

TOMMASO DE FERNEX

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EDUCATION	July 2002	Ph.D. in Mathematics, University of Illinois at Chicago
	February 2001	Dottorato di Ricerca in Matematica, Università di Genova
	February 1996	Laurea in Matematica (summa cum laude), Università di Milano
APPOINTMENTS	07/17–06/19	Associate Department Chair, University of Utah
	07/14–present	Professor, University of Utah
	07/09–06/14	Associate Professor, University of Utah
	07/05–06/09	Assistant Professor, University of Utah
	08/02–07/05	T. H. Hildebrandt Research Assistant Professor, University of Michigan
VISITING POSITIONS	01/19–05/19	Research Professor, MSRI, Birational Geometry and Moduli Spaces
	05/11–06/11	Visiting Professor, École Normale Supérieure, Paris
	05/09–07/09	Visiting Scholar, Institut de Mathématiques de Jussieu
	01/09–04/09	Research Member, MSRI, Jumbo Program in Algebraic Geometry
	May 2006	Visiting Scholar, Università di Genova
	09/05–04/06	Member, Institute for Advanced Study
	09/99–12/99	Visiting Research Assistant, University of Hong Kong
DISTINCTIONS	class 2019	Fellow of the American Mathematical Society
	2012–2013	Simons Fellow in Mathematics
	2009	Fellowship, Fondation Sciences Mathématiques de Paris
	2005–2011	John E. and Marva M. Warnock Presidential Endowed Chair, University of Utah
	2005	Fellowship, Istituto Nazionale di Alta Matematica
	2002	Rackham Faculty Summer Fellowship, University of Michigan
	2002–2005	T. H. Hildebrandt Assistant Professorship, University of Michigan
	2000–2001	University Fellowship, University of Illinois at Chicago
	1996–2000	Doctoral Scholarship, Università di Genova
GRANTS	2020–2023	NSF Grant DMS-2001254, PI
	2019–2021	SB196 Math Teacher Preparation Grant, Office of the Commissioner, Utah System of Higher Education, PI
	2017–2020	NSF Grant DMS-1700769, PI

2015	NSF Grant 1500652, The Boot Camp for the 2015 Algebraic Geometry Summer Research Institute, Co-PI
2015	NSF Grant 1447423, 2015 AMS Summer Research Institute in Algebraic Geometry, Co-PI
2015	NSA Grant H98230-15-1-0225, AMS Summer Research Institute in Algebraic Geometry, PI
2014–2017	NSF Grant DMS-1402907, PI
2013–2018	NSF RTG Grant DMS-1246989, Algebraic Geometry and Topology at the University of Utah, Co-PI & Co-Director
2013–2016	NSF FRG Grant DMS-1265285, PI
2009–2014	NSF CAREER Grant DMS-0847059, PI
2005–2008	NSF Grant DMS-0548325, PI
2002–2005	Rackham Research Grant, University of Michigan

PUBLICATIONS

1. C. Chiu, T. de Fernex, and R. Docampo, On arc fibers of morphisms of schemes, submitted, [arXiv:2206.08060](#)
2. T. de Fernex and C. C. Lau, Motivic integration on Berkovich spaces over trivially valued fields, preprint, [arXiv:2103.01811](#)
3. T. de Fernex, Birational rigidity and K-stability of Fano hypersurfaces with ordinary double points, to appear in *Rend. Circ. Mat. Palermo*, special volume on “Rationality problems,” [arXiv:2111.09911](#)
4. C. Chiu, T. de Fernex, and R. Docampo, Embedding codimension of the space of arcs, *Forum Math. Pi* **10** (2022), e4 1–37
5. T. de Fernex and C. C. Lau, Extending rationally connected fibrations from ample subvarieties, to appear in *Manuscripta Math.*, [arXiv:2011.10567](#)
6. T. de Fernex and C. C. Lau, Grothendieck–Lefschetz for ample subvarieties, *Math. Z.* **300** (2022), 3319–3336, The geometry of algebraic varieties: special issue in honour of Olivier Debarre
7. T. de Fernex, Smooth solutions to the complex Plateau problem, *J. Differential Geom.* **118** (2021), 297–312
8. T. de Fernex and R. Docampo, Differentials on the arc space, *Duke Math. J.* **169** (2020), 353–396
9. T. de Fernex and R. Docampo, Nash blow-ups of jet schemes, *Ann. Inst. Fourier* **69** (2019), 2577–2588
10. T. de Fernex, L. Ein and S. Ishii, Jet closures and the local isomorphism problem, *J. Algebra* **501** (2018), 166–181
11. T. de Fernex, The arc space of an algebraic variety, *Algebraic Geometry: Salt Lake City 2015*, Proc. Symp. Pure Math., Vol. **97**, 2018.
12. T. de Fernex and Y.-C. Tu, Towards a link theoretic characterization of smoothness, *Math. Res. Lett.* **24** (2017), 1239–1262
13. T. de Fernex, Birational geometry of singular Fano hypersurfaces, *Ann. Sc. Norm. Super. Pisa, Cl. Sci. (5)* **17** (2017), 911–929
14. T. de Fernex, Colength of a product of ideals, in appendix to: J. Kollár and A. Némethi, Dufree’s conjecture on the signature of smoothings of surface singularities, *Ann. Sci. École Norm. Sup.* **50** (2017), 787–798
15. T. de Fernex, J. Kollár and C. Xu, The dual complex of singularities, in “Higher dimen-

- sional algebraic geometry” in honour of Professor Yujiro Kawamata’s 60th birthday, 103–130, *Adv. Stud. Pure Math.* Vol. 74, 2017.
16. T. de Fernex and R. Docampo, Terminal valuations and the Nash problem, *Invent. Math.* **203** (2016), 303–331
 17. T. de Fernex and M. Mustață, The volume of a set of arcs on a variety, *Rev. Roumaine Math. Pures Appl.* **60** (2015), 375–401, special issue in honor of Lucian Badescu’s 70th birthday
 18. T. de Fernex, R. Docampo, S. Takagi and K. Tucker, Comparing multiplier ideals to test ideals on numerically \mathbb{Q} -Gorenstein varieties, *Bull. London Math. Soc.* **47** (2015), 359–369
 19. S. Boucksom, T. de Fernex, C. Favre and S. Urbinati, Valuation spaces and multiplier ideals on singular varieties, in “Recent Advances in Algebraic Geometry,” a volume in honor of Rob Lazarsfeld’s 60th birthday, 29–51, *London Math. Soc. Lecture Note Series*, Cambridge University Press, 2015
 20. T. de Fernex, Fano hypersurfaces and their birational geometry, in “Automorphisms in Birational and Affine Geometry,” Levico Terme, Italy, October 2012, 103–120, *Springer Proc. Math. Stat.* Vol. 79, 2014.
 21. T. de Fernex and R. Docampo, Jacobian discrepancies and rational singularities, *J. Eur. Math. Soc. (JEMS)* **16** (2014), 165–199
 22. T. de Fernex, Three-dimensional counter-examples to the Nash problem, *Compositio Math.* **149** (2013), 1519–1534
 23. T. de Fernex, Birationally rigid hypersurfaces, *Invent. Math.* **192** (2013), 533–566
 24. T. de Fernex and D. Fusi, Rationality in families of threefolds, *Rend. Circ. Mat. Palermo* **62** (2013), 127–135
 25. S. Boucksom, T. de Fernex and C. Favre, The volume of an isolated singularity, *Duke Math. J.* **161** (2012), 1455–1520
 26. T. de Fernex and C. Hacon, Rigidity properties of Fano varieties, in Current Developments in Algebraic Geometry, MSRI Publications, Volume 59, 2011
 27. T. de Fernex and C. Hacon, Deformations of canonical pairs and Fano varieties, *J. reine angew. Math.* **651** (2011), 97–126
 28. T. de Fernex, L. Ein and M. Mustață, Log canonical thresholds on varieties with bounded singularities, in Classification of algebraic varieties, 221–257, *EMS Ser. Congr. Rep., Eur. Math. Soc., Zürich*, 2011
 29. T. de Fernex, L. Ein and M. Mustață, Shokurov’s ACC Conjecture for log canonical thresholds on smooth varieties, *Duke Math. J.* **152** (2010), 93–114
 30. T. de Fernex and L. Ein, A vanishing theorem for log canonical pairs, *Amer. J. Math.* **132** (2010), 1205–1221
 31. T. de Fernex and C. Hacon, Singularities on normal varieties, *Compositio Math.* **145** (2009), 393–414
 32. T. de Fernex and M. Mustață, Limits of log canonical thresholds, *Ann. Sci. Éc. Norm. Super.* **42** (2009), 493–517
 33. M. C. Beltrametti, T. de Fernex and A. Lanteri, Ample subvarieties and rationally connected fibrations, *Math. Ann.* **341** (2008), 897–926
 34. T. de Fernex, L. Ein and S. Ishii, Divisorial valuations via arcs, *Publ. Res. Inst. Math. Sci.* **44** (2008), 425–448, special issue dedicated to Professor H. Hironaka
 35. T. de Fernex, A. Küronya and R. Lazarsfeld, Higher cohomology of divisors on a projective variety, *Math. Ann.* **337** (2007), 443–455

36. T. de Fernex, E. Lupercio, T. Nevins and B. Uribe, Stringy Chern classes of singular varieties, *Adv. Math.* **208** (2007), 597–621
37. T. de Fernex, E. Lupercio, T. Nevins and B. Uribe, A localization principle for orbifold theories, in “Recent Developments in Algebraic Topology,” A. Adem et al. eds., Proceedings for the Conference in honor of the 70th birthday of S. Gitler, 113–133, *Contemp. Math.* **407**, Amer. Math. Soc., Providence, RI, 2006
38. T. de Fernex, Length, multiplicity, and multiplier ideals, *Trans. Amer. Math. Soc.* **358** (2006), 3717–3731
39. T. de Fernex and A. Lanteri, Bad loci of free linear systems, *Adv. Geom.* **6** (2006), 93–107
40. T. de Fernex, Negative curves on very general blow-ups of \mathbb{P}^2 , *Projective Varieties with Unexpected Properties*, a Volume in Memory of Giuseppe Veronese, 199–207, de Gruyter, Berlin, 2005
41. T. de Fernex, L. Ein and M. Mustață, Multiplicities and log canonical threshold, *J. Algebraic Geom.* **13** (2004), 603–615
42. T. de Fernex, On planar Cremona maps of prime order, *Nagoya Math. J.* **174** (2004), 1–28
43. T. de Fernex, L. Ein and M. Mustață, Bounds on log canonical thresholds with application to birational rigidity, *Math. Res. Lett.* **10** (2003), 219–236
44. T. de Fernex and L. Ein, Resolution of indeterminacy of pairs, *Algebraic Geometry*, a Volume in Memory of Paolo Francia, 165–177, de Gruyter, Berlin, 2002
45. T. de Fernex, Ample vector bundles and intrinsic quadric fibrations over irrational curves, *Matematiche (Catania)*, **55** (2000), 205–222
46. T. de Fernex and A. Lanteri, Ample vector bundles and del Pezzo manifolds. *Kodai Math. J.* **22** (1999), 85–100
47. T. de Fernex, Ample vector bundles with sections vanishing along conic fibrations over curves, *Collect. Math.* **49** (1998), 67–79

BOOKS EDITED

1. *Algebraic Geometry: Salt Lake City 2015* (T. de Fernex, B. Hassett, M. Mustață, M. Olsson, M. Popa, and R. Thomas, eds.), Proc. Symp. Pure Math., Vols. **97.1** and **97.2**, 2018
2. *Surveys on Recent Developments in Algebraic Geometry* (I. Coskun, T. de Fernex, and A. Gibney, eds.), Proc. Symp. Pure Math., Vol. **95**, 2017
3. *Local and global methods in algebraic geometry*, proceedings for the conference in honor of Lawrence Ein’s 60th birthday, Chicago, 2016 (N. Budur, T. de Fernex, R. Docampo, and K. Tucker, eds.), Contemp. Math., Vol. **712**, 2018

INVITED
CONFERENCE TALKS

1. Conference on “Singularities and Algebraic Geometry,” The University of Khanh Hoa, Vietnam, February 2023
2. Workshop on “Singularities in Algebraic Geometry,” University of the Balearic Islands, Palma de Mallorca, May 2022
3. Conference “Singularities in Positive Characteristic,” CIRM, Luminy, July 2021
4. Conference “Complex, Algebraic and Differential Geometry in Sardinia,” Villasimius, September 2020 (cancelled due to covid-19)
5. Workshop on “Topological and Analytic Methods in Singularity Theory,” CIMAT, Guanajuato, November 2019

6. Conference “The Geometry of Algebraic Varieties,” CIRM, Luminy, September 2019
7. Conference “Classical Algebraic Geometry,” University of Milano, July 2019
8. Special session on “Advances in Birational Geometry,” AMS Sectional Meeting, University of Arkansas, November 2018
9. Workshop on “Mathematics and Physics of F-theory,” Harvard University, September 2018
10. Conference “Differential, Algebraic and Topological Methods in Complex Algebraic Geometry,” Cetraro, September 2018
11. Conference “Classical algebraic geometry and related topics” in honor of Beltrametti’s 70th birthday, University of Genova, July 2018
12. Southern California Algebraic Geometry Seminar, University of Southern California, April 2018
13. Conference “Singularities and Algebraic Geometry,” Da Nang (Vietnam), January 2018
14. Conference “Higher dimensional algebraic geometry and characteristic p ,” CIRM, Luminy, September 2016
15. Conference “Local and global methods in algebraic geometry” in honor of Lawrence Ein’s 60th birthday, University of Illinois at Chicago, May 2016
16. AMS Summer Research Institute in Algebraic Geometry, University of Utah, July 2015
17. Oberwolfach Workshop “Algebraic Geometry,” Oberwolfach, March 2015
18. “Algebraic and Complex Geometry,” Satellite Conference of ICM 2014, KAIST (Korea), August 2014
19. Program “Complex Geometry,” Institute of Mathematical Science, Singapore, July–August 2013
20. Conference on “Motivic Invariants and Singularities,” Center for Mathematics at the University of Notre Dame, June 2013
21. “Recent Advances in Algebraic Geometry,” a conference in honor of Rob Lazarsfeld’s 60th birthday, University of Michigan, May 2013
22. Workshop on “The Commutative Algebra of Singularities in Birational Geometry: Multiplier Ideals, Jets, Valuations, and Positive Characteristic Methods,” MSRI, May 2013
23. Conference on “Groups of Automorphisms in Birational and Affine Geometry” CIRM (Levico Terme, Italy), October–November 2012
24. Texas Algebraic Geometry Symposium, University of Texas A&M, April 2012
25. Special session on “Algebraic Geometry: Singularities and Moduli,” AMS Meeting, University of Hawaii, March 2012
26. AIM Workshop on “Relating test ideals and multiplier ideals,” Palo Alto, August 2011
27. Western Algebraic Geometry Symposium, Stanford University, April 2011
28. Special session on “Singularities in Algebraic Geometry,” AMS Meeting, University of Notre Dame, November 2010
29. COW Seminar, Oxford University, October 2010
30. Congrès de Géométrie Algébrique Complexe, Institut Henri Poincaré, Paris, June–July 2010
31. Conference “Giornate di Geometria Algebraica ed Argomenti Correlati,” Gargnano (Italy), May 2010

32. Freiburg-Nancy-Strasbourg Joint Meeting, Université de Strasbourg, June 2009
33. “Projective Algebraic Geometry in Milano,” Conference in Honor of the 60th birthday of Antonio Lanteri. Università di Milano, June 2009
34. IAS/Park City Mathematics Institute (PCMI) Summer Session, “Analytic and Algebraic Geometry: Common Problems–Different Methods,” Park City, Utah, July 2008
35. American Mathematical Society/Sociedade Brasileira de Matematica, First Joint Meeting, IMPA, Rio de Janeiro, Brazil, June 2008
36. “Algebraic Geometry and Commutative Algebra,” A conference to celebrate Robin Hartshorne’s 70th birthday, University of Illinois at Chicago, April 2008
37. Special session on “Birational algebraic geometry,” Spring Central Section Meeting, Indiana University, April 2008
38. Workshop “Seminario di Natale,” Università di Milano, December 2007
39. Workshop on “Higher Dimensional Algebraic Geometry,” National Taiwan University, Taiwan, March 2007
40. Western Algebraic Geometry Symposium, University of Utah, November 2006
41. Special Session on “Birational geometry,” AMS Central Sectional Meeting, University of Cincinnati, October 2006
42. Eighth Meeting on Commutative Algebra and Algebraic Geometry, IMPA, Rio de Janeiro, Brazil, July 2006
43. Genova-Nice Meeting, Università di Genova, May 2006
44. BIRS Workshop, “Recent trends in higher dimensional geometry,” Banff, Canada, April 2006
45. JAMI Conference/Workshop 2006 on “Recent Developments in Higher Dimensional Algebraic Geometry,” Johns Hopkins University, March 2006
46. Conference on “Singularity theory and commutative ring theory,” Hamana-ko, Japan, September 2005
47. AGaFe 2005, Conference on “Geometry of algebraic varieties,” Università di Ferrara, June 2005
48. “Projective varieties with unexpected properties,” Conference for the 150th anniversary of the birth of Giuseppe Veronese, Università di Siena, June 2004
49. The UM/OSU Algebraic Geometry Workshop, Ohio State University, March 2004
50. Arithmetic and Algebraic Geometry Conference, University of Tokyo, January 2004
51. “Minimal Model Activity,” Special Year in Algebraic Geometry and Topology, Australian National University, Canberra, August 2003
52. Conference in Algebraic Geometry in memory of Paolo Francia, Università di Genova, September 2001
53. AGaFe 2001, School on “Birational and projective geometry of algebraic varieties,” University of Ferrara, September 2001
54. Convegno di Geometria Algebrica ed Argomenti Correlati, Gargnano (Italy), May 2000
55. Pragmatic 1998, School on “Linear systems and vanishing theorems,” Università di Catania, June 1998

COLLOQUIA &
SEMINAR TALKS

- | | |
|------|--|
| 2022 | Università di Roma Due–Tor Vergata, Caltech, University of Utah |
| 2021 | Zoom Algebraic Geometry (ZAG) seminar |
| 2020 | Stony Brook University, Princeton University, Institut de Mathématique de Jussieu, |

- Johns Hopkins University (expected), Princeton University (expected)
- 2019 University of Utah, Boise State University, Università di Ferrara
- 2018 Courant Institute, University of Vienna (*colloquium*), Università di Milano, Northwestern University, University of Utah
- 2017 University of Oklahoma (*colloquium*), University of Illinois at Chicago, Johns Hopkins University
- 2016 University of Michigan
- 2014 University of Leuven, Yale University, SUNY–Stony Brook
- 2013 University of Utah
- 2012 Ohio State University (*colloquium*), University of Notre Dame (*colloquium*), University of Illinois at Chicago, University of British Columbia, University of British Columbia (*colloquium*)
- 2011 Università di Milano, École Normale Supérieure, IMPA–Rio de Janeiro
- 2010 Institut de Mathématique de Toulouse, Institut Fourier, Università di Roma Tre, University of Illinois at Chicago, University of Cambridge, University of Warwick, Institut de Mathématique de Jussieu, University of Utah, Università di Milano, University of Chicago, Stanford University
- 2009 Princeton University, University of British Columbia, University of Michigan, Université de Nice Sophia-Antipolis, Imperial College, Università di Pavia, Notre Dame (*colloquium*), MSRI
- 2008 University of Utah, Universidade Federal de Pernambuco–Recife, IMPA–Rio de Janeiro, University of Arizona (*colloquium*), University of Utah, University of Illinois at Chicago, University of Utah.
- 2007 University of Utah, Notre Dame University, University of Illinois at Chicago, University of Utah, University of Chicago, Purdue University.
- 2006 Università di Roma Due–Tor Vergata, Università di Roma Tre, Università di Milano, Università di Genova, Università di Ferrara, University of Michigan
- 2005 Queen’s University, Harvard University, Columbia University, Institute for Advanced Study (*member seminar*), Princeton University, CIMAT–Guanaajuato, CINEVESTAV (*colloquium*), Università di Milano, SUNY–Stony Brook, Ohio State University (*colloquium*), Texas A&M University (*colloquium*), University of Utah, University of Utah (*colloquium*), University of California–Santa Barbara (*colloquium*), Johns Hopkins University, University of Pittsburgh (*colloquium*), University of Kansas (*colloquium*), University of Illinois at Urbana–Champaign (*colloquium*), University of Notre Dame (*colloquium*)
- 2004 University of Illinois at Urbana–Champaign, University of Michigan, Northwestern University, University of Wisconsin–Madison, University of Tokyo, Kyoto University
- 2003 Johns Hopkins University, Università di Genova, University of Michigan
- 2002 University of Michigan, Università di Genova, Johns Hopkins University, University of Michigan
- 1999 Hong Kong University
- 1998 Università di Milano, Università di Pavia

LECTURE SERIES &
MINI-COURSES

1. Lectures on “Rationality of complex algebraic varieties” (12 hours), Ph.D. course, Department of Mathematics, University of Rome II–Tor Vergata, May–June 2021.

2. Lectures on “Arc spaces and singularities in the minimal model program” (4 lectures), Conference “Young researchers in Singularity Theory,” Artin Approximation and Singularity Theory 2015, CIRM, Luminy, February 2015
3. Lectures on “Motivic integration” (3 lectures), Graduate and Postdoc Summer School on “Motivic Invariants and Singularities,” Mini-course on “Motivic integration,” Center for Mathematics at the University of Notre Dame, May 2013
4. Lectures on “The log canonical threshold” (2 lectures), School on “Birational Automorphisms of Varieties of General Type,” Freiburg, July 2011
5. Lectures on “The ACC conjecture for log canonical thresholds” (8 lectures), School on the Minimal Model Program and Shokurov’s ACC Conjecture, Università di Trento, July 2010
6. Lectures on “Shokurov’s ACC conjecture for log canonical thresholds” (6 lectures), Institut de Mathématique de Jussieu, June 2009
7. Lectures on “Deformation rigidity of Fano varieties” (3 lectures), Rencontre de Géométrie Algébrique et Géométrie Complexe, CIRM, Luminy, January 2009
8. Lectures on “Relative motivic integration, MacPherson’s transformation, and stringy Chern classes” (5 lectures), VIGRE Mini-Course on “Jet schemes and motivic integration,” University of Utah, May 2005

ORGANIZATIONAL
ACTIVITIES

1. RTG Mini-Conference on “Riemann surfaces and their moduli spaces,” University of Utah, February 2020 (with J. Chaika and P. Patel)
2. FRG Summer School and Workshop on “Higher dimensional algebraic geometry,” University of Utah, July 2016 (with M. Mustata and K. Schwede)
3. Conference “Local and global methods in algebraic geometry” in honor of Lawrence Ein’s 60th birthday, University of Illinois at Chicago, May 2016 (with N. Budur, R. Docampo, and K. Tucker)
4. RTG Undergraduate Summer Course on “Birational Geometry of Complex Surfaces,” University of Utah, May 2016 (with C. Hacon)
5. FRG Mini-Workshop on “Unramified cohomology, derived categories, and rationality,” University of Utah, February 2016 (with C. Hacon)
6. AMS Summer Research Institute in Algebraic Geometry, University of Utah, July 2015 (with B. Hassett, M. Mustață, M. Olsson, M. Popa, and R. Thomas)
7. Graduate Student Boot Camp in Algebraic Geometry, University of Utah, July 2015 (with I. Coskun, A. Gibney, and M. Lieblich)
8. FRG Mini-Workshop on “Foliations with effective anti-canonical bundle,” University of Utah, December 2014
9. FRG Mini-Workshop on “Cremona groups,” University of Utah, November 2013
10. Western Algebraic Geometry Symposium (WAGS), University of Utah, October 2012 (with C. Hacon)
11. AIM Program on “ACC and termination of flips,” Palo Alto, 2012 (with C. Hacon)
12. AMS Sectional Meeting, Special Session in Algebraic Geometry, University of Utah, October 2011 (with C. Hacon)
13. MRC 2010 Program on “Birational geometry and moduli spaces,” Snowbird, June 2010 (with D. Abramovich, I. Coskun, and A. Gibney)
14. VIGRE Mini-Course on “Moduli spaces and birational geometry,” University of Utah, June 2010 (with A. Bertram)

15. Baby Algebraic Geometry Seminar (group reading course for graduate students), University of Utah, Fall 2007, Fall 2009, Spring 2012, Spring 2015
16. Western Algebraic Geometry Seminar (WAGS), University of Utah, November 2006 (with A. Bertram and C. Hacon)
17. Special Topics in Algebraic Geometry Seminar, University of Michigan, Fall 2003, Winter 2004 and Fall 2004 (with T. Nevins and B. Uribe)

OUTREACH
ACTIVITIES

ACCESS mentor, University of Utah, Spring 2020.
 Math Circle (high school students), University of Utah, November 2009 and October 2019
 REU Independent Project supervisor, University of Utah, Spring–Summer 2012 and Spring–Summer 2016
 Talk at the High School Summer Program, University of Utah, Summer 2014
 Science Day at the University of Utah, workshop addressed to high school students, November 2011
 Undergraduate Colloquia, University of Utah, September 2011 and October 2009
 Early Research Direction talk, University of Utah, January 2007

SUPERVISING &
MENTORING

ACCESS	Hattie Beverly Butts (2020)
REU students	Daniel Ryou (2021) Scott Neville (2016) Isabelle Scott (2012) Michael Shrieve (2012)
honor thesis	Isabelle Scott (2013)
MS Math Teach	Elizabeth Lundin (2020–2021)
Ph.D. students	Shih-Hsin Wang (2022-present) Ziwen Zhu (2016–2020) Chung Ching Lau (2012–2017) Keyvan Yaghmayi (2011–2017) Davide Fusi (2007–2012)
postdocs	Harold Blum (2018–2020, NSF postdoc) Yu-Chao Tu (2014–2017, FRG postdoc) Yi Zhu (2012–2015) Kevin Tucker (2010–2011, NSF postdoc) Roi Docampo (2009–2012)
visiting scholars	Gebhard Martin (09/19–05/20) Mirko Mauri (04/18–05/18) Arnaud Eteve (02/18–05/18) Joonyeong Won (03/14–04/14) Olivier Benoist (09/12–11/12)

TEACHING

2005–present	Instructor, University of Utah
	– Introduction to Algebraic Geometry II (Math 6140), Spring 2023
	– REU Introduction to Algebraic and Tropical Curves (Math 4800), Fall 2022
	– Foundations of Analysis II (Math 3220), Fall 2022

- Introduction to Modern Algebra II (Math 5320), Spring 2022
- Introduction to Modern Algebra I (Math 5310), Fall 2021
- Foundations of Analysis II (Math 3220), Fall 2021
- Introduction to Algebraic Geometry II (Math 6140), Spring 2021
- Foundations of Analysis I (Math 3210), Spring 2021
- Topics in Algebraic Geometry (Math 7800), Spring 2020
- Introduction to Modern Algebra I (Math 5310), Fall 2017
- Foundations of Analysis II (Math 3220), Spring 2017
- Topics in Algebraic Geometry (Math 7800), Fall 2016
- Foundations of Analysis I (Math 3220), Fall 2016
- Foundations of Analysis II (Math 3220), Spring 2016
- REU Introduction to Tropical Geometry (Math 4800), Spring 2015
- Introduction to Modern Algebra I (Math 5310), Fall 2014
- Foundations of Analysis II (Math 3220), Fall 2014
- Topics in Algebraic Geometry (Math 7800), Spring 2014
- Linear Algebra (Math 2270), Spring 2014
- Introduction to Modern Algebra I (Math 5310), Fall 2013
- Topics in Algebraic Geometry (Math 7800), Spring 2012
- REU Introduction to Tropical Geometry (Math 4800), Fall 2011
- Foundations of Analysis I (Math 3210), Fall 2011
- Calculus III (Math 2210), Spring 2011
- Foundations of Analysis I (Math 3210), Spring 2010
- Topics in Algebraic Geometry (Math 7800), Spring 2010
- Foundations of Analysis I (Math 3210), Fall 2008
- Introduction to Algebraic Geometry I (Math 6130), Fall 2008
- Foundations of Analysis I (Math 3210), Spring 2008
- Introduction to Modern Algebra I (Math 5310), Fall 2007
- Introduction to Algebraic Geometry II (Math 6140), Spring 2007
- Topics in Algebraic Geometry (Math 7800), Fall 2006

2002–2005

Instructor, University of Michigan

- Introduction to Topology (Math 490), Winter 2005
- Introduction to Topology (Math 590), Fall 2004
- Linear Algebra (Math 217), Fall 2003
- Introduction to Modern Algebra (Math 412), Winter 2003
- Calculus I (Math 115), Fall 2002

2000–2002

Teaching Assistant, University of Illinois at Chicago

- Calculus I (Math 180), 2001-2002
- Calculus II (Math 181), 2000-2001

1997–1998

Teaching Assistant, Università dell’Insubria

- Geometria IV, Spring 1998
- Geometria III, Fall 1997
- Geometria II, Spring 1997

SERVICE	editorial	Editor of the Journal de l'École polytechnique (2013–present)
	referee	Acta Mathematica, Advances in Geometry, Advances in Mathematics, Advanced Studies in Pure Mathematics, Algebra and Number Theory, Algebraic Geometry, American Journal of Mathematics, Annales de l'Institut Fourier, Annales scientifiques de l'École normale supérieure, Annals of Mathematics, Bulletin de la Société Mathématique de France, Canadian Mathematical Bulletin, Central European Journal of Mathematics, Commentarii Mathematici Helvetici, Communications in Algebra, Compositio Mathematica, Comptes Rendus de l'Académie des Sciences, Documenta Mathematica, Duke Mathematical Journal, European Journal of Mathematics, Forum of Mathematics Sigma, Geometriae Dedicata, Indiana University Mathematical Journal, International Journal of Mathematics, International Mathematics Research Notices, Inventiones Mathematicae, Journal de l'École polytechnique, Journal für die reine und angewandte Mathematik, Journal of Algebra, Journal of Algebraic Geometry, Journal of Differential Geometry, Journal of Pure and Applied Algebra, Journal of the European Mathematical Society, Journal of the Institute of Mathematics of Jussieu, Journal of the London Mathematical Society, Manuscripta Mathematica, Mathematische Annalen, Mathematical Proceedings of the Cambridge Philosophical Society, Mathematical Research Letters, Mathematische Zeitschrift, Michigan Mathematical Journal, Proceedings of the American Mathematical Society, Proceedings of the London Mathematical Society, Publications Mathématiques de l'IHÉS, Revista Matemática Iberoamericana, Science China Mathematics, Selecta Mathematica, Tohoku Mathematical Journal, Transactions of the American Mathematical Society, conference proceedings
	grant reviewer	<ul style="list-style-type: none"> – European Research Council – Fellowship Programme INdAM-Cofund – National Research and Development Agency – FONDECYT – National Science Foundation – National Security Agency – Research Foundation – Flanders, FWO – Swiss National Science Foundation – U.S. Civilian Research & Development Foundation
	reviewer	Mathematical Reviews, Zentralblatt MATH
	academic	University of Utah: <ul style="list-style-type: none"> – Chair of the Retention, Promotion, and Tenure (RPT) Committee, 2022–2023 – Member of the selection committee for the Trevor James McMinn Professorship in Mathematics, 2022 – Member of the Equity Diversity and Inclusion Survey Subcommittee, 2022 – Member of the Instructor Hiring Committee, 2021–2022 – Chair of the Review and Promotions Committee for Career-Line Faculty and for Instructional Staff, 2021–2022 – Member of the Executive Committee, 2021–2023 – Member of the Endorsed Scholarship Endorsement Committee, 2021–2023

- Member of the Ad Hoc Retention, Promotion, and Tenure (RPT) Committee, 2021–2022
- Member of the College of Science Retention, Promotion, and Tenure (RPT) Committee, 2019–2020
- Member of the Career-Line Ad Hoc Hiring Committee, 2019–2020
- Center for Science and Mathematics Education Faculty Associate, 2019–2021
- Member of the University Advisory Council on Teacher Education, 2018–2020
- Member of the Executive Committee for the Math and Science Education faculty cluster search, 2018–2019
- Chair of the Mathematics Department subcommittee for the Math and Science Education faculty cluster search, 2018–2019
- Associate Department Chair, 2017–2019
- Chair of the Mathematics Education Committee, 2017–2020
- Ex-officio member of the Executive Committee, 2017–2019
- Ex-officio member of the Hiring Committee, 2017–2018
- Member of the selection committee for the Trevor James McMinn Professorship in Mathematics, 2017
- Chair of the Hiring Committee, 2016–2017
- College of Science Tenure-Line Academic Senate faculty representative, 2016–2019
- Graduate Research Fellowship committee member, 2016
- Coordinator of Foundation of Analysis (Math 3210 & 3220), 2015–2019
- Member of the Executive Committee, 2014–2016
- Coordinator of Linear Algebra (Math 2270) and Differential Equations (Math 2280), 2014–2015
- Instructor (postdoc) Hiring Committee, 2008–2009, 2010–2012, 2013–2014
- Co-chair of the Graduate Hiring Committee, 2009–2010
- Colloquium Chair, 2006–2008, 2009–2010