CURRICULUM VITÆ Prepared March, 2007

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EDUCATION:

1964	S.B.	University of Chicago
1965	S.M.	University of Chicago
1968	Ph.D.	University of Chicago

Thesis title: *Smooth structures on certain sphere bundles over spheres*
Thesis advisor: R. Lashof

EMPLOYMENT:

1968 (Sep.) – 1969 (Jan.)	Instructor	Purdue University
1969 (Feb.) – 1972 (Aug.)	Assistant Professor	Purdue University
1972 (Aug.) – 1976 (June)	Associate Professor	Purdue University
1976 (July) – 1997 (Aug.)	Professor	Purdue University
1996 (July) –	Professor	University of California, Riverside
1996 (July) – 2003 (July)	Chairman	University of California, Riverside

VISITING POSITIONS:

1973	Jan.–May	Visiting Member, Institute for Advanced Study, Princeton
1977	Jun.–Jul.	Visiting Senior Fellow, University of Newcastle-upon-Tyne
1979	Oct.–Dec.	Visitor, University of Chicago
1980	May–Jun.	Visitor, University of Bonn
1984	Sep.–Dec.	Visitor, University of Göttingen
1986	Sep.–Dec.	Visiting Professor, Northwestern University
1987	Jan.–Jul.	Visiting Researcher, Max Planck Institute for Mathematics, Bonn
1990	Jan.–Jun.	Research Professor, Mathematical Sciences Research Institute, Berkeley
1992	Jan.–May	Visiting Professor, Tulane University
1993	Jan.–May	Visiting Professor, University of Hawaii (Honolulu/Manoa)
1994	Feb.–Mar.	Visitor, Tulane University
1994	Apr.–Jun.	Visitor, University of Göttingen
1994	Jun.–Jul.	Visiting Researcher, Max Planck Institute for Mathematics, Bonn
1995	Jan.–Apr.	Visitor, Tulane University

PROFESSIONAL ACTIVITIES:

1967-	Member, American Mathematical Society
1973-	Reviewer, National Science Foundation (topology proposals)
1976-83	Editor, Proceedings of the American Mathematical Society (for articles in algebraic and geometric topology and global analysis on manifolds)
1980-83	Member, Council of the American Mathematical Society
1983	Organizing Committee Chairman, A. M. S. Research Conference on Group Actions (Boulder, Colorado, June, 1983)
1992	Organizing Committee, I. M. A. Participating Institutions Conference on symmetry, geometric structures, and invariants of low-dimensional manifolds (East Lansing, Michigan, May 1992)
1996-	Editorial Board, Korean Journal of Mathematics
2000-	Member, American Association for the Advancement of Science
2001-	Fellow, American Association for the Advancement of Science

RESEARCH INTERESTS:

Algebraic topology
Geometric topology
Transformation groups

PUBLICATIONS:

1. Smooth structures on $S^p \times S^q$, Ann. of Math. 90 (1969), 187–198.

2. Smoothings of sphere bundles over spheres in the stable range, Invent. Math. 9 (1969), 81–88.

3. The nonexistence of free circle actions on some homotopy spheres, Proc. Amer. Math. Soc. 27 (1971), 595–597.

4. On the inertia group of a product of spheres, Trans. Amer. Math. Soc. 156 (1971), 137–153.

5. Improved estimates for the degree of symmetry of certain homotopy spheres, Topology 10 (1971), 227–235.

6. Composition constructions on diffeomorphisms of $S^p \times S^q$, Pac. J. Math. 42 (1972), 739–754.

7. Semifree circle actions and the degree of symmetry of homotopy spheres, Amer. J. Math. 93 (1971), 829–839.

8. Some recent results on topological manifolds, Amer. Math. Monthly 78 (1971), 941–952. Reprinted and updated, Selected Papers on Geometry (R. W. Brink Mathematical Papers, Vol. 4), 234–246; Mathematical Association of America, Washington, D.C., 1979.

9. Semifree circle actions with twisted fixed point sets, Proceedings of the Second Conference on Compact Transformation Groups (Univ. of Massachusetts, Amherst, 1971), Lecture Notes in Math. Vol. 298, 102–116. Springer, New York, 1972.

10. $\mathbb{Z}_2$-torus actions on homotopy spheres, Proceedings of the Second Conference on Compact Transformation Groups (Univ. of Massachusetts, Amherst, 1971), Lecture Notes in Math. Vol. 298, 117–118. Springer, New York, 1972.

11. Special cases of Lopez de Medrano's problem (appendix to a paper by S. S. Lopez de Medrano), Proceedings of the Second Conference on Compact Transformation Groups (Univ. of Massachusetts, Amherst, 1971), Lecture Notes in Math. Vol. 298, page 229. Springer, New York, 1972.

12. Circle actions on homotopy spheres bounding plumbing manifolds, Proc. Amer. Math. Soc. 36 (1972), 297–300.

13. (with J. C. Becker) Spaces of equivariant self-maps of spheres, Bull. Amer. Math. Soc. 79 (1973), 158–162.

14. Homotopy decomposition of equivariant function spaces I: Spaces of principal bundle maps, Math. Zeitschrift 131 (1973), 49–75.

15. Homotopy sphere pairs admitting semifree differentiable actions, Amer. J. Math. 96 (1974), 308–323.

16. Homotopy decompositions of equivariant fuuction spaces II: Function spaces of equivariantly triangulated spaces, Math. Zeitschrift 132 (1973), 69–90.

17. A generalization of Thom classes and characteristic classes to nonspherical fibrations, Canad. Math. J. 26 (1974), 138–144.

18. (with J. C. Becker) Equivariant function spaces and stable homotopy theory, Comment. Math. Helv. 49 (1974), 1–34.

19. Circle actions on homotopy spheres bounding generalized plumbing manifolds, Math. Ann. 205 (1973), 201–210.

20. Rational h-cobordism invariants for lens space bundles, Quart. J. Math. Oxford (2) 25 (1974), 497–512. Correction, 27 (1977), 128.

21. Differentiable $\mathbb{Z}_p$-actions on homotopy spheres, Bull. Amer. Math. Soc. 81 (1974), 961–964.

22. (with J. C. Becker) Equivariant function spaces and stable homotopy theory II, Indiana Univ. Math. J. 25 (1976), 481–492.

23. Closed curves and circle homomorphisms in groups of diffeomorphisms, Fund. Math. 95 (1977), 141–146.

24. Circle actions on homotopy spheres not bounding spin manifolds, Trans. Amer. Math. Soc. 213 (1975), 89–98.

25. (with D. Burghelea) on the semisimple degree of symmetry, Bull. Soc. Math. France 103 (1975), 433–440.

26. Differentiable group actions on homotopy spheres I: Differential structure and the knot invariant, Invent. Math. 31 (1975), 105–128.

27. Spherelike G-manifolds with exotic equivariant tangent bundles, Studies in Algebraic Topology (Adv. in Math. Supplementary Studies Vol. 5), 1–39. Academic Press, New York, 1979.

28. On the topological classification of linear representations, Topology 16 (1977), 263–269.

29. Equivariant function spaces and equivariant stable homotopy theory, Transformation Groups (Proceedings of the Newcastle-upon-Tyne Conference, 1976), London Math. Soc. Lecture Notes Vol. 26, 169–189. Cambridge University Press, New York, 1976.

30. Differentiable group actions on homotopy spheres II: Ultrasemifree actions, Trans. Amer. Math. Soc. 268 (1981), 255–297.

31. (with J. C. Becker) Fixed point indices and left invariant framings, Conference on Homotopy Theory (Proceedings, Evanston, 1977), Lecture Notes in Math. Vol. 657, 1–31. Springer, Ner York, 1978.

32. Smooth actions of small groups on exotic spheres, Proc. AMS Sympos. Pure Math. 32 Part 1 (1978), 155–161.

33. Homological transfers for orbit space projections, Manuscr. Math. 24 (1978), 228–238.

34. Isotopy classes of periodic diffeomorphisms of spheres, Algebraic Topology, Waterloo 1978 (Proceedings), Lecture Notes in Math. Vol. 741, 334–354. Springer, New York, 1979.

35. Finding framed $\mathbb{Z}_p$-actions on exotic spheres, Algebraic Topology, Aarhus 1978 (Proceedings), Lecture Notes in Math. Vol. 763, 591–603. Springer, New York, 1979.

36. Group actions on hypertoral manifolds I, Topology Symposium (Siegen, 1979), Lecture Notes in Math. Vol. 788, 364–377. Springer, New York, 1980.

37. Compact fiberings of homogeneous spaces I, Comp. Math. 43 (1981), 181–215. Correction, 419–421.

38. Group actions on hypertoral manifolds II, J. reine angew. Math. 325 (1981), 75–86.

39. Exotic spheres as stationary sets of homotopy sphere involutions, Mich. Math. J. 28 (1981), 121–122.

40. (with J. C. Becker), The real semicharacteristic of a fibered manifold, Quart. J. Math. Oxford (2) 33 (1982), 385–403.

41. Differentiable group actions on homotopy spheres III: Invariant subspheres and smooth suspensions, Trans. Amer. Math. Soc. 275 (1983), 729–750.

42. (with H. Donnelly) Compact group actions and maps into aspherical manifolds, Topology 21 (1982), 443–455.

43. Differentiability and the P. A. Smith theorem for spheres I: Actions of prime order groups, Conference on Current Trends in Algebraic Topology (Univ. of Western Ontario, 1981), Canad. Math. Soc. Conf. Proc. 2 Part 2 (1982), 235–273.

44. Exotic spheres admitting circle actions with codimension four stationary sets, Proceedings of the Northwestern Homotopy Theory Conference (Evanston, 1982), Contemp. Math. 19 (1983), 339–368.

45. Upper bounds for the toral symmetry of certain homotopy spheres, Algebraic Topology, Aarhus 1982 (Conference Proceedings), Lecture Notes in Math. Vol. 1051, 645–659. Springer, New York, 1984.

46. A converse to the P. A. Smith theorem for nonunitary homology spheres, Manuscr. Math. 51 (1985), 171–199.

47. (with K. H. Dovermann and M. Masuda) Conjugation involutions on homotopy complex projective spaces, Japanese J. Math. 12 (1986), 1–34.

48. Transformation groups and exotic spheres, Proceedings of the A. M. S. Summer Research Conference on Group Actions (Boulder, Colorado, 1983), Contemp. Math. 36 (1985), 245–269.

49. (with P. Löffler) Equivariant frameability of homotopy linear circle actions on spheres, Proceedings of the A. M. S. Summer Research Conference on Group Actions (Boulder, Colorado, 1983), Contemp. Math. 36 (1985), 119–122.

50. Nonlinear analogs of linear group actions on spheres, Bull. Amer. Math. Soc. (2) 11 (1984), 263–285.

51. (with K. H. Dovermann) Equivariant Surgery Theories and Their Periodicity Properties, Lecture Notes in Mathematics Vol. 1443. Springer, Berlin-Heidelberg-New York-*et al*, 1990.

52. (with K. H. Dovermann and T. Petrie) Transformation groups and fixed point data, Proceedings of the A. M. S. Summer Research Conference on Group Actions (Boulder, Colorado, 1983), Contemp. Math. 36 (1985), 161–191.

53. Homotopy invariants and G-manifolds—A look at the past fifteen years, Proceedings of the A. M. S. Summer Research Conference on Group Actions (Boulder, Colorado, 1983), Contemp. Math. 36 (1985), 17–81.

54. (with F. Raymond) The work and influence of Deane Montgomery, Proceedings of the A. M. S. Summer Research Conference on Group Actions (Boulder, Colorado, 1983), Contemp. Math. 36 (1985), 1–15.

55. Homology spheres as stationary sets of circle actions, Mich. Math. J. 34 (1987), 83–100.

56. (with S. Kwasik) On s-cobordisms of metacyclic prism manifolds, Invent. Math. 97 (1989), 523–552.

57. (with K. H. Dovermann) Surgery of involutions with middle-dimensional fixed point set, Pac. J. Math. 130 (1987), 275–297.

58. A splitting theorem for manifolds with involution and two applications, J. London Math. Soc. (2) 39 (1989), 183–192.

59. (with S. Kwasik) Desuspension of group actions and the Ribbon Theorem, Topology 27 (1988), 443–457.

60. (with S. Kwasik) Pseudofree group actions on S^4, Amer. J. Math. 112 (1990), 47–70.

61. (with S. Kwasik) Homological properties of periodic homeomorphisms of 4-manifolds, Duke Math. J. 58 (1989), 241–250.

62. Pontryagin numbers and periodic diffeomorphisms of spheres, Transformation Groups (Proceedings, Osaka, 1987), Lecture Notes in Mathematics Vol. 1375, 307–318. Springer, New York, 1989.

63. (with S. Kwasik) Positive scalar curvature and periodic fundamental groups, Comment. Math. Helv. 65 (1990), 271–286.

64. (with N. P. Buchdahl and S. Kwasik) One fixed point actions on low-dimensional spheres, Invent. Math. 102 (1990), 633–662.

65. (with S. Kwasik) Topological pseudofree actions on spheres, Math. Proc. Camb. Philos. Soc. 103 (1991), 433–450.

66. (with S. Kwasik) Vanishing of Whitehead torsion in dimension four, Topology 31 (1992) 235–256.

67. (with S. Kwasik), Icosahedral group actions on $\mathbb{R}^3$, Invent. Math. 108 (1992), 385–402.

68. (with G. Dula), Diagram cohomology and isovariant homotopy theory, Memoirs Amer. Math. Soc. 110 (1994), No. 527.

69. Isovariant homotopy theory and differentiable group actions, Proceedings of KAIST Mathematics Workshops 7 (1992), 81–148.

70. (with S. Kwasik) Unitary nilpotent groups and the stability of pseudo-isotopies, Duke Math. J. 71 (1993), 871–887.

71. (with S. Kwasik) Finite restrictions of pseudofree circle actions on 4-manifolds, Quart. J. Math. Oxford (2) 45 (1994), 227–241.

72. (with M. Masuda) Generalized Rochlin invariants of fixed point sets, Osaka J. Math. 31 (1994), 387–402.

73. (with S. Kwasik), One fixed point actions and homology 3-spheres, Amer. J. Math. 117 (1995), 807–827.

74. (with S. Kwasik) K_2 invariants of 3-dimensional pseudo-isotopies, Duke Math. J. 78 (1995), 359–371.

75. (with S. Kwasik) Visible surgery, 4-dimensional s-cobordisms, and related questions in geometric topology, K-Theory 9 (1995), 323–352.

76. (with S. Kwasik) Inductive detection of homotopy equivalences of manifolds, K-Theory 11 (1997), 287–306.

77. (with S. Kwasik) Pseudo-isotopies of 3-manifolds, Topology 35 (1996), 363–376.

78. (with S. Kwasik) Fake spherical spaceforms with constant positive scalar curvature, Comment. Math. Helv. 71 (1996), 1–40.

79. (with S. Kwasik) Fundamental groups of 4-manifolds with circle actions, Math. Proc. Camb. Philos. Soc. 119 (1996), 645–655.

80. Positive scalar curvature and odd order abelian fundamental groups, Proc. Amer. Math. Soc. 125 (1997), 907–915.

81. (with S. Kwasik) Isolated fixed points of circle actions on 4-manifolds, Forum Math. 9 (1997), 517–546.

82. (with M. Masuda) Invariants of Atiyah-Singer type, classifications up to finite ambiguity, and equivariant inertia groups, Indiana Univ. Math. J. 45 (1996), 545–581.

83. Isovariant mappings of degree 1 and the Gap Hypothesis, Algebraic and Geometric Topology, 6 (2006), 739–762 (electronic).

84. (with J. C. Becker) Axioms for bundle transfers and traces, Math. Zeitschrift 227 (1998), 583–605.

85. (with S. Kwasik) On h-cobordisms of spherical spaceforms, Proc. Amer. Math. Soc. 127 (1999), 1525–1532.

86. (with M. Masuda) On the nonuniqueness of equivariant connected sums, J. Math. Soc. Japan 51 (1999), 413–435.

87. (with R. J. D. Ferdinands) Algebraic fiberings of Grassmann varieties, Ill. J. Math. 41 (1997), 31–53.

88. (with S. Kwasik), All $\mathbb{Z}_q$ lens spaces have diffeomorphic squares, Topology 41 (2002), 321–340.

89. (with R. Haynes, S. Kwasik and J. Mast) Periodic maps of $\mathbb{R}^7$ without fixed points, Math. Proc. Camb. Philos. Soc. 132 (2002), 131–136.

90. (with S. Kwasik) Multiplicative stabilization and transformation groups, Current Trends in Transformation Groups, K-Monographs in Mathematics Vol. 7, pp. 147–165. Kluwer Academic Publishers, Dordrecht, 2002.

91. (with S. Kwasik), Cartesian powers of 3-manifolds, Topology Appl. 154 (2007), 176–191.

92. (with S. Kwasik) Toral and exponential stabilization for homotopy spherical spaceforms, Math. Proc. Camb. Philos. Soc. 137 (2004), 571–593.

93. Equivariant normal invariants and isovariant homotopy equivalences, in preparation.

94. (with S. Kwasik) Tangential thickness of homotopy lens spaces (abstract in the 2004 Abstracts of the Amer. Math. Soc.).

BOOKS EDITED:

1. Proceedings of the A. M. S. Summer Research Conference on Group Actions (Boulder, Colorado, 1983), Contemp. Math. Vol. 36, American Mathematical Society, Providence, 1985.