

CURRICULUM VITAE FOR JERZY WEYMAN

Department of Mathematics
University of Connecticut
Storrs, CT, 06269-3009

EDUCATION

Ph.D., Mathematics, Brandeis University, 1980. Advisor D. Buchsbaum
M.S., Mathematics, N. Copernicus University. Toruń, Poland, 1977

PROFESSIONAL EXPERIENCE

2013-present University of Connecticut,
Stuart and Joan Sidney Professor of Mathematics
1995-2013 Northeastern University, Professor of Mathematics
1990-1995 Northeastern University, Associate Professor of Mathematics
1985-1990 Northeastern University, Assistant Professor of Mathematics
1977-1985 Institute of Mathematics, Polish Academy of Sciences, Adiunkt.

RESEARCH AREAS: Mathematics

Commutative Algebra, Algebraic Geometry, Invariant Theory, Representations of Algebraic Groups and Coxeter Groups, Representations of Quivers.

RESEARCH AREAS: Others

Information Fusion, Geometric Complexity Theory.

BOOKS

1. Weyman, J., "Cohomology of vector bundles and syzygies," *Cambridge Tracts in Mathematics*, no. 149, Cambridge University Press (2003).

RESEARCH PUBLICATIONS

1. Bernstein-Sato polynomials for maximal minors and sub-maximal Pfaffians (with. A. Lorincz, C. Raicu and U. Walther), arXiv 1601.06688,
2. Trimming a Gorenstein ideal (with. L. Christensen and O. Veliche), arXiv 1512.02720, submitted to Journal of Commutative Algebra,
3. On minimal free resolutions and the method of shifted partial derivatives in complexity theory (with K. Efremenko, J. Landsberg and H. Schenck), arXiv 1504.05171,
4. The syzygies of some thickenings of determinantal ideals (with Claudiu Raicu), arXiv 1411.0151, to appear in Proceedings of the A.M.S,
5. Local cohomology with support in ideals of symmetric minors and Pfaffians (with C.Raicu), arXiv:1509.03954, to appear in Proc. London Math.Soc,
6. Modulated semi-invariants (with K. Igusa, K. Orr, G. Todorov), arXiv:1507.03051,
7. Module varieties and representation type of finite-dimensional algebras (with C. Chindris and R. Kinser), arXiv:1201.6422, International Mathematics Research Notices (2015), volume 2015, pp. 631-650,
8. Local cohomology with support in generic determinantal ideals (with C.Raicu), Algebra and Number Theory, Vol. 8, issue 5, 1231-1257,
9. Littlewood complexes and analogues of determinantal varieties (with S.Sam), International Mathematical Research Notices May 2014,
10. Top stable degenerations of finite dimensional representations II (with H. Derksen and B. Huisgen-Zimmermann), Advances in Mathematics, Vol. 259(2014), p. 730-765
11. Local cohomology with support in ideals of maximal minors and sub-maximal Pfaffians (with C.Raicu and E. Witt), arxiv 1305.1719, Advances in Mathematics, Vol. 250(2014), p. 596-610
12. Covariants of Θ -orbits for types E_6 , E_7 , E_8 , (with W. Kraśkiewicz, in: Edizioni della Normale, The Seventh European Conference on Combinatorics, Graph theory and Applications, Eurocomb 2013 (edited by Jaroslav Nešetřil and Marco Pellegrini), p. 401-406

13. Semi-invariants for gentle string algebras (with A. Carroll), *Noncommutative Birational Geometry, Representations and Combinatorics*, "Contemporary Mathematics" , Proceeding of the Special AMS session "Noncommutative birational geometry and cluster algebras" held during the Annual meeting of the AMS (Boston, 2012), edited by A. Berenstein, V. Retakh, 111-136, AMS, 2013, arXiv: 1106.0774,
14. Moduli of Abelian varieties, Vinberg theta groups, and free resolutions (with L. Gruson and S. Sam), *Commutative Algebra* (edited by Irena Peeva), 419-469, Springer, 2013, arXiv:1203.2575,
15. Homology of Littlewood complexes (with S.Sam and A. Snowden), *Selecta Mathematica New Series*, Vol. 19, Issue 3 (2013), 655-698,
16. Koszul homology of codimension 3 Gorenstein ideals (with S. Sam), arXiv:1203.3168, *Proc. of the A.M.S.*, 142 (2014), 401-408,
17. Pieri resolutions for classical groups (with S. Sam), *Journal of Algebra*, 329, no. 1(2011), 222-259,
18. An overview of mathematical issues arising in the geometric complexity theory approach to $VP \neq VNP$ (with P. Bürgisser, J. Landsberg, L. Manivel), *SIAM J. Comput*, 40(4), 1179-1209, (2011),
19. The combinatorics of quiver representations (with H. Derksen), math/0608288, *Ann. Inst. Fourier*, 61(3), 2011, p. 1061-1131,
20. On the existence of pure resolutions (with D. Eisenbud and G. Floystad), arXiv:0709.1529, *Ann. Inst. Fourier*, 61(3), 2011, p. 905-926,
21. Quivers with potentials and their representations II: Applications to Cluster Algebras (with H. Derksen and A. Zelevinsky), *J. Amer. Math. Soc*, 23 (2010), 749-790,
22. Cluster complexes via semi-invariants (with K. Igusa, K. Orr, G. Todorov), *Compositio Math*, 145(4) (2009), 1001-1034,
23. On secant varieties of compact Hermitian symmetric spaces (with J. Landsberg), *J. Pure and Appl. Algebra.*, 213, no.11, 2075-2086 (2009),
24. Quivers with potential and their representations I: Mutations (with H. Derksen and A. Zelevinsky), *Selecta Math.*, 14 (2008), 59-119,
25. On Ideal Generators for Affine Schubert Varieties, (with V. Kreiman, V. Lakshmibai, P. Magyar), *Algebraic Groups and homogeneous spaces*, 353-388, *Tata Inst. Fund. Res. Stud. Math.*, Tata Inst. Fund. Res., Mumbai, 2007.
26. Counterexamples to Okounkov's log-concavity conjecture (with C. Chindris and H. Derksen), *Compositio Math.*, 143 (2007), 1545-1557,
27. On the number of subrepresentations of a general quiver representation (with H. Derksen and A. Schofield), *J. London Math. Soc.* 76, 135-147 (2007),
28. On tangential varieties of rational homogeneous varieties (with J. Landsberg), *J. London Math. Soc.*, 76, 513-530 (2007),
29. On the ideals and singularities of secant varieties of Segre varieties, (with J. Landsberg), *Bull. London Math. Soc.* 2007 39, 685-697 (2007),
30. On the minimal free resolution of the universal ring for resolutions of length two, (with A. Kustin) *J. Algebra*, 311, 435-462 (2007),
31. Primary ideals associated to the linear strands of Lascoux's resolution and syzygies of corresponding irreducible representations of the Lie superalgebra $\mathfrak{gl}(m, n)$, (with K. Akin) *J. Algebra*, 310, 461-490 (2007),
32. Category localization semantics for specification refinements, (with J. Tomasik), *Ann. Math. Artif. Int.* 49(2007), 1-4
33. Standard Bases for Affine $SL(n)$ -Modules, (with V. Kreiman, V. Lakshmibai, P. Magyar), *International Mathematics Research Notices* 2005, No. 21.
34. Application of the geometric technique of calculating syzygies to Rees algebras, *J. Algebra*, 276, 776-793 (2004).
35. Free resolutions for polynomial functors (with A. Tchernev), *J. Algebra*, 271, 22-64 (2004).
36. On representations with free modules of covariants (with C. Chang), *J. Pure and Applied Algebra*, 192, 69-94 (2004).
37. Formalizing classes of information fusion systems, (with M. Kokar, J. Tomasik), *Information Fusion: An International Journal on Multi-Sensor, Multi-Source Information Fusion*, 5,3, 189-202, (2004)
38. Fitting's Lemma for $\mathbf{Z}/2$ -graded modules (with D. Eisenbud), *Trans. Am. Math. Soc.* 355, 4451-4473 (2003).

39. Cohen-Macaulay properties of Thom-Boardman strata II; the defining ideals of $\Sigma^{i,j}$ (with T. Fukui), Proc. Lond. Math. Soc. 87, 137-163 (2003).
40. Semi-invariants for quivers with relations (with H. Derksen), J. Algebra, 258, 216-227 (2002).
41. On the Littlewood-Richardson polynomials (with H. Derksen), J. Algebra, 255, 247-257 (2002).
42. On canonical decomposition for quiver representations (with H. Derksen), Compositio Math., 133, 245-265 (2002).
43. Generalized quivers associated to reductive groups (with H. Derksen), Colloquium Math., 94 151-173 (2002).
44. Two results on equations of nilpotent orbits, J. Algebraic Geom. 11 791-800 (2002).
45. Algebra and coinvariants and the action of a Coxeter element (with W. Kraśkiewicz), Bayreuther Math. Schr. 63, 265-284 (2001).
46. Semi-invariants of quivers and saturation for Littlewood-Richardson coefficients (with H. Derksen). J. Amer. Math. Soc. 13 467-479 (2000).
47. Graded characters of modules supported in the closure of a nilpotent conjugacy class (with M. Shimozono). European J. Combin. 21 257-288 (2000).
48. Cohen-Macaulay properties of Thom-Boardman strata. I. Morin's ideal.(with T. Fukui) Proc. London Math. Soc. 80 257-303 (2000).
49. Semiinvariants of quivers (with A. Skowroński), Transform. Groups 5, 361-402 (2000).
50. On the Grothendieck group of modules supported in a nilpotent orbit in a Lie algebra $gl(n)$ (with J. Klimek , W. Kraśkiewicz , M. Shimozono) , J. Pure Appl. Algebra 153 237-261 (2000).
51. Symplectic multiple flag varieties of finite type (with P. Magyar and A. Zelevinsky). J. Algebra 230 245-265 (2000)
52. Koszul complexes and hyperdeterminants (with G. Boffi). J. Algebra 230 68-88 (2000).
53. The irreducible tensor representations of $gl(m | 1)$ and their generic homology (with K. Akin). J. Algebra 230 5-23 (2000).
54. Semi-invariants of canonical algebras (with A. Skowroński). Manuscripta Math. 100 391-403 (1999).
55. Bases for coordinate rings of conjugacy classes of nilpotent matrices (with M. Shimozono). J. Algebra 220 1-55 (1999).
56. Multiple flag varieties of finite type (with P. Magyar and A. Zelevinsky). Adv. Math. 141 97-118 (1999).
57. The Grothendieck group of G -equivariant modules over coordinate rings of G -orbits. Colloq. Math. 78 (1998). no. 1, 105-118 (with J. Klimek and W. Kraśkiewicz),
58. The Grothendieck group of $GL(F) \times GL(G)$ -equivariant modules over the coordinate ring of determinantal varieties. Colloq. Math. 76 243-263 (1998).
59. Minimal free resolutions of determinantal ideals and irreducible representations of the Lie superalgebra $gl(m|n)$ (with K. Akin). J. Algebra 197 559-583 (1997).
60. A free resolution of a symplectic rank variety (with J. Klimek and W. Kraśkiewicz). J. Algebra 196 475-489 (1997).
61. A formula with nonnegative terms for the degree of the dual variety of a homogeneous space, Proc. Amer. Math. Soc. 125 1-8 (1997) (with C. DeConcini),
62. Singularities of hyperdeterminants . Ann. Inst. Fourier (Grenoble) 46 (1996), 591-644 (with A. Zelevinsky),
63. Determinantal formulas for multigraded resultants. J. Algebraic Geom. 3 (1994). no. 4, 569-597 (with A. Zelevinsky),
64. Multiplicative properties of projectively dual varieties. Manuscripta Math. 82 (1994). no. 2, 139-148 (with A. Zelevinsky),
65. Calculating discriminants by higher direct images. Trans. Amer. Math. Soc. 343 (1994). no. 1, 367-389
66. Gordan ideals in the theory of binary forms. J. Algebra 161 (1993). no. 2, 370-391,
67. On the Hilbert functions of multiplicity ideals. J. Algebra 161 (1993). no. 2, 358-369,
68. Some open problems in invariant theory. Free resolutions in commutative algebra and algebraic geometry (Sundance, UT, 1990). 139-146, Res. Notes Math., 2, Jones and Bartlett, Boston, MA, 1992,
69. Multiplicities of points on a Schubert variety in a minuscule G/P , Adv. Math. 84 (1990). no. 2, 179-208 (with V. Lakshmibai),
70. A short proof of a theorem of M. Hashimoto, J. Algebra 134 (1990). no. 1, 144-156 (with J. Roberts),
71. On the generic free resolutions. J. Algebra 128 (1990). no. 1, 1-44 (with P. Pragacz),

72. The equations of conjugacy classes of nilpotent matrices. *Invent. Math.* 98 (1989). no. 2, 229–245,
73. On the structure of free resolutions of length 3. *J. Algebra* 126 (1989). no. 1, 1–33,
74. K -theory of twisted Grassmannians. *K-Theory* 3 (1989). no. 2, 99–121 (with M. Levine and V. Srinivas),
75. The equations of strata for binary forms. *J. Algebra* 122 (1989). no. 1, 244–249,
76. Pieri’s formulas for classical groups. *Invariant theory* (Denton, TX, 1986). 177–184, *Contemp. Math.*, 88, Amer. Math. Soc., Providence, RI, 1989,
77. Multiplicities of points on a Schubert variety in a minuscule G/P . *C. R. Acad. Sci. Paris Sr. I Math.* 307 (1988). no. 20, 993–996 (with V. Lakshmibai),
78. Representation-theoretic interpretation of a formula of D. E. Littlewood. *Math. Proc. Cambridge Philos. Soc.* 103 (1988). no. 2, 193–196 (with T. Józefiak),
79. On the construction of resolutions of determinantal ideals: a survey. *Seminaire d’algèbre Paul Dubreil et Marie-Paule Malliavin, 37me anne* (Paris, 1985), 73–92, *Lecture Notes in Math.*, 1220, Springer, Berlin-New York, 1986 (with P. Pragacz),
80. Complexes associated with trace and evaluation. Another approach to Lascoux’s resolution. *Adv. in Math.* 57 (1985). no. 2, 163–207 (with P. Pragacz),
81. Symmetric functions and Koszul complexes. *Adv. in Math.* 56 (1985). no. 1, 1–8 (with T. Józefiak),
82. Schur functors and Schur complexes. *Adv. in Math.* 44 (1982). no. 3, 207–278 (with K. Akin and D. Buchsbaum),
83. Resolutions of determinantal varieties and tensor complexes associated with symmetric and antisymmetric matrices. *Young tableaux and Schur functors in algebra and geometry* (Toruń, 1980), pp. 109–189, *Asterisque*, 87-88, Soc. Math. France, Paris, 1981 (with T. Józefiak and P. Pragacz),
84. Resolutions of determinantal ideals: the submaximal minors. *Adv. in Math.* 39 (1981). no. 1, 1–30 (with K. Akin and D. Buchsbaum),
85. Resolutions of the exterior and symmetric powers of a module. *J. Algebra* 58 (1979). no. 2, 333–341,
86. Quotients of Cohen-Macaulay rings and perfect ideals. *Bull. Acad. Polon. Sci. Sr. Sci. Math. Astronom. Phys.* 26 (1978). no. 6, 475–476 (with T. Józefiak),

PREPRINTS

1. Periodic trees and semi-invariants (with K. Igusa and G. Todorov), arXiv 1407.0619,
2. Geometry of orbit closures for the representations associated to gradings of Lie algebras of types E_7 (with W.Kraśkiewicz), arXiv:1301.0720,
3. Noncommutative desingularizations of orbit closures for some representations of GL_n (with G.Zhao), arxiv, 1204.0488,
4. Geometry of orbit closures for the representations associated to gradings of Lie algebras of types E_6 , F_4 , G_2 (with W.Kraśkiewicz), arXiv:1201.1102,
5. Generic decompositions and semi-invariants for string algebras (with W.Kraśkiewicz), arXiv:11035415,
6. Degree bounds for invariants and covariants of binary forms (with H. Kraft) (2005).

EXPOSITORY WRITINGS

1. Andrei Zelevinsky, 1953 – 2013 (with A. Berenstein, J. Bernstein, B. Feigin, S. Fomin, M. Kapranov), to appear in *Transformation Groups*.
2. Representations of quivers, (with H. Derksen), *Notices of the A.M.S.* 52 200–206 (2005).
3. A note about David Buchsbaum, (with D. Eisenbud). *J. Algebra*, 230 1–4 (2000).
4. Review of the book ”Determinantal Varieties” by W. Bruns and U. Vetter, *Bulletin of the AMS*, Vol. 22, No.2, April 1990, 357-361.

EDITING

- Editorial Board, *Proceedings of the AMS*
- Associate Editor, *Journal of Commutative Algebra*

SERVICE

- **Postdoctoral Fellows mentored**

- Olgur Celikbas, 2014-2016, Presently Assistant Professor at University of West Virginia,
- Ryan Kinser, 2011-2014, Presently Assistant Professor, University of Iowa,
- Claudiu Raicu (postdoc at MSRI), 2013, currently Assistant Professor, University of Notre Dame,
- Jochen Kuttler, 2004–2005. Presently an Associate Professor at University of Alberta, Edmonton.
- Carol Chang, 1998-2001. Presently a researcher at CCR.
- Harm Derksen, 1997-1998. Presently a Professor, University of Michigan.
- Peter Magyar, 1995-1998. Presently an Associate Professor, Michigan State University.

- **Ph.D.'s supervised**

- Andras Lorincz (2016), currently a postdoc at Purdue University,
- Nicola Sambin (University Tor Vergata, 2014),
- Gufang Zhao (2014), currently a postdoc at UMass Amherst,
- Federico Galetto (2013), currently a postdoc at MacMaster University,
- Thomas Hudson (2012),
- Andrew Carroll (2012), currently Assistant Professor, dePaul University,
- Cristina diTrapano (University Tor Vergata, Rome) (2012),
- Steven V. Sam (MIT)(2012), currently Assistant Professor, University of Wisconsin,
- Kavita Sutar (2012), currently a postdoc at Chennai Mathematical Institute,
- Marcus Fries (2010),
- Riccardo Aragona (University Tor Vergata, Rome)(2009),
- Kristin Webster (2009),
- Steve Lovett (2003), currently Associate Professor, Wheaton College, Wheaton, IL.
- Laura Galindo (2000), currently Assistant Professor, Central University, Caracas, Venezuela.
- Olga Porras (1992), currently Associate Professor, University of the Andes, Merida, Venezuela.
- Jacek Klimek (1988), Assistant Professor, N. Copernicus University, Poland, 1988-2002, currently coowner of computer company.

- **Mentoring of junior researchers**

- Amelie Schreiber, currently graduate student at UConn
- Jason Ribeiro, graduate student at Northeastern,
- Michael Magen, graduate student at University of Versailles
- Victor Kreiman, currently postdoc at University of Georgia
- Alexander Tchernev, currently Associate Professor at SUNY, Albany,
- Mark Shimozone, currently Associate Professor at Virginia Tech
- Witold Kraśkiewicz, currently Assistant Professor, N. Copernicus University, Toruń , Poland
- Andrzej Daszkiewicz, Assistant Professor, N. Copernicus University, Toruń , Poland, 1988-2006,

- **Conferences organized**

- Organizer with Josh Grochow, Cris Moore and Vatro Vedral, workshop "Wildness in Computer Science, Physics and Mathematics, October 12-16, 2015, Santa Fe Institute,
- Organizer, Conference for the 60-th birthday of Andrei Zelevinsky (with M. Braverman, V. Toledano-Laredo, B. Webster, J. Weitsman), May 2013
- Organizer (with S. Kumar and J.M. Landsberg) MRC "Geometry and Representation Theory Related to Geometric Complexity and Other Variants of P. vs. NP", Snowbird, Utah, June 2012,
- Organizer (with S. Kwak), Special Session on Syzygies, joint meeting of AMS and KMS, Seoul, December, 2009,

- Organizer (with J. Landsberg, L. Lek-Heng, J. Morton), Workshop "Geometry and representation theory of tensors for computer science, statistics and other areas", American Institute of Mathematics, July 2008.
- Organizer, Special Session on Representations of Quivers AMS meeting, Boston (2003).
- Organizer (with G. Boffi), Conference in honor of David Buchsbaum, Genova, 1998 (funded by CNR). Served as coeditor for three issues of Journal of Pure and Applied Algebra (Vol. 152, No.1-3) that were dedicated to the confereces.
- Organizer (with D. Eisenbud and A. Martsinkovsky), Conference in honor of David Buchsbaum, Northeastern University, October 18-20, 1997 (funded by 10K grant from NSA). This was a major event in Boston area. There were 15 principal speakers from England, France, Germany, Italy, Japan and USA and a poster session. Served as coeditor for the issue of J. Algebra (Vol. 230, no 1.) that was dedicated to Buchsbaum.
- Organizer, Special Session on Syzygies in Algebra and Algebraic Geometry AMS meeting, Boston (1995).
- Organizer (with A. Iarrobino and A. Martsinkovsky), Conference on syzygies and Algebraic Geometry, Northeastern University, 1995. We decided to extend our Special Session by three days to have an International Conference on Syzygies (October 7-11, 1995). Altogether there were more than 30 speakers from Canada, France, Germany, Japan, Norway, Romania, USA, Spain and Venezuela. The volume of extended abstracts was produced.
- Organizer, (with D. Buchsbaum and R. Stanley) Special Year in Algebra and Combinatorics (at Brandeis, MIT and Northeastern), 1990/1991 (partial NSF funding). The Special Year included three long term visitors (A. Lascoux, M. Hashimoto and K. Akin) for the semester appointments at three institutions, and a number of speakers at the seminars at Brandeis, MIT and Northeastern throughout the year. The cost was shared between three institutions and a special NSF grant.

• Committees

- Departmental Committees:
 - * Graduate Coordinator, June 2008-August 2011,
 - * Hiring Committee, 2006/2007, 2009/2010, 2010/2011, 2011/2012,
 - * Hiring of a research post-doc Committee, 2010/2011
 - * Graduate Coordinator, October 1997 - October 1999.
 - * Graduate Committee Member, 1997-present,
 - * Raises Committee, 1992,
 - * Tenure and Promotion Committee, 1990-present,
 - * Co-PI on three Departmental proposals for Vigre and MTCP (2002-2004).
 - * Raises Committee, Spring 2008,
- College Committees:
 - * Sabbatical Committee, 2000/2001; chairman 2001/2002.
- External Committees:
 - * NSF panel, Commutative Algebra and Group Theory, December 2007,
 - * NSF panel, Commutative Algebra and Group Theory, December, 2004.
 - * NSF panel, Commutative Algebra and Algebraic Geometry, January 2001.
 - * Member of the Academic Sponsors Committee, MSRI, 2001-present.

• Refereeing and Reviewing

- Referee, Journal of the A.M.S.
- Referee, Crelle Journal of Mathematics
- Reviewer, Bulletin of A.M.S.
- Reviewer, Math Reviews.

- Referee, N.S.A. and N.S.F.
- Referee, *Inventiones Mathematicae*
- Referee, *Journal of the AMS*
- Referee, *Journal of Algebraic Geometry*
- Referee, *Duke Mathematical Journal*
- Referee, *Transactions of the A.M.S.*
- Referee, *Proceedings of the A.M.S.*
- Referee, *Advances in Mathematics*
- Referee, *Commentarii Mathematici Helvetici*
- Referee, *Mathematische Annalen*
- Referee, *Proceedings of London Math. Society*
- Referee, *Journal of Algebra*
- Referee, *Manuscripta Mathematica*
- Referee, *Journal of Pure and Applied Algebra*
- Referee, *Transformation Groups*
- Referee, *Forum Mathematicum*
- Referee, *Colloquium Mathematicum*

CONFERENCE, SEMINAR AND COLLOQUIUM TALKS

- Conference talks

- Young tableaux in Algebra and Geometry, Toruń, Poland, August 1980,
- Algebraic Geometry, Bucharest, 1981,
- Commutative Algebra, Durham, July 1981,
- Meeting of Polish Mathematical Society, Wrocław, 1983,
- Commutative Algebra, MSRI, May 1987,
- Commutative Algebra conference, Purdue University, 1987,
- Free resolutions in Algebra and Algebraic Geometry, Sundance, 1990,
- Algebraic Combinatorics conference, University of Michigan, 1991,
- Cornell University workshop on combinatorics (B.Sturmfels, N. White organizers), 1991,
- Syzygies in Algebraic Geometry, Oberwolfach, 1991,
- Summer AMS Institute in Computational Algebra, Amherst, 1992,
- Algebraic Groups, Monte Verita, May 1995,
- International conference on Algebraic Groups, Kazimierz, Poland, 1996,
- D. Buchsbaum's retirement conference, Brandeis University, 1997,
- Algebraic Groups, Luminy, November 1999,
- Workshop on interactions between algebraic geometry and noncommutative algebra, MSRI, February 2000,
- Representations of Algebras ICRA, Bielefeld, September 2000,
- Algebraic Groups, Oberwolfach, February 2001,
- Conference in honor of Claudio Procesi, Rome, June 2001,
- Algebraic Geometry, Oberwolfach, May 2002,
- Commutative Algebra, Levico, June 2002,

- International Algebra Conference, N. Copernicus University, Toruń, Poland, October 2002,
 - Workshop on interactions of Commutative Algebra and Representation Theory, MSRI, February 2003.
 - NORTH6 conference on nilpotent orbits and representation theory, Kawaguchi-Ko, Japan, September 2004,
 - Complex Algebraic Geometry, Luminy, October 2005,
 - Texas Algebraic Geometry Seminar Conference, May 2006,
 - Cluster Algebras, Cluster Tilted Algebras, workshop, Bielefeld, May 2006,
 - Invariant Theory conference in honor of G. Schwartz, Fields Institute, Toronto, July, 2006,
 - Workshop on Commutative Algebra and Combinatorics, Universite de Montreal, January 2007,
 - Workshop on Commutative Algebra and Combinatorics, University of Halifax, January 2008,
 - Workshop on Boij-Soderberg conjectures, Cornell University, March 2008,
 - Conference on Cluster Algebras, Mexico City, December 2008,
 - Workshop on Commutative Algebra and Combinatorics, University of New Foundland, St. Johns, January, 2009,
 - Abel Symposium, Norway, June 2009,
 - Conference for 60-th birthday of C. DeConcini, Cortona, Italy, June 2009,
 - Conference on Kronecker Coefficients, Seville, November 2009,
 - Summer school in tensors and representation theory, Norway, July 2010, 7 lectures,
 - Workshop, on Commutative Algebra and Combinatorics, Lakehead University, Thunder Bay, Canada, January 2011,
 - Representations of quivers and finite dimensional algebras, Oberwolfach, February 2011,
 - P vs. NP workshop, ICERM, Brown University, July 2011,
 - Representations of finite dimensional algebras, Sherbrooke, Quebec, September 2011,
 - Geometrie Algebrique Geometrie Complexe, Luminy, March 2012,
 - Conference in honor of Marc Levine, University Duisburg-Essen, June 2012,
 - AlGeCom Day, Purdue University, October 2012,
 - Representations of quivers and finite dimensional algebras, Oberwolfach, February 2014,
 - Workshop "Cluster algebras and Hall algebras", Montreal, May 2014.
 - Bootcamp and workshop on Complexity Theory, Simons Institute, Berkeley, September 2014, two talks
 - Conference on cluster algebras, Seoul, South Korea, November 2014, two talks,
 - Conference on geometric methods in representation theory, University of Iowa, November 2014,
 - Talk at the workshop on Wildness, Santa Fe Institute, October 2015,
 - Southeast workshop on representations of Lie Algebras, North Carolina State University, October 2015,
- Colloquium talks
 - Dalrymple Lecture, University of Missisipi, October 2015,
 - University of Missisipi, October 2015,
 - Sierpiński Talk, Warsaw University, June 2015,
 - Keynote Speaker: Conference on geometric methods in representation theory, University of Missouri, November 2013,
 - Warsaw University, March 2012,

- KAIST, Daejeon, South Korea, December 2009,
 - University Roma Tor Vergata, April 2008
 - Berkeley-Stanford Algebraic Geometry Colloquium, University of California, Berkeley, February 2008
 - University of Western Ontario, London, Canada, January 2008
 - University of Mississippi, March, 2006
 - Tripode Seminar, Lyon, 2004
 - University of Oklahoma 2004, 1988, 1985
 - SUNY-Albany 2002, 1986
 - Georgia Institute of Technology, 2001
 - University of Kansas, 2001, 1990, 1986
 - Nicholas Copernicus University, Toruń , Poland, 1998, 1996
 - University of Toronto, 1995
 - Central University, Caracas, 1991, 1990
 - University of Minnesota, 1988, 1979
- Seminar talks
 - Valley geometry Seminar, UMass Amherst, April 2016,
 - Complexity Theory Seminar, Technical University, Berlin, January 2016,
 - Algebraic Geometry Seminar, Texas A&M, November 2015,
 - Motives Seminar, University Duisburg-Essen, two talks, December 2013,
 - Algebra Seminar, Köln University, December 2013,
 - Algebra Seminar, University of Münster, December 2013,
 - Algebra Seminar, University of Connecticut, November 2013,
 - Algebra Seminar, University of Bielefeld, October 2013,
 - Several seminar talks at the MSRI program in Commutative Algebra, January-May, 2013,
 - Algebraic Geometry Seminar, Jagiellonian University, Cracow, Poland, November 2012,
 - Valley Geometry Seminar, UMass Amherst, October 2012,
 - Geometry Seminar, Institute Fourier, Grenoble, March 2012,
 - Algebra Seminar, Queens University, Kingston, ON, Canada, April 2011,
 - Algebra seminar, CUNY, December 2010,
 - Algebra Seminar, University of Basel, May 2010,
 - Algebraic Geometry Seminar, KAIST, Korea, Decemer 2009 (3 lectures),
 - Algebra Seminar, Texas A& M University, January, 2009 (2 talks),
 - Algebra Seminar, Universite de Versailles, April 2008,
 - Superalgebra Seminar, Universite de Nancy, April, 2008,
 - Algebra Seminar, University of Michigan, February 2008,
 - Algebra Seminar, University of Basel, June 2007,
 - University Roma I, May 2007,
 - University of Florence, March 2007,
 - University Roma II, November 2005
 - University of Florence, November 2005

- Paris Algebraic Geometry Seminar, October, 2005
 - University of Versailles (2 talks), October, 2005
 - University of North Carolina Chapel Hill Representation Theory Seminar, 2005
 - University of Versailles (2 talks), 2004
 - Paris Algebra Seminar, Institute Henri Poincaré, 2004
 - University of Clermont-Ferrand Algebra Seminar, 2004
 - University of Brest Algebra Seminar, 2004
 - University of South Carolina Algebra Seminar, 2004
 - Georgia Tech Algebra Seminar, 2004, 2001
 - UC Berkeley Commutative Algebra Seminar, 2003, 2000
 - MSRI Seminar on Discriminants, Opening Talk, 2003
 - MIT Algebraic Geometry Seminar 2002, 1988
 - MIT Infinite Dimensional Algebras Seminar 2001
 - University Roma II Algebra Seminar, 1997, 1996 (2 talks), 1992 (2 talks), 1989
 - University of Trieste Algebra Seminar, 1997
 - MacGill University Algebra Seminar, 1997
 - Scuola Normale di Pisa, 1992, 1989
 - University of Catania Algebra Seminar, 1992, 1989 (4 talks)
 - Politecnico di Torino Algebra Seminar, 1992
 - University of Bologna Algebra Seminar, 1992
 - University of Bari Algebra Seminar, 1992
 - Central University, Caracas Algebra Seminar, 1991 (2 talks), 1990 (2 talks),
 - Simon Bolivar University, Caracas, 1990
 - University of Merida, Venezuela, 1990
 - University of Minnesota Algebra Seminar, 1990, 1988
 - University Roma I Algebra Seminar, 1989
 - University of Messina Algebra Seminar, 1989
 - Brandeis University Fellowship of the Ring Seminar, numerous talks (2003, about ten talks in the years 1985-2000)
 - Nicholas Copernicus University Algebra Seminar, numerous talks, 1981-1985
 - Brandeis University Special Talk, 1981
- AMS Special Sessions.
 - Invariant Theory, Denton, TX, 1986,
 - Syzygies in Algebraic Geometry, Phoenix, AZ, 1990,
 - Commutative Algebra, Tallahassee, FL, 2004,
 - Commutative Algebra, Sydney, 2009,
 - Representations of Artin Algebras, Riverside, CA, November 2009,
 - Geometry of varieties, syzygies and computations, Seoul, December 2009,
 - Representations of finite dimensional algebras, Syracuse University, October 2010,
 - Algebraic Groups, Notre Dame University, November 2010,
 - Representations of algebras, University of Iowa, March 2011,

ACADEMIC VISITS AND AFFILIATIONS

- Karcher Visitor, University of Oklahoma, 1985 and 1988,
- University of Catania, April, May 1989, Scuola Normale, Pisa, June 1989.
- Central University and IVIC, Caracas, Venezuela, November 1990,
- Central University and IVIC, Caracas, Venezuela, November 1991,
- Scuola Normale, Pisa, October, 1992, University Roma II, November 1992,
- University of Toronto, September 1995,
- N. Copernicus University, Toruń, Poland, April, May, 1996,
- University Roma II, June 1996,
- University Roma II, May 1997,
- N. Copernicus University, Toruń , Poland, June 1997, June 1998,
- Member, MSRI, February 2000,
- Saitama University, Japan, August 2000,
- Saitama University, Japan, March 2002,
- University of Pescara, April-June, 2002,
- Member, MSRI, February 2003,
- Frontier Talks, Texas A& M University, November, 2003,
- University of Versailles, April, 2004,
- Saitama University, September, 2004,
- Karcher Visitor, University of Oklahoma, September, 2004,
- University of Versailles, October, 2005,
- INDAM Visiting Professor, University Roma II, March 15-May 15, 2007,
- University of Basel, June 2007,
- University of Nancy, April, May 2008,
- University of Rome, Tor Vergata, April 2008,
- KAIST, Dejeon, Korea, December 2009,
- University of Rome, Tor Vergata, Visiting Professor, May 2011,
- N. Copernicus University, Toruń, Poland, EU Visiting Professor June 2011,
- Institute J. Fourier, Grenoble, February 2012,
- University Duisburg-Essen, April, May, 2012,
- University Tor Vergata Rome, June 2012,
- University Duisburg-Essen, June-July, 2013,
- University Duisburg-Essen, September-December, 2013.

- Technical University, Berlin, January 2016,
- University of Florence, May-June 2016,

PRIZES, AWARDS, AND GRANTS

- Waclaw Sierpiński Medal and Lecture, Polish Mathematical Society and Warsaw University, 2015.
- Simons Research Professor, MSRI, January-May, 2013.
- Humboldt Forschungspreis, March 2012.
- NSF grant DMS-1400740, \$ 288,666, 07/01/2014-06/30/2017.
- NSF grant DMS-0901185, \$ 200,000, 07/01/2009-06/30/2014.
- NSF grant DMS-0600229 Geometric aspects of Quiver Representations, \$ 120,000, 07/01/06-06/30/09.
- NSF grant DMS-0300064 Applications of Quiver Representations, \$ 120,000, 07/01/03-06/30/06.
- NSF grant DMS-0070658 Applications of Representations of Quivers, \$ 94,500, 07/01/00-06/30/03.
- NSF grant DMS-9700884 Varieties related to Algebraic Group Actions, \$ 75,000, 07/01/97-06/30/00.
- NSF grant DMS-9403703 Syzygies of Special Varieties, \$ 73,050, 07/01/94-06/30/97.
- NSF grant DMS-9102432 Mathematical Sciences: Research in Commutative Algebra, \$ 72,640, 07/01/91-12/31/94.
- NSF grant DMS-8903466 Research in Commutative Algebra, \$ 67,200 07/01/89-12/31/91.
- NSF grant DMS-8702809 Research in Commutative Algebra and Invariant Theory, \$ 65,400, 07/01/87-06/30/89.
- J. Waclawek Prize of Institute of Mathematics of Polish Academy of Sciences for an outstanding Ph.D. thesis, 1981,
- Prize of Polish Mathematical Society for young mathematicians, for papers published in years 1979-1982, 1982,
- Kuratowski Prize of Polish Mathematical Society (joint with Piotr Pragacz), 1983,
- M. Waclawek Prize of the Institute of Polish Academy of Sciences, 1982,
- Prize of the Polish Mathematical Society for young mathematicians, 1982.