in Honor of E.S.Lyapin's 85th birthday in St. Petersburg
Sep. 09, 1999	Tulane University, The history of topological semigroups, primarily at Tulane University
Dec. 07, 1999	Humboldt University, Berlin, Zur Struktur kompakter Gruppen Über die Geschichte der topologischen Halbgruppen
May 26, 2000	Erwin Schrödinger Institut Wien (Seminar Sophus Lie), Arc components of lc groups are Borel subsets, are they not?
June 02, 2000	Technische Universität Braunschweig, Zur Geschichte topologischer Halbgruppen
July 21, 2000	University of Vigo, Spain, On the topological dimension of compact homogeneous spaces
Aug. 25, 2000	University of Bremen, Germany, On category theoretical thinking in the theory of compact groups
Sep. 28, 2000	Tulane University, Category Theory and Compact Groups
Dec. 04, 2000	University of Adelaide, Australia, Transitive actions of compact groups and topological dimension
June 15, 2001	Universität Greifswald, (Seminar Sophus Lie), Projective limites von Lie-Gruppen
July 24, 2001	City College of New York CUNY, Summer Topology Conference, Towards a strucuture theory for locally compact groups
July 25, 2001	City College of New York CUNY, Summer Topology Conference, On compact groups with large abelian subgroups
Oct. 01, 2001	Louisiana State University, Colloquium, On the exponential function of locally compact abelian groups

Oct. 26, 2001	Technische Universität München, Germany, Festkolloquium, Bogenzusammenhang in topologischen Gruppen.
Nov. 21, 2001	Universität Wien, Austria, Kolloquium, Projektive Limiten endlichdimensionaler Lie-Gruppen.
Nov. 24, 2001	Universität Graz, Austria, Festkolloquium, Das Raumproblem bei Riemann, Helmholtz und Lie
Feb. 27, 2002	Tulane University, Bill Duren Lecture, Central Perspektive in Italian Renaissance Painting (Carlo Crivelli's Annunciation Altar Piece in the London National Gallery)
March 1, 2002	University of Maryland, Colloquium Lecture, The Structure of Locally Compact and Pro-Lie Groups
Sept. 26, 2002	Tulane University, Arc Connectivity in Topological Groups
March 27, 2003	University of Montreal, Canada, Duality in Domain Theory: The Contributions of of J. D. Lawson
April 23, 2003	Technische Universität Darmstadt, Germany, Was gibt es Neues im Feld der topologischen Gruppen?
May 5, 2003	Universität Stuttgart, Germany, Was gibt es Neues im Feld der topologischen Gruppen?
May 30, 2003	University of Sheffield, UK, The Structure of Abelian Pro-Lie Groups
July 09, 2003	Howard University, Washington, DC Summer Conference in Topology in Honor of W. W. Comfort, the Lie Theory of Pro-Lie Groups
Sept 15, 2003	Louisiana State University, Baton Rouge, How did the Adjoint Functor Theorem get into Lie Theory?
March 22, 2004	Louisiana State University, Baton Rouge, Commuting matrices and Lie group theory
Nov. 23, 2004	University of Ballarat, Victoria, Australia, Editors' Cut: Managing Scholarly Journals in IT and Mathematics
May 24, 2005	Universität Bielefeld, Germany, Angewandte Mathematik in der Renaissance–Crivelli's Verkündigungsbild von Ascoli Piceno in der London National Gallery
June 16, 2005	Universität Tübingen, Germany, Angewandte Mathematik in der Renaissance–Crivelli's Verkündigungsbild von Ascoli Piceno in der London National Gallery
June 16, 2005	Universität Tübingen, Eine Klasse topologischer Gruppen, deren häufig unendlichdimensionale Lietheorie wir kennen
March 13, 2006	Dalhousie University, Pro-Lie Groups and their Lie Theory
March 15, 2006	Dalhousie University, Applied Mathematics in the Renaissance–Crivelli's London Annunciation
March 17, 2006	Dalhousie University, The Katrina Disaster and the Universities of New Orleans

July 06, 2006	Summer Conference on Topology at the University of South Georgia, Statesboro, Ga, Open Mapping Theorems for Topological Groups
January 16, 2007	Mathematisches Kolloquium Universität Siegen, Pro-Lie groups
May 6-9,2007	Institute Blaubeuren, Seminar on totally disconnected locally compact groups: Survey on Pro-Lie groups
May 21,22,2007	University of Münster: 1) Pro-Lie groups, 2) Comments on Hellmuth Kneser's Collected Papers in Topology
July 6, 2007	University of Giessen, Colloquium Lecture: Pickert, Bourbaki und wir (G.Pickert's 90th Birthday. Keynote Address)
July 22, 2007	Seminar Sophuse Lie 2007: Pro-Lie groups (E.B.Vinberg's 70th Birthday)
July 25, 2007	Invited Address SUMTOP 07 Castelló, Spain: Pro-Lie Groups
Sept. 4,2007	Tulane University, Colloquium Lecture, New Orleans, LA: Bourbaki at T and T (how Bourbaki was received on the Continent and in the US: Looking at the University of Tübingen and at Tulane University
Sept. 6, 2007	University of South Alabama, Mobile, Al: Why we study pro-Lie groups and what we know about them
Nov 16, 2007	Univ.Tübingen, Invited Lecture (Festvortrag) for "500 Years of Mathematics in Tübingen": Bourbaki in Tübingen and in the USA– Erinnerungen an die französische Revolution in der Mathematik
Dec 10, 2007	University of Münster, Conference on Wilhelm Killing: Lie Theory and Geometry. The Lie algebra of topological groups and its applications.
May 07, 2008	University of Oldenburg, Colloquium Lecture: Von topologischen Gruppen zu unendlichdimensionalen Lie-Gruppen.
July 03, 2008	University of Cluj, Seminar Sophus Lie: The Contributions of W.A.F.Ruppert to the Theory of Topolgical Semigroups I.
Oct. 13, 2008	Tulane University, WIP-Workshop, Invited Lecture: A Leisurely Walk through the Theory and History of Compact Semigroups.
Nov. 27, 2008	Univ. of Hannover, Keynote Address at the Opening an Exhibit of Marcel Erne's Work on Mathematical Cartoons: Aus der Zeichenfeder von Marcel Erné.
March 18, 2009	Algebra Seminar Tulane University: The automorphism group of an infinite product of simple real Lie algebras.
April 2, 2009	Dalhousie University, Halifax, Nova Scotia, Colloquium Lecture: On the automorphism group of pro-Lie algebras and the structure of almost connected pro-Lie groups.
June 12, 2009	Heinrich Fabri Institute, Blaubeuren, TULKA Internet Seminar on Ergodic Theory, Invited Lecture: Relevant Aspects of the Theory of Compact Groups.

March 08, 2010	Tulane University, New Orleans, Colloquium Lecture: The Daun-Hofmann Theorem revisited.
March 09, 2010	Louisiana State University, Baton Rouge, Functional Analysis Seminar: On the probability that two randomly picked elements in a compact group commute.
March 29, 2010	Dalhousie University, Halifax, Nova Scotia, Colloquium: The Probability that two randomly picked elements commute in a compact group.
June 07,2010	Dagstuhl Conference on Quantum Information: Affine Compact Semigroups and Haar Measure on Compct Groups: Wendel's Proof Revisited.
June 22, 2010	Eilat, Israel, Conference on Homeomorphism Groups, Ben Gurion University of the Negev, Eilat Campus: Automorphism Groups of Semisimple Pro-Lie Algebras and the Structure of Almost Connected Pro-Lie Groups I, II (with S. A. Morris)
July 21, 2010	Barcelona, Conference "Algebra Meets Topology": The probability that two elements commute in a compact group.
Sept. 22, 2010	Tulane University, New Orleans, Algebra Seminar: When is a full homeomorphsm group compact?
Sept. 24, 2010	Louisiana State Univ., Baton Rouge, Functional Analysis Seminar: When is a full homeomorphsm group compact?
March 30, 2011	Tulane University, New Orleans, Algebra Seminar: On certain subgroups of compact groups.
April 12, 2011	Dalhousie University. Halifax, Nova Scotia, Colloquium: On certain subgroups of compact groups.
May 3, 2011	University of Palermo, Sicily, Colloquium: The cardinality of closed subgroups of compact groups.
Sept 26, 2011	Tulane University, New Orleans, Algebra Seminar: On near abelian pro-p-groups.
Dec 4, 2012	Universität für Bodenkultur, Wien: Der Mathematiker W.A.F.Ruppert.
0Mar 18, 2015	Tulane University, New Orleans, Algebra Seminar: Some basic Structure Theorems of Compact Groups.
Nov 11, 2015	Universitẗ Gießen: Strukturmathematik: In memoriam Günther Pickert (1917-2015).
Jan 29, 2016	Universität Wuppertal: Proliegruppen: ein Spaziergang.
Mar 3, 2016	Tulane University, New Orleans, Algebra Seminar: Approximating locally compact groups by groups of integers.
June 29, 2017	University of Dayton, Dayton, Ohio, SUMTOPO2017: Locally Compact Groups, Traditions and Trends.
Oct 5, 2017	Tulane University, New Orleans, Algebra Seminar: Locally compact abelian p-groups and some of their challenges.

Dec. 6, 2017	University of Cape Town, South Africa: Conference on Toplogical Groups: Locally compact periodic groups.
Mar 2, 2018	Tulane University, New Orleans, Algebra Seminar: Some peculiar locally compact p-groups.
July 26, 2018	University of Paderborn: Weakly complete group Hopf algebras. Tagung zu Joachim Hilgerts 60. Geburtstag.
Sep 10, 2018	Tulane University, New Orleans, Algebra Seminar: Weakly complete real group algebras.
Mar 7, 2019	Tulane University, New Orleans, Algebra Seminar: In Search of Dualities: Vector Spaces–Groups.

AREAS OF MAJOR RESEARCH INTEREST:

Topological algebra and functional analysis (topological groups and semigroups, Lie theory, harmonic analysis, sheaf and bundle theory, lattice theory).

OTHER QUALIFICATIONS:

Fellowships: Fellowship of the Volkswagen Foundation 1987.
Stipendiat der Deutschen Forschungsgemeinschaft, 1974 and 1981.
Supported by the National Science Foundation, 1965-1980.
Fellow of the Alfred P. Sloan Foundation, 1966-68.
Stipendiat der Studienstiftung des Deutschen Volkes, 1955-58.

Awards: The E. Harris Harbison Award of the Danforth Foundation for Excellence in Teaching, 1970.

The Prize for Excellence in Teaching of the Association of Friends of the University of Technology in Darmstadt, 2007

Honors: Appointed W. R. Irby Professor of Mathematics at Tulane University, July 1, 1979.

Fellow of the American Mathematical Society, 2013.

Memberships: American Mathematical Society
Australian Mathematical Society
Deutschen Mathematiker Vereinigung
Société Mathématique de France
Society of the Sigma Xi

DISSERTATIONS DIRECTED:

1)	1963	Sigmund Hudson (with Paul S. Mostert)
2)	1965	Klaus Keimel
3)	1966	Dong Hoon Lee
4)	1967	Frank Eckstein
5)	1968	John F. Berglund
6)	1969	David Kahn
7)	1970	Eric C. Nummela
8)	1971	Alonso Takahashi
9)	1972	Howard E. Evans
10)		Januario Varela (with John Dauns)
11)	1973	William A. Greene
12)		Dietrich Helmer
13)	1973	William F. LaMartin
14)		Fritz Krauss
15)	1974	John Yuan (with Michael Mislove)
16)	1975	David Wallace
17)	1980	Lester W. Jones
18)	1981	Jaime Niño
19)		Michael Castellano
20)	1982	Joachim Hilgert
21)	1984	Verena Keith
22)	1987	Stefan Ihringer
23)	1988	Karlheinz Spindler
24)	1990	Wolfgang Weiss
25)	1990	Karl-Hermann Neeb
26)	1991	Christian Terp
27)	1991	Anselm Eggert
28)	1991	Norbert Dörr
29)	1992	Werner Schindler (with Jürgen Lehn)
30)	1993	Dirk Mittenhuber
31)	1995	Angelika May
32)	1995	Michael Wüstner
33)	1995	Martin Schwachhöfer
34)	1995	Christian Gross
35)	1998	Brigitte Breckner
36)	1999	Robert Graeff
37)	2001	Ulrike Klein