Curriculum Vitae

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Ph.D. Indiana University 1980

University of California, San Diego

1991-Present Professor of Mathematics

1986-1991 Associate Professor of Mathematics

1983-1986 Assistant Professor of Mathematics

California Institute of Technology Department of Mathematics

1983-1984 Bantrell Fellow

1982-1983 Postdoctoral Fellow National Science Foundation

University of Virginia Department of Mathematics

1980-1982 Whyburn Research Instructorship

Indiana University Department of Mathematics

1976-1980 Associate Instructorship

Published Works

1. J. Agler: “Geometric and topological properties of the numerical range,” Indiana University Math. J., 31 (1982).

2. J. Agler: “An invariant subspace theorem,” B.A.M.S. (new series), 1 (1979), 425-427.

3. J. Agler: “An invariant subspace theorem,” J. Func. Analysis, 38 (1980), 315-323.

4. J. Agler: “SubJordan operators: Bishop's theorem, spectral inclusion, and spectral sets,” J. Operator Theory, 3 (1982), 373-395.

5. J. Agler: “The Arveson extension theorem and coanalytic models,” Integral Equations & Operator Theory, 5 (1982), 608-631.

6. J. Agler: “Hypercontractions and subnormality,” J. Operator Theory (1985), 203-217.

7. J. Agler: “Rational dilation on an annulus,” Ann. of Math. 121 (1985), 537-563.

8. J. Agler and R. Froese: “Existence of Stark resonances,” Comm. Math. Phys. 100 (1985), 161-171.

9. J. Agler: “An Abstract Approach to Model Theory,” Surveys of some recent results in Operator Theory, (eds. J. B. Conway and B. B. Morrel), Pitman Notes in Mathematics 192, Longman, Essex, 1988.

10. J. Agler, J. W. Helton, S. McCullough and L. Rodman: “Positive Definite Matrices with a given Sparsity Pattern,” Lin. Alg. and its Appl. 107 (1988), 101-149.

11. J. Agler: “A disconjugacy theorem for Toeplitz operators,” Am. J. Math, 112 (1990), 1-14.

12. J. Agler: “Nevanlinna-Pick Interpolation on Sobolev space,” Proceedings of the Am. Math. Soc., 108 (1990), 341-351.

13. J. Agler: “Operator Theory and the Caratheodory Metric,” Invent. Math, 101 (1990), 483-500.

14. J. Agler: “On the representation of certain holomorphic functions defined on a polydisc,” Operator Theory: Advances and Applications, 48 (1990), 47-66.

15. J. Agler, E. Franks and D.A. Herrero: “Spectral pictures of operators quasisimilar to the unilateral shift,” J. reine angw. Math. 422 (1991), 1-20.

16. J. Agler and M. Stankus: “m-Isometric Transformations of Hilbert Space I”, Jour. of Integral Equations & OperatorTheory, 21 (1995), 383-429.

17. J. Agler and M. Stankus: “m-Isometric Transformations of Hilbert Space II”, Jour. of Integral Equations & OperatorTheory, 23 (1995), 1-48.

18. J. Agler and M. Stankus: “m-Isometric Transformations of Hilbert Space III”, Jour. of Integral Equations & OperatorTheory, 24 (1996), 380-421.

19. J. Agler and N. J. Young: “Functions Which Are Almost Multipliers of Hilbert Function Spaces,” Proceedings of the London Math. Soc., 76 (1998), pp. 453-475.

20. J. Agler, J. W. Helton and M. Stankus: “Classification of Hereditary Matrices,” Linear Alg. and Appl., 274 (1998), pp. 125-160.

21. J. Agler and J. McCarthy: “Operators that dominate normal operators,” J. of Operator Theory 40 (1998), pp. 385-407.

22. J. Agler and J. McCarthy: “Nevanlinna-Pick kernels and localization,” Proc. 17 Operator Theory Conference, Timisoara, 1998.

23. J. Agler and J. McCarthy: “Nevanlinna-Pick interpolation on the Bidisk,”J. für die reine und angewandte Mathematik 506 (1999), pp. 191-204.

24. J. Agler and N. Young: “A converse to a theorem of Adamyan, Arov and Krein,” J. of the American Math. Soc. 12 (1999), pp. 305-333.

25. J. Agler and N. Young: “A commutant lifting theorem for a domain in ¢2 and spectral interpolation,” J. of Func. Anal. 161 (1999), pp. 452-477.

26. J. Agler and N. Young: "The Two-Point Spectral Nevanlinna-Pick Problem," Integral Equations and Operator Theory 37 (2000), pp. 375-385.

27. J. Agler and J. E. McCarthy: "Complete Nevanlinna-Pick Kernels," Journal of Functional Analysis Vol. 175 (2000), pp. 111-124.

28. J. Agler and J. E. McCarthy: "The three point Pick problem on the Bidisk," New York Journal of Mathematics Vol. 6 (2000), pp 227-236.

29. J. Agler and N. J. Young, "Operators having the symmetrized bidisc as a spectral set", Proc. Edin. Math. Soc. Vol 43 (2000) 195-210.

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32. J. Agler and J.E. McCarthy: Pick Interpolation and Hilbert Function Spaces, American Mathematical Society, RI, 2002, 308pp.

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34. J. Agler and J. E. McCarthy: "Norm Preserving Extensions of Holomorphic Functions from Subvarieties of the Bidisk", Annals of Mathematics. (2), 157(1):289–312, 2003.

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37. J. Agler and N. J. Young, "The hyperbolic geometry of the symmetrized bidisc," J. Geom., Anal., 14(3):375–403, 2004.

38. J. Agler and J. E. McCarthy: "Parametrizing Distinguished varieties," Proceedings of the Conference on Recent Advances in Operator-Related Function Theory, (2006), ed. A. Matheson, M. Stessin and R. Timoney, 29-34.

39. J. Agler and J. E. McCarthy: Distinguished varieties, Acta Mathematica, Vol. 194 (2005) 133-153.

40. J. Agler and N. J. Young, "The complex geodesics of the symmetrized bidisc" Int. Jour. of Math. 17 (2006), no. 4, 375-391.

41. Agler, Jim; McCarthy, John E.; Stankus, Mark; Toral algebraic sets and function theory on polydisks. J. Geom. Anal. 16 (2006), no. 4, 551--562.

42. Agler, Jim; McCarthy, John E.; Hyperbolic algebraic and analytic curves. Indiana Univ. Math. J. 56 (2007), no. 6, 2899--2933.

43. Agler, Jim; Harland, John; Raphael, Benjamin J.; Classical function theory, operator dilation theory, and machine computation on multiply-connected domains. Mem. Amer. Math. Soc. 191 (2008), no. 892, 153 pages.

44. Geometry near the torus of zero-sets of holomorphic functions (with John McCarthy and Mark Stankus) New York Journal of Mathematics 14 [2008] 517-538.

45. Cusp Algebras (with John McCarthy) Publicacions Matematiques 53 [2008] 111-118.

46. The magic functions and automorphisms of a domain (with Nicholas Young) Complex Analysis and Operator Theory 2 (2008) 383-404.

47. Boundary Nevanlinna-Pick interpolation via reduction and augmentation (with Nicholas Young) Mathematische Zeitschrift ,2011,Volume 268, Numbers 3-4, 791-817.

48. What can Hilbert spaces tell us about bounded functions on the bidisk? (with John McCarthy) in Operator Theory Advances and Applications Vol. 207, Paul R. Halmos Memorial Volume Birkhauser, 2010.

49. Facial behaviour of analytic functions on the bidisk (with John McCarthy and Nicholas Young) Bull. London Math. Soc. (2011) 43 (3): 478-494.

50. The boundary Carath´eodory-Fej´er problem (with Z. A. Lykova and N.J. Young). Journal of Mathematical Analysis and Applications, Volume 382, Issue 2, 15 October 2011, Pages 645-662.

51. Algebraic pairs of isometries (with G. Knese, and J.E. McCarthy). Jour. of Oper.Th., 67(1):215–236, 2012.

52. A Carath´eodory theorem for the bidisk via Hilbert space methods (with J.E. McCarthy and N.J. Young). Mathematische Annalen, March 2012, Volume 352, Issue 3, pp 581-624.

53. Pseudo-Taylor expansions and the Carath´eodory-Fej´er problem (with Z. A. Lykova, and N.J. Young). Journal of Mathematical Analysis and Applications, Volume 386, Issue 1, 1 February 2012, Pages 308-318.

54. Boundary behavior of analytic functions of two variables via generalized models (with R. Tully-Doyle and N.J. Young). Indagationes Mathematicae, 23:995–1027, 2012.

55. Operator monotone functions and Loewner functions of several variables (with J.E. McCarthy and N.J. Young). Annals of Math., 176(3):1783–1826, 2012.

56. The The Carath´eodory-Julia Theorem and the Network Realization Formula in Two Variables. In Operator Theory: Advances and Applications, Festschrift in Honor of J. William Helton, Vol. 222, pages 33–41. Birkh¨auser, Basel, 2012.

57. The Takagi problem on the disk and bidisk (with J. Ball and J.E. McCarthy). Acta Sci. Math. Szeged 79:1-2 [2013] 63-78. arXiv:1208.2704.

58. A case of mu-synthesis as a quadratic semidefinite program (with Z. A. Lykova and N.J. Young) Siam. J. Control Optim., 51:2472–2508, 2013.

59. Extremal holomorphic maps and the symmetrized Bidisc (with Z. A. Lykova, and N.J. Young). Proc. London Math. Soc., 106:781–818, 2013.

60. On the representation of holomorphic functions defined on polyhedra (with J.E. McCarthy and N.J. Young). Mich. Math. Jour., Michigan Mathematics Journal 62:4 [2013] 675-689, arXiv:1111.0661v2.

61. Hankel vector moment sequences and the non-tangential regularity at infinity of two variable Pick functions (with John McCarthy). Trans. Am. Math. Soc. 366:3 [2014] 1379-1411. arXiv:1111.2075.

62. Symmetric functions in two noncommuting variables (with N. J. Young). Journal of Functional Analysis, Volume 266, Issue 9, 1 May 2014, Pages 5709–5732. arXiv:1307.1588.

63. Operator theory and the Oka extension theorem (with J. E. McCarthy). Hiroshima Mathematical Journal Volume 45, Number 1 (March 2015), 9-34. ArXiv:1212.5282.

64. Global holomorphic functions in several non-commuting Variables (with J.E. McCarthy). Canad. J. Math. 67(2015), 241-285. ArXiv:1305.1636v2.

65. 3-extremal holomorphic maps and the symmetrized Bidisc (with Z. A. Lykova and N.J. Young), J Geom Anal (2015) 25:2060–2102, arXiv:1307.7081.

66. The complex geometry of a domain related to μ-synthesis (with Z.A. Lykova and N.J. Young), J. Math.Anal.Appl.422(2015)508–543

67. Pick Interpolation for free holomorphic functions (with J.E. McCarthy), American Journal of Mathematics (to appear), arXiv:1308.3730.

Submitted Works

68. Nevanlinna representations in several variables (with R. Tully-Doyle and N.J. Young). (submitted), 2012. arXiv:1203.2261v2.

69. Algebraic and geometric aspects of rational Γ-inner functions, (with Z. A. Lykova and N.J. Young), (submitted), arXiv:1502.04216

70. Finite Blaschke Products And The Construction Of Rational Γ-Inner Functions, (with Z. A. Lykova and N.J. Young), (submitted), arXiv:1505.02415

71. The implicit function theorem and free algebraic sets (with J. E. McCarthy), (submitted), arXiv:1404.6032.

72. Non-commutative Functional Calculus and Spectral Theory (with J.E. McCarthy), (submitted), arXiv:1504.07323.