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Positions held

2005– Director, Center for Applied Mathematics
 Univ. of Notre Dame
1994– Vincent J. Duncan and Annamarie Micus Duncan Professor
 of Mathematics
1988–1992 Chair, Department of Mathematics, Univ. of Notre Dame
1987–1991 Codirector, Center for Applied Mathematics
 Univ. of Notre Dame
1983– Full Professor, Univ. of Notre Dame
1979–1983 Associate Professor (with Tenure), Univ. of Notre Dame
1975–1979 Assistant Professor, Cornell University, Ithaca, New York
1973–1975 Gibbs Instructor, Yale University, New Haven

Education

1969–1972 Princeton University, Princeton, New Jersey
 Ph.D. Mathematics, June 1973
 (supported by NSF Graduate Fellowship)
1972–1973 Harvard University, Cambridge, Massachusetts
 Research Assistant
1966–1969 Fordham University, Bronx, New York
 B.A. Mathematics, June 1969, (attended on a full scholarship)
Summer 1968 Indiana University, Bloomington, Indiana
 NSF Summer Undergraduate Research Grant

Consulting General Motors Research Laboratories, Warren, Michigan
1986–1997 Consulting on the solution of polynomial systems of equations.

Editorships 1986–1993: Manuscripta Mathematica
2000– : Advances in Geometry
2001– : Milan Journal of Mathematics

Recent Research Support:

2009-2010 NSF DMS 0902504 \$20,000 (PI Joseph Powers, Aerospace
 and Mechanical Engineering, University of Notre Dame)
 Workshop for Model Reduction in Reactive Flows; Spring 2009; Notre Dame, IN
2007-2010 NSF DMS-0712910 \$360,000 (PI Andrew Sommese)
 Numerical Algebraic Geometry: Computation of Exceptional Parameter Values.
2007-2010 NSF CBET 0650843 \$299,998 (PI Joseph Powers)
 Slow Invariant Manifolds for Spatially Homogeneous and Inhomogeneous
 Combustion Systems with Detailed Kinetics
2004-2009 NSF DMS 0410047 \$302,729 (PI Andrew Sommese)
 Collaborative Research : Numerical Algorithms and Software for
 Solving Polynomial Systems with Parameters.
2005-2006 NSF DMS 0509873 \$16,650 (PI Simon Tavener, Colorado State University)

Workshop on Geometry and Symmetry in Numerical Computation

2001-2005 NSF DMS 0105653 \$179,965 (PI Andrew Sommese)
Collaborative Research : Numerical Algorithms and Software for
Decomposing Solution Sets of Polynomial Systems

National and International Honors

Serving on NSF Review Panels
1979 Alfred P. Sloan Research Fellowship
1993 Alexander von Humboldt Research Award for Senior U.S. Scientists

Other Honors 1997: University of Notre Dame Presidential Award

Research Stays at Mathematics Institutes

June 2008 KTH, Stockholm, Sweden
June 2007 University of Milan, Italy
May/June 2007 Eidgenössische Technische Hochschule Zürich (ETH), Switzerland
Mar/Apr 2007 Colorado State University, Fort Collins
Fall 2006 Institute for Mathematics and Its Applications (IMA), Minnesota
July 2004 RiP Program
Mathematisches Forschungsinstitut Oberwolfach, Germany
June/July 2001 RiP Program
Mathematisches Forschungsinstitut Oberwolfach, Germany
June 2001 University of Bayreuth, Germany
May 2001 University of Milan, Italy
May 2001 University of Genova, Italy
Spring 2000 Mathematical Sciences Research Institute, Berkeley
Fall 1999 Colorado State University, Fort Collins
June 1999 KTH (Royal Institute of Technology), Stockholm, Sweden
June 1998 Max Planck Institut für Mathematik, Bonn, Germany
May 1998 University of Bayreuth, Germany
August 1997 RiP Program
Mathematisches Forschungsinstitut Oberwolfach, Germany
July 1997 University of Bayreuth, Germany
June 1996 RiP Program
Mathematisches Forschungsinstitut Oberwolfach, Germany
May 96 University of Bayreuth, Germany
June/July 1995 Sonderforschungsbereich 170
Mathematics Institute, University of Göttingen, Germany
June/July 1994 University of Bayreuth, Germany
1992–1993 Max Planck Institut für Mathematik, Bonn, Germany
September 1992 University of Bayreuth, Germany
July 1992 Sonderforschungsbereich 170
Mathematics Institute, University of Göttingen, Germany
October, 1991 University of Bayreuth, Germany
July 1991 Max Planck Institut für Mathematik, Bonn, Germany
August 1988 General Motors Research Laboratory, Warren, Michigan 48090
Visiting Consultant
June/July 1988 University of Bayreuth, Germany; Guest Professor

Fall 1987	Max Planck Institut für Mathematik, Bonn, Germany
June 1986	University of Genova, Italy
1984–1985	Max Planck Institut für Mathematik, Bonn, Germany
June 1983	Max Planck Institut für Mathematik, Bonn, Germany
1978–1979	Sonderforschungsbereich Theoretische Mathematik University of Bonn, Germany; Guest Professor
Sept 1978	University of Trento, Italy
July 1977	University of Göttingen, Germany; Guest Professor
1975–1976	Institute for Advanced Study, Princeton, New Jersey

Major University Committees since 1992

2008–	Hesburgh Library Renovation Committee
2006–2008	Ad hoc University Committee on Statistics
2004–	University Committee on Libraries Chair for 2007–2008.
2002–2005	Member, College Council of the College of Science
2000–	Member, Executive Committee of the Center for Applied Mathematics
2000–2003	Member, University Committee on Intellectual Property
2000–2001	Member of the Graduate Council
1995–1998	Member of the Provost’s Advisory Committee
1996	PAC Subcommittee on Tenure and Promotion
1995–1997	Member, Executive Committee of the Academic Council
1995–1997	Chair, Graduate Affairs Committee of the Academic Council
1995	Member, Search Committee for Director of the <i>Kaneb Teaching and Learning Center</i>
1995	Member, Search Committee for Provost
1994–1997	Member of the Academic Council
1994–1995	Member, Search Committee for Assistant Provost for International Studies
1994	Chair of Committee evaluating Internal Review Procedures
1994	Member of the Faculty Senate (ex officio representative from Acad. Council)
1993–1995	Graduate Council
1992	Member of the Review Committee of EE department

Ph.D. Theses and Fellowship Research completed under A.J. Sommese

- T1 Norman Goldstein, On general manifold sections of submanifolds of homogeneous complex manifolds, Cornell University, August 1979. About 1/2 of this thesis appeared in:
A second Lefschetz theorem for general manifold sections of complex projective space, *Math. Ann.* 246 (1979), 41–68.
- T2 Daniel Gross, On compact categorical quotients by torus actions, University of Notre Dame, June 1982. Results of this thesis appeared in:
Compact quotients by C^* actions, *Pacific J. Math.* 114 (1984), 149–164.
- T3 Harry D Souza, Classification of threefolds whose hyperplane sections are elliptic surfaces, University of Notre Dame, June 1983. Results of this thesis appeared in:
Threefolds whose hyperplane sections are elliptic surfaces, *Pac. J. Math.* 134 (1988), 57–78.

- T4 Elvira L. Livorni, Classification of algebraic surfaces with sectional genus less than or equal to six, University of Notre Dame, August 1983. Results of this thesis appeared in:
 Classification of algebraic surfaces with sectional genus less than or equal to six, I : Rational surfaces, Pacific J. of Math. 113 (1984), 93–114; II: Ruled surfaces with $\dim \phi_{K_S \otimes L}(S) = 1$, Canad. Math. J. 38 (1986); III : Ruled surfaces with $\dim \phi_{K_S \otimes L}(S) = 2$, Math. Scand. 59 (1986), 9–29.
 Classification of algebraic non-ruled surfaces with sectional genus less than or equal to six, Nagoya Math. J. 100 (1985), 1–9.
- T5 Maria L. Fania, Extensions of modifications of ample divisors on fourfolds, University of Notre Dame Thesis, May 1984. Results of this thesis appeared in:
 Extensions of modifications of ample divisors on fourfolds, J. Math. Soc. Japan 36 (1984), 107–120; II, J. Math. Soc. Japan 38 (1986), 285–294.
- T6 Marco Andreatta, spent the 1985/86 academic year on an Italian Government Graduate Fellowship studying hyperplane section theory at the University of Notre Dame. Though he did not write a Ph.D. Thesis at Notre Dame, results of his work during the year on the problem Sommese gave him are published in:
 The stable adjunction mapping, Math. Ann. 275 (1986), 305–315.
- T7 Jaroslaw A. Wiśniewski, Length of extremal rays and applications, University of Notre Dame, August 1987. Results of this thesis appeared in:
 Length of Extremal rays and generalized adjunction, Math. Z. 200 (1989), 409–427.
- T8 Gian Mario Besana, The geometry of conic bundles arising in adjunction theory, University of Notre Dame, May 1992. Results of this thesis appear in:
 On the geometry of conic bundles arising in adjunction theory, Math. Nachr. 160 (1993), 223–251.
- T9 Shu Nakamura, The classification of the third reductions with a spectral value condition, University of Notre Dame, August 1995. Results of this thesis appeared in:
 On the third adjoint contractions, J. Reine Angew. Math. 467 (1995), 51–65.
 On the classification of the third reductions with a spectral value condition, J. Math. Soc. Japan 49 (1997), 633–646.
- T10 Mark Andrea De Cataldo, Codimension two subvarieties of quadrics, University of Notre Dame, August 1995. Results of this thesis appear in:
 The genus of curves on the three dimensional quadric, Nagoya Math. J. 147 (1997), 193–211.
 Some adjunction-theoretic properties of codimension two nonsingular subvarieties of quadrics, Canad. J. Math. 49 (1997), 675–695.
 A finiteness theorem for low-codimensional nonsingular subvarieties of quadrics, Trans. Amer. Math. Soc. 349 (1997), 2359–2370.
 Codimension two nonsingular subvarieties of quadrics: scrolls and classification in degree $d \leq 10$, J. Math. Soc. Japan 50 (1998), 879–902
- T11 Sandra Di Rocco, On higher order embeddings of surfaces, University of Notre Dame, May 1996. Results of this thesis appear in:
 Projective surfaces with k -very ample line bundles of genus $\leq 3k + 1$, Manuscr. Math. 91 (1996), 35–59.
 k -very ample line bundles on Del Pezzo surfaces, Math. Nachr. 179 (1996), 47–56.
- T12 Meeyoung Kim, Barth-Lefschetz type theorem for branched coverings of homogeneous spaces, University of Notre Dame, August 1996. Results of this thesis appear in:
 Barth-Lefschetz type theorem for branched coverings of Grassmannians, J. Reine Angew. Math. 470 (1996), 109–122.
 On branched coverings of Quadrics, Arch. Math. 67 (1996), 76–79.

- T13 Daniel J. Bates, Theory and applications in numerical algebraic geometry, University of Notre Dame, May 2006. Results of this thesis appear in:
 (with E.L. Allgower, A.J. Sommese, and C.W. Wampler), Solution of Polynomial systems derived from differential equations, *Computing*, 76 (2006), 1–10.
 (with C. Peterson and A.J. Sommese), A numerical-symbolic algorithm for computing the multiplicity of a component of an algebraic set, *Journal of Complexity* 22 (2006), 475–489.
 (with J.D. Hauenstein, A.J. Sommese, and C.W. Wampler), Adaptive multiprecision path tracking, *SIAM Journal on Numerical Analysis* 46 (2008) 722–746.
- T14 Ye Lu, Finding all real solutions of polynomial systems, University of Notre Dame, August 2006. Results of this thesis appear in:
 (with D.J. Bates, A.J. Sommese, and C.W. Wampler), Finding all real points of a complex curve, *Contemporary Mathematics* 448 (2007), 183–205.
- T15 Jonathan D. Hauenstein, Regeneration, local dimension, and applications in numerical algebraic geometry, University of Notre Dame, May 2009. Results of this thesis appear in:
 (with A.J. Sommese and C.W. Wampler), Regeneration Homotopies for Solving Systems of Polynomials.
 (with D.J. Bates, C. Peterson, and A.J. Sommese), A numerical local dimension test for points on the solution set of a system of polynomial equations, to appear *SIAM Journal on Numerical Analysis*.

Current Ph.D. Students: Wenrui Hao, Timothy McCoy.

Publications

Books and Monographs

- [1] B. Shiffman and A.J. Sommese, *Vanishing theorems on complex manifolds*, Progress in Mathematics, 56 (1985), 170+xiii pages, Birkhäuser, Boston.
- [2] M. Beltrametti and A.J. Sommese, *The adjunction theory of complex projective varieties*, Expositions in Mathematics, 16 (1995), 398+xxi pages, Walter De Gruyter, Berlin.
- [3] M. Beltrametti, M. Schneider, and A.J. Sommese, *Special properties of the adjunction theory for 3-folds in \mathbb{P}^5* , Memoirs of the American Mathematical Society, Number 554 (1995), 63+viii pages, American Mathematical Society, Providence, Rhode Island.
- [4] A.J. Sommese and C.W. Wampler, *Numerical solution of systems of polynomials arising in engineering and science*, (2005), 401+xxii pages, World Scientific Press, Singapore.

Edited Volumes

- [5] A.J. Sommese, A. Biancofiore, and E.L. Livorni (editors), *Algebraic geometry : Proceedings of the international conference held in L'Aquila, Italy, May 30-June 4, 1988*, Lect. Notes in Math. 1417 (1990), 319 pages, Springer Verlag, Berlin & New York.
- [6] C. Ciliberto, E.L. Livorni, and A.J. Sommese (editors), *Classification of algebraic varieties, L'Aquila, Italy, 1992*, Contemporary Math. 162 (1994), 410+xx pages, American Mathematical Society, Providence, R.I.
- [7] A. Dickenstein, F.-O. Schreyer, and A.J. Sommese, (editors), *Algorithms in Algebraic Geometry*, volume 146 of *IMA Volumes in Mathematics and Its Applications*, 2007, Springer Verlag.

Software

- [8] D.J. Bates, J.D. Hauenstein, A.J. Sommese, and C.W. Wampler. Bertini: Software for Numerical Algebraic Geometry. Available at www.nd.edu/~sommese/bertini.

Articles

1973

- [9] A.J. Sommese, Algebraic properties of the period mapping, Ph. D. Thesis, Princeton University, June 1973.
- [10] A.J. Sommese, Some algebraic properties of the image of the period mapping, Rice University Study (2) 59 (1973), 123–128.
- [11] A.J. Sommese, Borel's fixed point theorem for Kaehler manifolds and an application, Proc. Amer. Math. Soc. 41 (1973), 51–54.

1974

- [12] A.J. Sommese, Reversing the Ahlfors estimate, Proc. A. M. S. 45 (1974), 242–244.
- [13] A.J. Sommese, Holomorphic vector-fields on compact Kaehler manifolds, Math. Ann. 210 (1974), 75–82.

1975

- [14] A.J. Sommese, Criteria for quasi-projectivity, Math. Ann. 217 (1975), 107–116.
- [15] A.J. Sommese, Extension theorems for reductive group actions on compact Kaehler manifolds, Math. Ann. 218 (1975), 107–116; research notice with same title, Bull. A.M.S. 81 (1975), 729–732.
- [16] A.J. Sommese, Quaternionic manifolds, Math. Ann. 212 (1975), 191–214.
- [17] A.J. Sommese, A representable functor theorem for compact complex spaces, Proc. Amer. Math. Soc. 52 (1975), 11–17.

1976

- [18] A.J. Sommese, Addendum to Criteria for quasi-projectivity, Math. Ann. 221 (1976), 95–96.
- [19] A.J. Sommese, On manifolds that cannot be ample divisors, Math. Ann. 221 (1976), 55–72.

1977

- [20] A.J. Sommese, On ample divisors, Proc. Symp. Pure Math. 30 (1977), 289–292.
- [21] A.J. Sommese, Theorems of Barth-Lefschetz type for homogeneous complex manifolds, Proc. Nat. Acad. Sci. 74 (1977), 1332–1333.
- [22] A.J. Sommese, Real algebraic spaces, Ann. Scuola Norm. Sup. Pisa Cl. Sci. Ser. (4) 4 (1977), 599–612.
- [23] A.J. Sommese, On the holomorphic jet bundles, Proc. Symp. Pure Math. 30 (1977), 49–52.

1978

- [24] A.J. Sommese, On the rationality of the period mapping, *Ann. Scuola Norm. Sup. Pisa Cl. Sci. Ser. (4)* 4 (1978), 683–717.
- [25] A.J. Sommese, Compact complex manifolds possessing a line bundle with a trivial jet bundle, *Abh. Math. Sem. University Hamburg*, 47 (1978), 79–91.
- [26] A.J. Sommese, Submanifolds of Abelian varieties, *Math. Ann.* 233 (1978), 229–256.
- [27] A.J. Sommese, Concavity theorems, *Math. Ann.* 235 (1978), 37–53.
- [28] J. Carrell and A.J. Sommese, C^* actions, *Math. Scand.* 43 (1978), 49–59. [correction to *Math. Scand.* 53 (1983), 32].

1979

- [29] A.J. Sommese, Hyperplane sections of projective surfaces, I: The adjunction mapping, *Duke Math. J.* 46 (1979), 377–401.
- [30] A.J. Sommese, Non-smoothable varieties, *Comment. Math. Helv.* 54 (1979), 140–146.
- [31] A.J. Sommese, Complex subspaces of homogeneous complex manifolds I: Transplanting theorems, *Duke Math. J.* 46 (1979), 527–548.
- [32] J. Carrell and A.J. Sommese, Some topological aspects of C^* actions on compact Kaehler manifolds, *Comment. Math. Helv.* 54 (1979), 567–582.

1981

- [33] A.J. Sommese, Hyperplane sections, *Springer Lect. Notes in Math.* 862 (1981), 232–271.
- [34] A. Howard and A.J. Sommese, On the orders of the automorphism groups of certain projective manifolds, in honor of Yozo Matsushima, ed. by Hano, A. Morimoto, S. Murakami, K. Ozeki, *Progress in Mathematics*, Birkhäuser, 14 (1981), 145–158.
- [35] A.J. Sommese, On the minimality of hyperplane sections of projective threefolds, *J. Reine Angew. Math.* 329 (1981), 16–41.

1982

- [36] A.J. Sommese, Complex subspaces of homogeneous complex manifolds II - Homotopy results, *Nagoya Math. J.* 86 (1982), 101–129.
- [37] A.J. Sommese, Ample divisors on 3-folds, *Algebraic 3-folds (Proceedings Varenna 1981)*, Springer Lect. Notes in Math. 947 (1982), 229–240.

1983

- [38] J. Carrell and A.J. Sommese, $SL(2, C)$ actions on compact Kaehler manifolds, *Trans. Amer. Math. Soc.* 276 (1983), 165–179.
- [39] J. Carrell and A.J. Sommese, A generalization of a theorem of Horrocks, *Proceedings Vancouver 1981*, Springer Lect. Notes in Math. 956 (1983), 23–28.
- [40] J. Carrell and A.J. Sommese, Almost homogeneous C^* actions on compact complex surfaces, *Proceedings Vancouver 1981*, Springer Lect. Notes in Math. 956 (1983), 29–33.

- [41] A.J. Sommese, Some examples of C^* actions, Proceedings Vancouver 1981, Springer Lect. Notes in Math. 956 (1983), 118–124.
- [42] A.J. Sommese, A convexity theorem, Proceedings of Symposia in Pure Math. 40 (1983), Part 2, 497–505.
- [43] E. Akyldiz, J. Carrell, D. I. Lieberman and A.J. Sommese, On the graded rings associated to holomorphic vector fields with exactly one zero, Proceedings of Symposia in Pure Math. 40 (1983), Part 1, 55–56.
- [44] A. Bialynicki-Birula and A.J. Sommese, Quotients by C^* and $SL(2, C)$ actions, Trans. Amer. Math. Soc. 279 (1983), 519–543.
- [45] A.J. Sommese, Configurations of -2 rational curves on hyperplane sections of projective threefolds, Classification of algebraic and analytic manifolds, edited by K. Ueno, Progress in Mathematics, Birkhäuser, 39 (1983), 465–497.
- [46] J. Carrell and A.J. Sommese, Filtrations of meromorphic C^* actions on complex manifolds, Math. Scand. 53 (1983), 25–31.
- [47] A. Howard and A.J. Sommese, On the theorem of de Franchis, Ann. Scuola Norm. Sup. Pisa Cl. Sci. Ser. (4) 10 (1983), 429–436.
- 1984
- [48] A.J. Sommese, On the density of ratios of Chern numbers of algebraic surfaces, Math. Ann. 268 (1984), 207–221.
- [49] B. Smyth and A.J. Sommese, The degree of the Gauss mapping of submanifolds of Abelian varieties, Comment. Math. Helv. 59 (1984), 341–346.
- 1985
- [50] B. Shiffman and A.J. Sommese, Vanishing theorems for weakly positive vector bundles, Pitman Research Notes 112 (1985), 61–68.
- [51] A. Bialynicki-Birula and A.J. Sommese, Quotients by $C^* \times C^*$ actions, Trans. Amer. Math. Soc. 289 (1985), 519–543.
- [52] J. Lipman and A.J. Sommese, On blowing down projective spaces in singular varieties, J. Reine Angew. Math. 362 (1985), 52–62.
- [53] A.J. Sommese, Ample divisors on normal Gorenstein surfaces, Abh. Math. Sem. University Hamburg 55 (1985), 151–170.
- 1986
- [54] A.J. Sommese and A. Van de Ven, Homotopy groups of pullbacks of varieties, Nagoya Math. J. 102 (1986), 79–90.
- [55] A.J. Sommese, On the adjunction theoretic structure of projective varieties, in *Proceedings of the Complex analysis and algebraic geometry conference*, ed. by H. Grauert, Göttingen, 1985, Springer Lect. Notes in Math. 1194 (1986), 175–213.

- [56] M. L. Fania and A.J. Sommese, On the minimality of hyperplane sections of Gorenstein threefolds, Contributions to several complex variables, ed. by A. Howard and P.M. Wong, Aspects of Math. E9 (1986), 89–114, Vieweg.
- [57] E. L. Livorni and A.J. Sommese, Threefolds of nonnegative Kodaira dimension with sectional genus less than or equal to 15, Ann. Scuola Norm. Sup. Pisa Cl. Sci. Ser. (4) 13 (1986), 537–558.
- [58] A.J. Sommese, Ample divisors on Gorenstein varieties, Revue de l’Institut E. Cartan, Nancy, 10 (1986) Journal Complexe 1985.
- [59] A. Bialynicki-Birula and A.J. Sommese, A conjecture about compact quotients by tori, Complex Analytic Singularities, ed. by T. Suwa and P. Wagreich, Advanced Stud. in Pure Math. 8 (1986), 59–68, Kinokuniya.

1987

- [60] A. Morgan and A.J. Sommese, A homotopy for solving general polynomial systems that respects m -homogeneous structures, Appl. Math. Comput. 24 (1987), 101–113.
- [61] A. Morgan and A.J. Sommese, Computing all solutions to polynomial systems using homotopy continuation, Appl. Math. Comput. 24 (1987), 115–138; Erratum, 51 (1992), p. 209.
- [62] M. Beltrametti and A.J. Sommese, A criterion for a variety to be a cone, Comment. Math. Helv. 62 (1987), 417–422.
- [63] A.J. Sommese and A. Van de Ven, On the adjunction mapping, Math. Ann. 278 (1987), 593–603.
- [64] M. L. Fania, E. Sato, and A.J. Sommese, On the structure of fourfolds with a hyperplane section which is a P^1 bundles over a surface that fibres over a curve, Nagoya Math. J. 108 (1987), 1–14.

1988

- [65] M. Beltrametti and A.J. Sommese, On generically polarized Gorenstein surfaces of sectional genus 2, J. Reine Angew. Math. 386 (1988), 172–186.
- [66] M. Beltrametti and A.J. Sommese, On normal Gorenstein polarized varieties of sectional genus 3 and 4, Indiana University Math. J. 37 (1988), 667–686.
- [67] M. L. Fania and A.J. Sommese, Varieties whose hyperplane sections are P_C^k bundles, Ann. Scuola Norm. Sup. Pisa Cl. Sci. Ser. (4) 15 (1988), 193–218.
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1989

- [69] A. Morgan and A.J. Sommese, Coefficient-parameter polynomial continuation, Appl. Math. Comput. 29 (1989), 123–160; Erratum, 51 (1992), p. 207.
- [70] A. Morgan, A.J. Sommese, and L. Watson, Finding all solutions to polynomial systems using HOMPACk, ACM Trans. on Math. Software 15 (1989), 93–122.

- [71] A. Morgan, A.J. Sommese, and L. Watson, The mathematical reduction of a heart dipole model, *J. of Comput. Appl. Math.* 27 (1989), 407–410.
- [72] M. Andreatta and A.J. Sommese, The adjunction process for singular varieties, *Forum Math.* 1 (1989), 143–152.
- [73] M. Beltrametti, P. Francia, and A.J. Sommese, On Reider’s method and higher order embeddings, *Duke Math. J.* 58 (1989), 425–439.
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- [75] M. Beltrametti, A. Biancofiore, and A.J. Sommese, Projective n -folds of log general type. I, *Trans. Amer. Math. Soc.* 314 (1989), 825–849.
- [76] M. L. Fania and A.J. Sommese, On the projective classification of smooth n -folds with n even, *Arkiv för Matematik* 27 (1989), 245–256.
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- 1990
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- [86] M. Andreatta and A.J. Sommese, Classification of irreducible projective surfaces of smooth sectional genus ≤ 3 , *Math. Scand.* 67 (1990), 198–214.

1991

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1992

- [92] A. Morgan, A.J. Sommese, and C.W. Wampler, Computing singular solutions to polynomial systems, *Advances in Appl. Math.* 13 (1992), 305–327.
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- 2009 Workshop on Complexity of Numerical Computation
Fields Institute, Toronto, October 21
Title: Zebra Fish, Tumor Growth, and Algebraic Geometry.
Department of Mathematics
Western Michigan University, October 1
Colloquium Title: Zebra Fish, Tumor Growth, and Algebraic Geometry.
Projective Algebraic Geometry in Milano
University of Milan, Italy, June 11-12
Title: Zebra Fish, Cancer, and Algebraic Geometry.
Joint Mathematics Meeting, Washington, D.C., January 7
AMS Special Session on Computational Algebra and Convexity
Title: A Numerical Local Dimension Test for Algebraic Sets
- 2008 ApCoA 2008: Workshop on Approximate Commutative Algebra
Research Institute for Symbolic Computation (RISC)
Hagenberg-Linz, Austria, July 24–26
Title: Recent Results in Numerical Algebraic Geometry.
Department of Mathematics, KTH, Stockholm, Sweden, June 11
Colloquium Title: A Brief Introduction to Numerical Algebraic Geometry.
- 2007 Electrical and Computer Engineering Department
North Carolina State University, Raleigh, October 19
Title: Numerical Algebraic Geometry.
De Paul University, Chicago, October 5
American Mathematical Society Sectional Meeting
Numerical and Symbolic Techniques in Algebraic Geometry and Its Applications
Title: Recent Results in Numerical Algebraic Geometry.
Mathematics Department, University of California at Berkeley, October 2
Commutative Algebra and Algebraic Geometry Seminar

- Title: Recent Results in Numerical Algebraic Geometry.
 Mathematics Department, University of Western Ontario, Canada, July 24
- Title: Numerical Algebraic Geometry.
 Projective Geometry and Commutative Algebra in Applications
 Department of Mathematics, University of Genova, Italy, June 15–16
- Title: Recent Results in Numerical Algebraic Geometry
 University of Zurich, Switzerland, June 11
- Oberseminar: Algebraische Geometrie
 Title: A Survey of Numerical Algebraic Geometry
 Algebraic Geometry in Higher Dimensions, Levico Terme, Trento, Italy, June 3–9
- Title: Recent Progress in Numerical Algebraic Geometry.
 University of Zurich, Switzerland, May 23
- Arbeitsgemeinschaft in Codierungstheorie und Kryptographie
 Title: Numerical Algebraic Geometry: using numerical analysis
 to do algebraic geometry computations
 Mathematics Department, Colorado State University, Fort Collins, April 17
- Algebra Seminar: An introduction to numeric algebraic geometry
 Department of Mathematics, University of Connecticut at Storrs, March 15
- Colloquium Title: Overview of Numerical Algebraic Geometry.
 Air Force Office of Scientific Research/National Science Foundation Conference
 New Directions in Complex Data Analysis for Emerging Applications,
 Breckenridge, Colorado, March 4–7.
- Talk Title: Numerical Algebraic Geometry.
 2006 School of Mathematics, University of Minnesota, October 6
- Colloquium Title: Computing the Genus of a Curve Numerically.
 Algebraic geometry and applications seminar,
 Institute for Mathematics and Its Applications IMA,
 University of Minnesota, September 13
- Talk Title: Solving Polynomial Systems by Homotopy Continuation.
 Komplexe Analysis, Oberwolfach, Germany, August 31
- Talk Title: Exceptional Sets and Fiber Products
 Satellite Conference on Algebraic Geometry
 Segovia, Spain, August 16–19, 2006
- Plenary Lecture: Numerical Algebraic Geometry.
 Mathematics Roundtable (together with Parker Ladwig)
 of the Physics-Astronomy-Mathematics Division,
 Special Libraries Association Meeting, Baltimore, Maryland, June 13
- Topic presented and discussed: Half-life of Journal Citations.
 Approximate Commutative Algebra,
 Johann Radon Institute for Computational and Applied Mathematics,
 Linz, Austria, February 20–24, 2006
- Keynote Address: Adaptive Multiprecision and Numerical Algebraic Geometry.
 Computer Science Department, University of Utah, Salt Lake City, January 31
- Colloquium Title: Adaptive Multiprecision and
 Efficient Numerical Solution of Polynomial Systems.
 Special Session on Symbolic-Numeric Computation and Applications,
 American Mathematical Society Meeting, San Antonio, Texas, January 16
- Talk Title: Exceptional Sets and Fiber Products.
 2005 Challenges in Linear and Polynomial Algebra in Symbolic Computation

- Software, Banff International Research Station, Canada,
October 1–6, 2005
- Workshop on geometry and symmetry in numerical computation, in honor
of Eugene Allgower, Colorado State University, August 8–10, 2005
- Symposium on Dynamical System and Numerical Analysis, in honor of
Tien-Yien Li, Hsinchu, Taiwan, May 10–12, 2005
- 2004 Fall AMS Central Section Meeting, Northwestern University
Special Session on “Solving Polynomial Systems”
Komplexe Analysis, Oberwolfach, Germany
Universität des Saarlandes, Saarbrücken, Germany
Asymptotic and Effective Results in Complex Geometry,
Johns Hopkins Univ.
- 2003 University of Minnesota, Minneapolis
- 2002 Presentation of the Milan Journal of Mathematics and
Its Editorial Board, Milan, Italy
Applied Mathematics Seminar, University of Illinois at Chicago
Foundations of Computational Mathematics
Institute for Mathematics and Its Applications, Minneapolis
- 2001 Conference in Honor of Alan Huckleberry, Bochum, Germany
NATO Advance Research Workshop: Application of Algebraic Geometry
to Coding Theory, Physics, and Computation, Eilat, Israel
University of Bayreuth, Germany
University of Milan, Italy
University of Genova, Italy
The Johns Hopkins University, Baltimore, Maryland
- 2000 Komplexe Analysis, Oberwolfach, Germany
(Clay Mathematics Institute Emissary to the Conference)
AMS-IMS-SIAM Conference on Algorithms, Computational Complexity, and
Models of Computation for Nonlinear and Multivariate Problems,
Mount Holyoke College, South Hadley, Massachusetts
University of California at Riverside, California
Michigan State University, Lansing, Michigan
University of British Columbia, Vancouver, Canada
- 1999 Foundations of Computational Mathematics 99, Oxford University, England
Colorado State University, Fort Collins, Colorado
K.T.H. (Royal Institute of Technology), Stockholm, Sweden
- 1998 Conference in honor of Michael Schneider, University of Bayreuth, Germany
Hirzebruch 70 Conference, University of Warsaw, Poland
University of Bayreuth, Germany
- 1997 University of Milan, Italy (four talks)
University of Genova, Italy
University of Bayreuth, Germany
- 1996 Washington University, St. Louis, Missouri
University of Leiden, The Netherlands
University of Bayreuth, Germany (two talks)
Mathematical Sciences Research Institute, Berkeley, California
Japan–U.S.A. Conference on Algebraic Geometry
The Johns Hopkins University, Baltimore, Maryland
- 1995 Oklahoma State University, Stillwater, Oklahoma (2 talks)

- AMS-SIAM Summer Seminar on Numerical Analysis, Park City, Utah
University of Göttingen
- 1994 University of Bayreuth, Germany
Complex Geometry, Trento, Italy
- 1993 Max-Planck-Institut für Mathematik, Bonn, Germany (2 talks)
Complex Algebraic Geometry, Bayreuth, Germany
Hirzebruch 65 Conference at Bar Ilan University, Tel Aviv, Israel
University of Trento, Italy (2 talks)
University of Illinois at Chicago
- 1992 University of Bayreuth, Germany
University of Göttingen, Germany
- 1991 University of Bayreuth, Germany
Max Planck Institute for Mathematics, Bonn, Germany (2 talks)
Projective Classification of Varieties, Oberwolfach, Germany
U.S.-Japan Complex Algebraic Geometry Conference
The Johns Hopkins University, Baltimore, Maryland
- 1990 University of L'Aquila, Italy (4 talks)
Geometry of Complex Algebraic Varieties, Cetraro, Italy
Complex Algebraic Varieties, University of Bayreuth, Germany
- 1989 University of Milan, Italy (3 talks)
University of Genova, Italy
University of Missouri at Columbia, Missouri
Vector Bundles and Special Projective Embeddings, Bergen, Norway
Midwest Algebraic Geometry Conference, Ann Arbor, Michigan
- 1988 University of Bayreuth, Germany
Yale University
University of Albuquerque, New Mexico (2 talks)
Hyperplane Sections and Related Topics, L'Aquila, Italy
(Principal Speaker—4 talks)
Complex Geometry VII, Trento, Italy
- 1987 University of L'Aquila, Italy (2 talks)
University of Genova, Italy (2 talks)
University of Milan, Italy (2 talks)
University of Essen
University of Göttingen
University of Heidelberg
Max Planck Institute for Mathematik, Bonn, Germany
Complex Geometry VI, Trento, Italy
Algebraic Geometry, Columbia University, New York, N.Y.
- 1986 General Motors Research Laboratories, Warren, Michigan
University of Regina, Regina, Saskatchewan, Canada
University of Munich, Germany
University of Bayreuth, Germany
University of Genova, Italy, (six lectures)
University of Milan, Italy (2 talks)
Singularities, University of Iowa City, Iowa
Complex Geometry V, Trento, Italy
- 1985 Complex Analysis and Algebraic Geometry,
Math. Inst., Göttingen, Germany

- Complex Geometry, University of Nancy I, Nancy, France
AMS, Regional Meeting, Columbia, Missouri (Principal Speaker)
- 1984 Tokyo Metropolitan University
University of Bonn, Germany
Max Planck Institute for Mathematics, Bonn, Germany
University of Leiden, The Netherlands
University of Essen, Germany
University of Hamburg, Germany
Complex Geometry V, Trento, Italy
Joint USA/Japan Complex Singularities Conference,
Tsukuba, Ibaraki, Japan
Complex Singularities, Research Inst. for Math, Science, Kyoto, Japan
Complex Geometry III, Trento, Italy
Algebraic Geometry, Lake Wigry, Poland, (Principal Speaker–7 lectures)
Complex Analysis, Oberwolfach, Germany
- 1983 USA-France Conference on Singularities, Ecole Poly., Paris, France
Purdue University
- 1982 Algebraic Group Actions on Algebraic Varieties, Nowy Sacz, Poland
Classification of Algebraic and Analytic Manifolds
Taniguchi Foundation Conference, Katata, Japan
Algebraic Geometry, Kobe, Japan
AMS Symposium on Several Complex Variables,
University of Wisconsin, Madison
The Johns Hopkins University
University of Osaka, Japan
University of Tokyo, Japan
University of Hokkaido at Sapporo, Japan
University of Warsaw, Poland
- 1981 Threefolds Conference, Varenna, Italy
 G_m Action Conference, Univ. of British Columbia
AMS Symposium on Singularities, Humboldt Univ., Arcata, California
University of Washington, Seattle
University of Kentucky
University of British Columbia, Vancouver, B.C.
- 1980 University of Washington, Seattle
University of Michigan, Ann Arbor
Midwest Algebraic Geometry Conference, Univ. of Illinois at Chicago
Pacific Northwest Geometry Conference, Univ. of Washington, Seattle
- 1979 University of Kaiserslautern
University of Bonn
University of Notre Dame
University of Regensburg
Invariant Theory, Oberwolfach, Germany

Meetings attended by Invitation since 1979 (with no talk given)

- 2008 Interactions of Classical & Numerical Algebraic Geometry
University of Notre Dame, Indiana
- 2004 Workshop on Some New Mathematical Opportunities at DARPA

Classical Algebraic Geometry, Oberwolfach, Germany

Professional Society Affiliations Society for Industrial and Applied Mathematics, American Mathematical Society.

Other Affiliations: Member of Phi Beta Kappa.

Research Specialities Numerical Analysis of Polynomial Systems (Numerical Algebraic Geometry), Complex Algebraic Geometry.