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**Employment:**

Texas A&M University, College Station, TX, professor of mathematics (8/04- present).  
Georgia Institute of Technology, Atlanta, GA, associate professor (8/01 -8/04), visiting associate professor (8/00-7/01).  
Université Paul Sabatier, Toulouse, Maître de conférences (9/96-7/00).  
Columbia University, New York, visiting assistant professor (9/94-5/95, 1/96-5/96).  
Institut des Hautes Etudes Scientifiques (IHES), Bures Sur Yvette, visiting member (9/95-12/95).  
University of Pennsylvania, Philadelphia, Hans Rademacher Instructor and National Science Foundation postdoctoral fellow (9/90-7/92, 9/93-5/94).  
Institute for Advanced Study (IAS), Princeton, Visiting member and National Science Foundation postdoctoral fellow, (9/92-4/93).

**Education:**

1997: Habilitation à diriger des recherches, Université Paul Sabatier, Toulouse.  
Director: Dr. Carlos Simpson.  
Jury: Dr. A. Beauville, Dr. J.P. Demailly, Dr. M. Green, Dr. M. Gromov, Dr. G. Levitt, Dr. J.C. Sikorav, Dr. C. Simpson, Dr. B. Teissier, Dr. F. Zak.  
Mémoire: *Géométrie algébrique et géométrie différentielle projective*.  
1990: Ph.D., Duke University, Durham, NC.  
Director: Dr. Robert L. Bryant.  
Thesis: *Minimal submanifolds defined by first order systems of pde*.  
1986: Honors Combined Sc.B. and M.S. degree, Brown University, Providence RI.  
Director: Dr. Katsumi Nomizu.  
Thesis: *A Gauss-Bonnet formula for Lorentzian two-manifolds*.

**Areas of research:** Differential and algebraic geometry. More specifically, exterior differential systems, projective geometry, homogeneous varieties. Applications of representation theory and

geometry to complexity theory (complexity of matrix multiplication and P v. NP). Geometry of tensors and applications.

**Research Grants:**

- National Science Foundation grant DMS-1006353 (joint with C. Robles) (7/10 - 7/13)
- National Science Foundation grant DMS-0805782 (joint with C. Robles) (8/08 - 7/10)
- National Science Foundation grant DMS-0505216 (collab. w. V. Zharnitsky) (8/05 - 7/08)
- National Science Foundation grant DMS-0305829 (sole PI) (8/03 - 7/06)
- Prime d'encadrement et de recherche (French government grant) (9/99 - 9/02)
- National Science Foundation grant DMS-9626640 (sole PI) (8/96 - 8/99)
- National Science Foundation grant DMS-9303704 (sole PI) (7/93 - 7/96)
- National Science Foundation Postdoctoral Research Fellowship (7/90-7/93)

**Other Grants:**

- Institut for Math and Applications (IMA) conference grant for Applications of Geometry workshop at TAMU (4/12)
- National Science Foundation grant for Texas geometry and topology conference DMS-0904481 (with Jon Pitts) (4/09 - 4/12)
- National Science Foundation grant for Texas Algebraic Geometry Seminar DMS-0915235 (with M. Rojas, P. Lima-Filho, F. Sottile, L. Matusevich) (4/09 - 4/12)
- National Science Foundation grant for Texas geometry and topology conference DMS-0605082 (with Jon Pitts) (4/06 - 4/09)
- Georgia Tech VIGRE grant (one of 5 PI's) (2002-2007).

**Teaching experience.**

Teaching at all levels in the US and France, from first year undergraduate to advanced graduate classes, including experimental calculus courses at the University of Pennsylvania and Columbia University.

Initiated supplementary mathematics programs in Philadelphia city schools to spark interest in mathematics (funded by a small grant from the Executive Service Corps of Philadelphia). Monthly mathematics presentations at a junior high school and a high school (91-94).

**Supervision.**

PhD students:

L. Oeding, *Defining equations of the variety of principal minors* PhD 5/09. Obtained an NSF abroad fellowship in Florence Italy (under direction of G. Ottaviani), currently at UC Berkeley.

F. Holweck, *Singularities of hyperplane sections of homogenous varieties*, PhD obtained 9/04 from Université Toulouse III. Offered one year postdoctoral research fellowship at Korean institute for advanced study (KIAS), but was forced to decline because of family circumstances. Currently at U. Belfort.

E. Allaud, *Variation of Hodge structure viewed from an exterior differential systems perspective*, PhD obtained 10/02 from Université Toulouse III. Obtained a three year Wiley assistant professorship at the University of Utah. Currently at U. Martinique.

Y. Ke, current PhD student (since Fall 07).

M. Yang, current PhD student (since Fall 07).

Y. Qi, current PhD student (since Spring 08).

Postdoctoral supervision

H. Kadish (8/11-present)

A. Boralevi (8/08-7/10)

J. Buczynski (8/08-7/10): funded by Marie Curie fellowship (European Union)

D. The (8/08-7/11): funded by NSERC fellowship (Canadian government) and TAMU

J. Dilles (8/06-12/07)

D. Fox, (8/03-5/04): VIGRE post-doc

Georgia Faculty development program: M. Dillon, *Constructions of graded Lie algebras* (2001-2) *Mémoires de DEA* directed (The French *Mémoire de DEA* is roughly the equivalent of a master's thesis):

M. Canton, *Rigidity of G-structures* (6/00)

F. Holweck, *Representation theory and geometry* (6/00)

S. Bonhomme, *Dual Varieties* (6/99)

S. Lapasset, *The Goresky-MacPherson version of Lefschetz's theorem* (6/99)

E. Allaud, *The calculus of variations after Bryant and Griffiths* (6/98)

C. Laratte, *Characteristic varieties and the Radon transform* (6/98)

### Service (since 2006)

AMS Committee on Academic Freedom, Tenure, and Employment Security (CAFTES) (since 11/08), chair of committee (2011).

TAMU math. dept. subcommittee T (since 10/10, head in 2011)

TAMU math dept. post-doc committee (10/08-10/10)

TAMU math dept.graduate committee (10/06-10/08)

### Organization since 2007

Co-organizer of *AMS MRC on Geometry and Representation Theory Related to Geometric Complexity and Other Variants of P v. NP*, Snowbird, Ut. (6/12)

Co-organizer (with J.Harris) of *Questions in geometry arising in the sciences* TAMU (4/12)

Co-organizer of *Mathematical aspects of P v. NP and variants*, ICERM, Brown University, Providence RI. (8/11)

Steering committee for: Latin American School on Algebraic Geometry and Applications /Escuela Latinoamericana de Geometra Algebraica y Aplicaciones (ELGA 2011) (8/11).

Co-organizer of the fall 2010 Texas geometry and topology conference (TGTC), TAMU, (11/10).

Steering committee for: Tensor Decompositions and Applications (TDA 2010) Bari, Italy (Engineering conference on tensors) (09/10).

Co-organizer of the spring 2009 Texas Algebraic Geometry Seminar, TAMU, (05/09).

Principal co-organizer and teacher of MSRI summer graduate workshop, *Geometry and Representation Theory of Tensors for Computer Science, Statistics, and other areas*, (07/08).

Principal co-organizer of AIM workshop *Geometry and representation theory of tensors for computer science, statistics and other areas* (07/08).

Co-organizer of the fall 2007 Texas geometry and topology festival, TAMU, 11/07.

## Seminar organization

Co-organizer and initiator of the weekly TAMU *Geometry seminar*, including the monthly *Geometry and string theory seminar*

<http://www.math.tamu.edu/seminars/geometry/>

Co-organizer and initiator of the weekly TAMU *Working geometry seminar*,

[http://www.math.tamu.edu/seminars/geometry\\_working/](http://www.math.tamu.edu/seminars/geometry_working/)

Organizer and initiator of the weekly TAMU *Student/Post-doc geometry seminar*

[http://www.math.tamu.edu/seminars/studentpd\\_geom\\_work/](http://www.math.tamu.edu/seminars/studentpd_geom_work/)

**Editing.** Editor for *Differential geometry and its applications* since fall 2010. Editor for special issue of SIGMA, Eli Cartan and differential geometry (2008).

**Membership.** Member of the AMS and SIAM.

## Publications

### Research articles

1. “On the geometry of Tensor Network States” (with Y. Qi and K. Ye), to appear in *Quantum Information and Computation*, arXiv:1105.4449.
2. “Equations for secant varieties of Veronese and other varieties” (with G. Ottaviani), *Annali di Matematica Pura e Applicata*, 2011.

3. “Determinantal equations for secant varieties and the Eisenbud-Koh-Stillman conjecture” (with J. Buczyński and A. Giesky),  
to appear in *J. Alg. Geom.*, arXiv:1007.0192.
4. “Fubini-Griffiths-Harris rigidity and Lie algebra cohomology” (with C. Robles),  
to appear in *Asian Math. J.* arXiv:0707.3410.
5. “Ranks of tensors and a generalization of secant varieties” (with J. Buczyński),  
to appear in LAA special issue on tensors. arXiv:0909.4262.
6. “An overview of mathematical issues arising in the Geometric complexity theory approach to  $VP \neq VNP$ ” (with P. Bürgisser, L. Manivel and J. Weyman)  
*SIAM J. Comp.* 2011.
7. “Holographic algorithms without matchgates” (with Jason Morton and Serguei Norine)  
to appear in LAA special issue on tensors. arXiv:0904.0471
8. “Hypersurfaces with degenerate duals and the Geometric Complexity Theory Program” (with L. Manivel and N. Ressayre)  
to appear in *Commentari Math. Helv.* arXiv:1004.4802
9. “Lines on hypersurfaces” (with C. Robles)  
*J. London Math. Soc.* (2) 82 (2010), no. 3, 733746,
10. “On the Debarre-deJong and Beheshti-Starr conjectures on varieties with too many lines” (with O. Tommasi)  
*Mich. Math. J.* **59** Issue 3 (2010) 573-588.
11. “P versus NP and geometry”  
*J. Symbolic Computation*, **45** (2010) 1359-1377.
12. “On the ranks and border ranks of symmetric tensors” (with Z. Teitler)  
*Found. Comput. Math.* **10** (2010), no. 3, 339366.
13. “On secant varieties of Compact Hermitian Symmetric Spaces” (with J. Weyman)  
*Journal of Pure and Applied Algebra* **213** (2009), no. 11, 2075–2086.
14. “Fubini’s Theorem in codimension two” (with C. Robles)  
*J. Reine Angew. Math.* **631** (2009), 221–235.

15. “Geometry and the complexity of matrix multiplication”,  
*Bull. Amer. Math. Soc.* (N.S.) **45** (2008), no. 2, 247–284.
16. “Differential geometry of submanifolds of projective space”  
in Symmetries and overdetermined systems of partial differential equations, 105–125, IMA  
Vol. Math. Appl., 144. (2008)
17. “Generalizations of Strassen’s equations for secant varieties of Segre varieties ” (with L.  
Manivel)  
*Comm. Algebra* 36 (2008), no. 2, 405–422
18. “On the ideals and singularities of secant varieties of Segre varieties” (with J. Weyman)  
*Bull. Lond. Math. Soc.* **39** (2007), no. 4, 685–697.
19. “Legendrian varieties” (with L. Manivel)  
*Asian J. Math.* **11** (2007), no. 3, 341–359
20. “On Tangential varieties of rational homogeneous varieties” (with J. Weyman)  
*Journal Lond. Math. Soc.* **76** (2007) (2), 513–530.
21. “The border rank of the multiplication of two by two matrices is seven”  
*J. Amer. Math. Soc.* **19** (2006), no. 2, 447–459
22. “A universal dimension formula for complex simple Lie algebras” (with L. Manivel)  
*Adv. Math.* **201** (2006), no. 2, 379–407.
23. “The sextonions and  $E_{7\frac{1}{2}}$  ” (with L. Manivel)  
*Adv. Math.* **201** (2006), no. 1, 143–179.
24. “Griffiths-Harris rigidity of compact Hermitian symmetric spaces”  
*J. Differential Geometry* **74** (2006) 395–405.
25. “On the ideals of secant varieties of Segre varieties” (with L. Manivel)  
*Found. Comput. Math.* **4** (2004), no. 4, 397–422.
26. “On space-time coding in the presence of spatio-temporal correlation ”  
(with M. Fozunbal (principal author), S. McLaughlin, R. Schafer), *IEEE Transactions on  
Information Theory* **50** (2004), no. 9, 1910–1926.

27. “Series of Lie Groups” (with L. Manivel)  
*Michigan Math. J.* **52** (2004), no. 2, 453–479
28. “Series of nilpotent orbits” (with L. Manivel and B. Westbury)  
*Experiment. Math.* **13** (2004), no. 1, 13–29.
29. “Lines on algebraic varieties”  
*Journal für die reine und angewandte Mathematik (Crelle)*, **562** (2003) p 1-3.
30. “On the projective geometry of homogeneous varieties” (with L. Manivel).  
*Commentari Math. Helv.*, **78**(2003) p 65-100.
31. “Triality, exceptional Lie algebras, and Deligne dimension formulas”(with L. Manivel)  
*Advances in Mathematics* **171** (2002) p 59-85.
32. “Construction and classification of complex simple Lie algebras via projective geometry”  
(with L. Manivel)  
*Selecta Mathematica*, **8** p 137-159 (2002).
33. “On the projective geometry of Freudenthal’s magic chart” (with L. Manivel)  
*J. Algebra*, **239** p 477-512 (2001).
34. “On the infinitesimal rigidity of homogeneous varieties”  
*Compositio Mathematica*, **118** (1999) pp. 189-201.
35. “Is a linear space contained in a submanifold? - On the number of derivatives needed to tell ”  
*Journal für die reine und angewandte Mathematik (Crelle)* **508**(1999) pp. 53-60.
36. “On symmetric degeneracy loci, spaces of symmetric matrices of constant rank and dual varieties ” (with B. Ilic)  
*Mathematische Annalen*, **314** (1999) pp 159-174.
37. “On a conjecture of Kontsevich and variants of Castelnuovo’s lemma”  
*Compositio Mathematica* **115** (1999) pp. 231-239 and **140** (2004), no. 4, 1112..
38. “On minimal isometric embeddings” (with T. Ivey)  
*Duke Mathematical Journal* **89**(1997) pp. 555-576.

39. “Differential-geometric characterizations of complete intersections”  
*Journal of Differential Geometry* **44** (1996) pp. 32-73.
40. “On degenerate secant and tangential varieties and local differential geometry”  
*Duke Mathematical Journal* **85**(1996) pp. 605-634.
41. “On second fundamental forms of projective varieties”  
*Inventiones Math.* **117**(1994) pp. 303-315.
42. “Minimal submanifolds defined by first order systems of PDE”  
*Journal of Differential Geometry*, **36**(1992) pp. 369-417.
43. “Minimal submanifolds of  $E^{2n+1}$  arising from degenerate  $SO(3)$  orbits on the Grassmannian”  
*AMS Transactions*, **325**(1991), pp. 101-117.

### Submitted research articles

1. “New lower bounds for the border rank of matrix multiplication” (with G. Ottaviani)  
arXiv:1112.6007.
2. “On the third secant variety” (with J. Buczynski)  
arXiv:1111.7005.

### Expository articles

1. “Exterior differential systems, Lie algebra cohomology, and the rigidity of homogeneous varieties”  
in the Proceedings of the 2008 Srni Winter School in geometry and Physics, *Arch. Math.* (Brno) 44 (2008), no. 5, 419–447.
2. “Exterior differential systems and billiards”  
in *Geometry, Integrability and Quantization VII* edited by Ivailo M. Mladenov and Allen C. Hirshfeld. 35–54, Softex, Sofia, 2006.
3. “Representation theory and projective geometry” (with L. Manivel)  
in *Algebraic transformation groups and algebraic varieties*, 71–122, Encyclopaedia Math. Sci., 132, Springer, Berlin, 2004

4. “ $G$ -structures via three examples”  
in *Web theory and related topics*, Grifone, Salem, eds., World Scientific 2001, p 133-150.
5. “Exterior differential systems: a geometric approach to pde”  
*Proc. Workshop pure math.* **17.III**(1998) pp. 77-101.
6. “Géométrie algébrique et géométrie différentielle projective”  
*Prépublication 106 du Laboratoire E. Picard*, décembre 1997. (Habilitation à diriger des recherches)
7. “On the local differential geometry of complete intersections”  
*Séminaire de théorie spectrale et géométrie, Grenoble* (1994-1995) pp. 1-12.

## Books

1. “Tensors: Geometry and Applications”  
*AMS graduate studies in mathematics* vol 128, 2011. 439 pages.
2. “Cartan for beginners: an introduction to the moving frame and exterior differential systems” (with T. Ivey)  
*AMS graduate studies in mathematics* vol 61, 2003. 378 pages.
3. “Algebraic geometry and projective differential geometry, Seoul National University concentrated lecture series 1997”  
Seoul National University Press (1999). 85 pages.

## Extended research invitations.

Algebraic Geometry with a view towards applications, Mittag-Leffler Inst., Stockholm one month (5/11)

ANU, Canberra, 3 weeks (7/10)

U. Grenoble, France, one month (10/09)

ANU, Canberra, 3 weeks (7/09)

Institut des Hautes Etudes Scientifiques (IHES), one month (7/07-8/07)

Korean Institute for Advanced Study, Seoul, one month visiting professor (6/06)

Harvard University, one semester visiting professor (7/04-12/04)

University of Grenoble, one month visiting professor (5/04)

Korean Institute for Advanced Study, Seoul, one month visiting professor (12/00-1/01)

Mathematisches Institut, Basel, one month visiting professor (6/00)

Institut des Hautes Etudes Scientifiques (IHES) (8/99)

University of Grenoble, one month visiting professor (11/95)  
Institut des Hautes Etudes Scientifiques (IHES) (6/95, 9/95-10/95, 12/95)  
Mathematical Sciences Research Institute (MSRI) (3/94, 5/94)  
Mathematical Sciences Research Institute (MSRI) (1/93, 5/93)  
University of Chicago, one month visiting professor (5/92)  
University of Chicago, one month visiting professor (5/91)

### **Plenary or principal lectures at conferences (since 2000)**

1. 17-th Conference of the International Linear Algebra Society, Braunschweig, Germany (8/11)
2. Conformal Differential Geometry and its Interaction with Representation Theory, University of Arkansas, Fayetteville (4/11)
3. Workshop on Tensor Decompositions and Applications (TDA), Bari, Italy (9/10).
4. Differential Geometry and its Applications (DGA2010), Brno, Czech Republic, (8/10).
5. Mathematics and Physics on the Borderline between Algebraic and Differential Geometry, Australian National University, Canberra, Australia (7/10).
6. MEGA 2009: Effective methods in algebraic geometry, Barcelona, Spain (6/09)
7. Workshop on tensors and interpolation, Nice (6/9)
8. 2009 Haifa Matrix theory Conference, Isreal (5/9)
9. Texas geometry and topology conference, University of Houston (2/09)
10. The 28th Winter School of Geometry and Physics, Srni, Cech Republic (1/07) - plenary lecture series.
11. Annual Conference of the Heilbronn Institute for Mathematical Research (HIMR), Bristol (9/07)
12. Workshop on Complexity, Coding, and Communication, IMA, Minneapolis MN (4/07)
13. Texas geometry and topology conference, Texas Christian University (3/07)
14. Geometry of vector distributions, differential equations, and variational problems, ITCP, Trieste, Italy (12/06)
15. Symmetries and Overdetermined Systems of Partial Differential Equations, IMA, MN. (7/06)

16. Lie algebra workshop, Field's Institute, Univ. of Ottawa (3/06)
17. Geometry Meeting in memory of Professor S.S. Chern, Guanajuato Mexico (11/05)
18. AGAFE, "Geometry of algebraic varieties" Ferrara, Italy, invited lecture (6/05)
19. Seventh international conference on Geometry, Integrability and Quantization, Varna, Bulgaria. (Course on exterior differential systems and geometry) (6/05)
20. Texas geometry and topology conference, TAMU (10/04)
21. XIV Coloquio Latinoamericano de algebra, La Falda, Argentina. Lecture and mini-course. (8/01)
22. IXth Oporto meeting on Geometry, Topology and Physics, Oporto Lecture series. (9/00)

### Lecture series and intensive courses (since 2000)

1. Scuola Matematica Inter-universitaria at Cortona, summer reasearch course *Tensors: Waring problems and Geometric Complexity theory* (11 hours, 7/12)
2. Nordfjordeid summer school, Norway Geometry of tensors and applications (8 hours 6/10)
3. GNSAGA lecture series (3 hours, 6/09), U. Firenze
4. MSRI summer graduate workshop, (5 hours, 07/08) *Geometry and Representation Theory of Tensors for Computer Science, Statistics, and other areas.*
5. UC Berkeley, Special day long seminar on representation theory and algebraic statistics (5/06)
6. CIMAT, Guanajuato, Mexico, lecture series on  $G$ -structures in projective geometry, (8/06).
7. Seoul National University, Seoul, Korea, lecture series on the rigidity of projective varieties (6/06)
8. Korean Institute for Advanced Study (KIAS), lecture series on Billiards and exterior differential systems (4/05)
9. Scuola Matematica Inter-universitaria at Cortona, summer reasearch course *Algebraic geometry: Exceptional groups and projective geometry* (11 hours, 7/03)
10. Collegio Docenti of the Ph.D. Consortium Milan-Trieste, graduate level course and research seminars (15 hours, 2/03)

## Other invited talks since 2000:

- Geometric Methods in Rep. Theory, UNC Chapel Hill (1/12)  
Algebraic geometry seminar, U. Montpellier (7/11)  
Seminar, Mittag-Leffler Institute, Stockholm (5/11)  
U. Chicago Statistics colloquium (2/11)  
Rice U., geometry seminar (1/10)  
U. Chicago Computer Science Dept. Colloquium (11/09)  
Colloquium and Geometry seminar, ANU, Canberra (8/09)  
UNC Chapel Hill Representation Theory Seminar (5/08)  
London geometry and topology seminar, Imperial College (9/07)  
Harvard-MIT algebraic geometry seminar (9/07)  
U. College, Cork, Ireland, colloquium and geometry seminar (9/07)  
U. Bologna, geometry seminar (7/07)  
UT Austin, geometry seminar (4/07)  
Univ. Utah, colloquium (10/06)  
SNU, Seoul, Korea, colloquium (6/06)  
AMS, special session on Grobner bases, San Francisco, CA (4/06)  
Univ. of Pennsylvania, Colloquium (11/05)  
Univ Texas at Austin, Geometry seminar (5/05)  
TAMU, Computer Science dept. seminar (3/05)  
MIT/Harvard algebraic geometry seminar (9/04)  
UIUC, Colloquium (3/04)  
Texas A&M, Colloquium and geometry seminar (2/04)  
Rutgers University geometry seminar (11/03)  
SU. Mass. Amhearst Valley geometry seminar (9/03)  
U. of Georgia, Athens, Representation theory seminar (10/03)  
Rutgers University, geometry seminar (11/02)  
Duke University, geometry seminar (11/02)  
Penn State, undergraduate colloquium (10/02)  
U. of Georgia, Athens, Representation theory seminar (10/02)  
Group actions, Schrodinger Inst., Vienna (10/01)  
Northeastern U., rep. theory seminar (5/01)  
Purdue University, colloquium (11/00)  
Cornell University, Ithaca, colloquium (9/00)  
U. of Debrecen, Debrecen, Hungary, colloquium (7/00)  
Mathematische Institut, Basel, Algebra seminar (6/00)  
Algebraic geometry seminar, Princeton U. (11/11)  
Colloquium, Linkoping U., Linkoping Sweden. (6/11)  
TAGS (graduate student talk), Rice U., Houston (4/11)  
UIC colloquium (3/10)  
WUSTL, St. Louis, Colloquium (12/09)  
U. Grenoble Geometry seminar (11/09)  
UC Irvine Geometry seminar, (6/08)  
Exterior Differentiay Systems Workshop, MSRI (5/08)  
Geometry day at Loughborough (9/07)  
Northeastern geometry-representation theory seminar (9/07)  
U. Firenze, geometry seminar (7/07)  
U. Grenoble, geometry seminar (7/07)  
Duke University, geometry seminar (10/06)  
KIAS, Seoul, Korea, geometry seminar (6/06)  
SIAM, mini-symposium on billiards and EDS, Boston (7/06)  
Univ. of Houston, Colloquium (1/06)  
Rice Univ., Colloquium (9/05)  
UIUC, geometry seminar (3/05)  
TAMU, Math-physics Harmonic analysis seminar (3/05)  
Univ. Fourier, Grenoble, Algebraic geometry seminar, (5/04)  
Georgia Southern colloquium (2/04)  
AIM workshop in computational algebraic statistics (12/03)  
Emory University colloquium (10/03)  
Harvard/MIT algebraic geometry seminar (9/03)  
Southeast geometry conference, College of Charleston (3/03)  
UNC, Chapel Hill, algebraic geometry seminar (11/02)  
Penn State, Colloquium (10/02)  
University of Warwick, Algebra seminar (10/02)  
University of Utah, colloquium (4/02)  
Northeastern U., colloquium (5/01)  
U. of Georgia, Athens, colloquium (2/01)  
Purdue University, geometry seminar (11/00)  
Cornell University, Ithaca, Lie theory seminar (9/00)  
Basel/Freibourg/Strasbourg Lie theory seminar (6/00)  
Jussieu, Paris, journée de la géometrie algebrique (6/00)