Curriculum Vitae for Daniel Katz

Contact Information	Department of Mathematics The University of Kansas 405 Snow Hall 1460 Jayhawk Blvd Lawrence, KS 66045 USA	Phone: (785) 864-7303 Fax: (785) 864-5255 E-mail: dlk53@ku.edu

Education

B.S. in Mathematics, The University of Texas at Austin, 1975
M.A. in Mathematics, Brandeis University, 1976
Ph.D. in Mathematics, The University of Texas at Austin, 1982

Professional Experience

1994-present, Professor, Department of Mathematics, University of Kansas
1987-1994, Associate Professor, Department of Mathematics, University of Kansas
1984-1987, Assistant Professor, Department of Mathematics, University of Kansas
1982-1984, Visiting Assistant Professor, Department of Mathematics, University of Oklahoma

Research Interests

Commutative Algebra
Homological Algebra
Algebraic Geometry

Publications

A note on asymptotic prime sequences, Proc. AMS 87 (1983), 415-418.

A criterion for complete intersections to be self-radical, Arch. Math., Vol. 42, 423-425 (1984). (Correction: Vol. 43, 574-575 (1984)).

On the integrity of ideal transforms, Houston Jl. Math., Vol. 10, No. 3 (1984), 415-421.

Prime divisors, asymptotic R-sequences and unmixed local rings, Journal of Algebra, 95 (1985), 59-71.

Essential prime divisors and sequences defined over an ideal (with L. J. Ratliff Jr.), Nagoya Jl. Math., Vol. 103 (1986) 39-66.

On the number of minimal prime ideals in the completion of a local domain, Rocky Mtn. Jl. Math., Vol. 16, No. 3 (1986) 575-578.

On the symbolic Rees ring of a primary ideal (with L.J. Ratliff, Jr.), Communications in Algebra, Vol. 14, No. 5 (1986), 959-970.

Projective equivalence and form rings (with L.J. Ratliff, Jr.), Math. Proc. Camb. Phil. Soc., Vol. 99 (1986), 447-456.

Two applications of asymptotic and essential sequences, Houston Jl. Math., Vol. 13, No. 1 (1987), 65-73.

Pole assignability in polynomial rings, power series rings, and Prufer domains (with J. Brewer and W. Ullery), Jl. of Algebra, Vol. 106,No. 1 (1987), 265-286.

On the pole assignability property over commutative rings (with J. Brewer and W. Ullery), Jl. of Pure and Applied Algebra, Vol. 47 (1987), 1-7.

On ideal transforms, Rees rings and Krull rings (with P. Eakin, W. Heinzer, and L.J. Ratliff, Jr.), Jl. of Algebra, Vol. 110, No. 2 (1987), 407-419.

Projective equivalence and asymptotic prime divisors (with S. McAdam, J. Okon and L.J. Ratliff Jr.), Jl. of Algebra, Vol. 109, No. 2 (1987), 468-478.

Two notes on ideal transforms (with L.J. Ratliff, Jr.), Math. Proc. Camb. Phil. Soc., Vol. 102 (1987), 389-397.

On the prime divisors of IJ when J is integrally closed (with L.J. Ratliff, Jr.), Arch. Math, Vol 50 (1988), 55-57.

Note on multiplicity, Proc. AMS, 104, No. 4 (1988), 1921-1026.

Two asymptotic functions (with S. McAdam), Communications in Algebra, Vol. 17, No. 5 (1989), 1069-1091.

Prime divisors and divisorial ideals (with S. McAdam and L.J. Ratliff, Jr.), Jl. of Pure and Applied Algebra, 58 (1989), 179-186.

Extended Rees algebras and mixed multiplicities (with J.K. Verma), Math. Zeitschrift, 202 (1989), 111-128.

Note on Projective modules, Mathematica Pannonica, Vol. 1, No. 2 (1990), 3-5.

Multiplicity of blow-ups associated to almost complete intersection space curves (with J.K. Verma), Comm. in Alg. Vol. 22, No. 2 (1994), 721-734.

Generating ideals up to projective equivalence, Proc. AMS, Vol. 120, No. 1 (1994), 79-83.

Torsion-free modules and syzygies, Mathematica Pannonica, Vol. 5, No. 1 (1994), 7-13.

On the relation type of large powers of an ideal (with B. Johnston), Mathematika, Vol. 41 (1994), 209-214.

Complexes acyclic up to integral closure, Math. Proc. Camb. Phil. Soc., Vol. 116 (1994), 401-414.

Hilbert functions of bigraded algebras (with J. K. Verma and S. Mandal), Commutative Algebra: September 1992, Trieste, World Scientific,Singapur, edited by A. Simis, N. Trung, and G. Valla (1994), 291-303. (Paper was refereed.)

Castelnuovo regularity and graded rings associated to an ideal (with B. Johnston), Proc. AMS, Vol. 123, No. 3 (1995), 727-734.

Reduction criteria for modules, Communications in Algebra, Vol. 17, No. 12 (1995), 4543-4548.

Prime ideals associated to symmetric powers of a module (with C. Naude), Communications in Algebra, Vol. 17, No. 12 (1995), 4549-4555.

Symmetric powers of complete modules over a two-dimensional regular local ring (with V. Kodiyalam), Trans. AMS, Vol. 349 (1997), 747-762.

Sequences and Ker($R[X_1, ..., X_g] \to R[tI]$) (with L. J. Ratliff, Jr.), Jl. Pure and Appl. Vol. 122 (1997), 265-275.

On the existence of maximal Cohen-Macaulay modules over pth root extensions, Proc. AMS, Vol. 127 (1999), No. 9, 2601-2609.

A linear function associated to asymptotic primes (with E. West), Proc. AMS, Vol. 132 (2004), 1589-1597.

Fitting ideals and finite projective dimension (with C. Huneke and D. Jorgensen), Math. Proc. Camb. Phil. Soc., Vol. 138 (2005),41-54.

Integral closure of ideals and annihilators of homology (with A. Corso, C. Huneke and W. Vasconcelos), Lecture Notes in Pure and Applied Mathematics, Vol 224 (2006), 33-48.

On the degree of Hilbert polynomials associated with the torsion functor (with E. Theodorescu), Proc. AMS, Vol 135 (2007), 3073-3082.

Hilbert polynomials for the extension functor (with E. Theodorescu), Jl. of Algebra, Vol 319 (2008), 2319-2336.

Asymptotic prime divisors of torsion free symmetric powers of modules (with G. Rice), Jl. of Algebra, Vol 319 (2008), 2209-2234.

On the support of local cohomology modules (with C. Huneke and T. Marley), Jl. of Algebra, Vol 322 (2009), 3194-3211.

Uniform equivalence of symbolic and adic topologies (with C. Huneke and J. Validashti), Illinois Jl. Math., Vol 53, No. 1 (2009), 325-338.

Multiplicities and Rees Valuations (with J. Validashti), Collectanea Mathematica, Vol 61, No. 1 (2010), 1-24.

Hilbert Polynomials for the contravariant extension functor (with A. Crabbe, J. Striuli, E. Theodorescu), Nagoya Math. Jl.,Vol. 198 (2010), 1-22.

Quasi-finite modules and asymptotic prime divisors (with T. Puthenpurakal), Jl. of Algebra, Vol 380 (2013), 18-29.

Uniform symbolic topologies and finite extensions (with C. Huneke and J. Validashti), Journal Pure and Applied Algebra, Vol 219 (2015), 543-550.

Uniform symbolic topologies in abelian extensions (with C. Huneke), Trans. AMS, Vol 372, No 3 (2019), 1735-1750.

Conductors in mixed characteristic, Jl of Algebra, Vol 571 (2021), 350-375.

On the integral closure of radical towers in mixed characteristic (with P. Sridhar), Jl of Commutative Algebra, Vol. 15 (2023), No. 4, 543-558.

PAPERS ACCEPTED

Uniform symbolic topologies and hypersurfaces (with C. Huneke), Acta Mathematica Vietnamica, to appear.

WORK IN PROGRESS

Maximal Cohen-Macaulay modules over generically cyclic extension of prime order in mixed characteristic (with P. Sridhar)

Rees valuations and multiplicities of graded algebras (with G. Serio)

CONFERENCE TALKS

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Columbia, Missouri, 1985.

Invited one-hour speaker, Florida Altantic University Conference on Pure and Applied Algebra, Boca Raton, Florida, 1986.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Knoxville, Tennessee, 1988.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Springfield, Missouri, 1992.

Invited speaker, special session in Commutative Algebra, national meeting of the AMS, San Antonio, Texas, 1993.

Invited speaker, special session in Commutative Algebra: Rees algebras and related topics, national meeting of the AMS, San Francisco, California, 1995.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Orlando, Florida, 1995.

Invited 30-minute speaker, Summer School on Commutative Algebra, Centre de Recerce Matematica, Belleterra, Spain, 1996.

Invited speaker, special session in Commutative Algebra, national meeting of the AMS, Seattle, Washington, 1996.

Invited speaker/participant (co-author presented paper), special session in Commutative Algebra, Columbia, Missouri, 1996.

Invited speaker, special session in Commutative Algebra and Algebraic Geometry, national meeting of the AMS, Baltimore, MD, 1998.

Invited forty-five minute talk, Conference on Algebraic Geometry, Columbia, MO, 1998.

Invited plenary talk, Conference on Commutative Algebra in Honor of the 80th Birthday of David Rees, Exeter, England, 1998.

Invited speaker, special session in Commutative Algebra and Algebraic Geometry, Joint International Meeting of the AMS and Sociedad Matematica Mexicana, Denton TX,

1999.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Salt Lake City, UT, 1999.

Invited speaker, Centennial Conference on Commutative Algebra, Lincoln, NA, 2000. (Not a plenary talk.)

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Ann Arbor, MI, 2002.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Orlando, FL, 2002.

Invited speaker, International Conference on Commutative Algebra, Lisbon, Portugal, 2003. (Not a plenary talk.)

Invited speaker, KUMUNU 5 Algebra Conference, Lawrence, KS, 2003.

Invited speaker, WiegandFest, Lincoln, NE, 2005. (Not a plenary talk.)

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Salt Lake City, Utah, 2006.

Invited speaker, special session in Local and Homological Methods in Commutative Algebra, regional meeting of the AMS, Urbana-Champagne, Il, 2009.

Invited participant, Kommutative Algebra, Mathematisches Forschungsinstitut Oberwolfach, Germany, 2009.

Invited speaker, special session on Commutative Algebra, regional meeting of the AMS, Albuquerque, NM, 2010.

Invited speaker, KUMUNU 11 Algebra Conference, Columbia MO, 2012.

Invited fifty minute speaker, Commutative Algebra Conference in Honor of Craig Huneke's 65th Birthday, Ann Arbor Michigan, 2016.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Charlottesville, Virginia, 2020. Sessions held remotely via Zoom.

Invited speaker, special session in Commutative Algebra, regional meeting of the AMS, Omaha, NE, 2023.

Conferences attended

Participant, special session in Algebra, regional meeting of the AMS, Norman, OK, 1983.

Participant, Conference in honor of Irving Kaplansky's Chicago retirement, Chicago, Illinois, 1984.

Participant, Microprogram in Commutative Algebra, MSRI, Berkeley, California 1987.

Participant, Midwest Conference on Commutative Algebra and Algebraic Geometry, Purdue University, 1989.

Participant, special session in Commutative Algebra, regional meeting of the AMS, Manhattan, Kansas, 1990.

Participant, Great Plains Workshop in Commutative Algebra, Lincoln, Nebraska, 1991.

Participant, AMS Summer Research Conference on Commutative Algebra, Mt. Holyoke, Massachusetts, 1992.

Participant, Algebraic Geometry: Interactions between Commutative Algebra and Algebraic Geometry, University of Missouri, 1993.

Participant, Midwest Conference on Algebraic Geometry, Notre Dame University, 1997.

Participant, MSRI Workshop, Commutative Algebra : Local and Birational Theory, Berkeley, CA, 2002.

Participant, MSRI Workshop, Commutative Algebra : Interactions with Homological Algebra and Representation Theory, Berkeley, CA, 2003.

Participant, KUMUNU 6 Algebra Conference, Lawrence, KS, 2004.

Participant, KUMUNU 7 Algebra Conference, Lawrence, KS 2006.

Participant, American Institute of Mathematics Workshop on Integral Closure, Multiplier Ideals and Core, 2006.

Participant, KUMUNU 8 Algebra Conference, Lincoln, NE, 2007.

Participant, Commutative Algebra : Connections with Algebraic Topology and representation Theory, Lincoln, NE, 2008.

Participant, KUMUNU 9 Algebra Conference, Lincoln, NE, 2008.

Participant, KUMUNU 10 Algebra Conference, Lincoln, NE, 2011.

Participant, KUMUNU 13 Algebra Conference, Columbia, MO, 2014.

Participant, KUMUNU 14 Algebra Conference, Columbia, MO, 2015.

Participant, KUMUNU 20 Algebra Conference, Lincoln, NE, Spring 2022

Participant, KUMUNU 21 Algebra Conference, Lincoln, NE Fall 2022

Conferences Organized

Co-organizer (with J. Lang), special session in Commutative Algebra, regional meeting of the AMS in Lawrence, Kansas, 1988.

Co-organizer (with S. Mandal), Great Plains Workshop in Commutative Algebra, Lawrence, Kansas, 1992.

Co-organizer (with C. Huneke), special session in Commutative Algebra, regional meeting of the AMS, Lawrence, KS, 2001.

Organizer, KUMUNU 4 Algebra Conference, Lawrence, KS, 2002.

Co-organizer (with H. Dao and C. Huneke), Special session on Topics in Commutative Algebra, regional meeting of the AMS, Lawrence, KS, 2012.

Co-organizer (with H. Dao, D. Hernandez, and E. Witt), KUMUNU 15 Algebra Conference, Lawrence, KS, 2016.

Co-organizer (with H. Dao), KUMUNU 16 Algebra Conference, Lawrence, KS, 2017.

Co-organizer (with H. Dao), KUMUNU 17 Algebra Conference, Lawrence, KS, 2018.

External Seminars and Colloquia

Invited one hour seminar talk, Purdue University Algebra Seminar, 1985.
Invited one hour colloquium talk, Florida State University, 1993.
Invited one hour talk, Florida State University Algebra Seminar, 1993.
Invited one hour colloquium talk, Florida Atlantic University, 1993.
Invited one hour talk, Florida Atlantic University Algebra Seminar, 1993.
Invited two one hour talks, Purdue University Algebra Seminar, 1997.
Invited one hour talk, Purdue University Algebra Seminar, 2006.
Invited one hour talk, KU Mathematics Faculty Seminar, 2008.
Invited one hour talk, University of Nebraska Algebra Seminar, Lincoln, NE, 2008.
Invited one hour talk, University of Nebraska Algebra Seminar, Lincoln, NE, 2010
Invited one hour colloquium talk, University of Nebraska, Lincoln, NE, 2010
Invited two one hour talks, Virtual Commutative Algebra Seminar, hosted by IIT Bombay, 2021

Other professional activities

Member of the American Mathematical Society

Referee for various mathematical journals including : *Journal of Algebra*, *Communications in Algebra*, *Journal of Pure and Applied Algebra*, *Proceedings of the AMS*, *Transactons of the AMS*, *Illinois Journal of Mathematics*, *American Journal of Mathematics*, *Advances in Mathematics*, *Journal of Commutative Algebra*.

Associate Editor, *Rocky Mountain Journal of Mathematics* (2007-2015).

Grants and Awards

New Faculty Award, University of Kansas, 1985.
General Research Fund, University of Kansas, l986-l989, 1993, 1994, 2002.
G. Baley Price Award for Excellence in Graduate Teaching, 1990, 1995, 2016.
CTE Award for excellence in graduate teaching, 1999.
Max Wells Teaching Award, 2010.
PI, NSF grant in support of KUMUNU 2016 (Co-PIs Dao, Hernandez, Witt)
Co-PI (with H. Dao), NSF grant in support of KUMUNU 2017.
Co-PI (with H. Dao), NSF grant in support of KUMUNU 2018.

Postdocs mentored

Jugal Verma (PhD Purdue University, 1987)
Vijay Kodiyalam (PhD Purdue University, 1993)
Javid Validashti (PhD Purdue University, 2007)
Pedro Lima (PhD University of Sao Paulo, 2012)

PhD Students Advised	Eric West, 2001. *Primes associated to multigraded modules* Emanoil Theodorescu, 2002. *Derived functors and Hilbert polynomials* Glenn Rice, 2005. *Asymptotic properties of torsion-free symmetric powers of modules* Grant Serio, 2016. *Multiplicities in commutative algebra* Prashanth Sridhar, 2021. *Finding maximal Cohen-Macaulay modules and reflexive modules*
PhD Final Exam Committees as non-chair	David Nelson, 1991 Shine Min Line, 1991 Yuanqian Chen, 1992 Catalin Ciuperca, 2001 Yongwei Yao, 2002 Giulio Caviglia, 2002 Neil Epstein, 2005 Bahman Engheta, 2005 Janet Striuli, 2005 Manoj Kummini, 2008 Ananth Hariharan, 2009 Branden Stone, 2012 Billy Sanders, 2015 Tony Se, 2016 Brent Holmes, 2018 Ken Duna 2019 Justin Lyle, 2020 Bibekananda Mishra, 2021 Dylan Beck, 2022 Souvik Dey, 2023
Recent PhD Comprehensive Oral Exam Committees	Ananth Hariharan, 2009 Brenden Stone, 2012 Billy Sanders, 2015 Tony Se, 2016 Brent Holmes, 2018 Ken Duna 2019 Justin Lyle, 2020 Bibekananda Mishra, 2020 Kevin Marshall, 2022 Dylan Beck, 2022 John Portin, 2022 Souvik Dey, 2023 Trevor Arrigoni, 2023
Masters Students Advised	Joseph Shaffer, 1986 Keith McGaffin, 1987 Eric West, 1993 Steve Abele, 1994 Stacey Longmire, 1995 Eva Thanheiser, 1998 Lauren Jacobs, 2000 Will Hickman, 2010

	David Jones, 2011
	Nick Packauskas, 2013
	Eric Huang, 2021
Recent MA Oral Exam Committees	Nathan Welch, 2013
	Zach Flores, 2014
	Luke Eichelberger, 2016
Undergraduate Honors Thesis Advised	Zach Nason, 2020
	Kashif Khan, 2024
Undergraduate Honors Thesis Committee	Triston Ruiseco, 2022
Departmental Committees	Graduate Studies
	Undergraduate Curriculum
	Honors
	Salary
	Library
	Hiring (Chair, 1997-1998, co-chair, 2007-2008)
	Organizational Committee for 1988 Regional Meeting of the AMS
	Promotion and Tenure (Chair, 1998-1999, 2005, 2019, co-chair, 2008)
	Evaluation of Teaching
	Director of Graduate Admissions (1991-1994)
	Director of Graduate Studies (994-1997, 2010-2012)
	Departmental Self Study Committee (1995 and 2016)
	Bischoff Search Committee
	Research Environment
	Executive Committee
	By-laws Committee (Chair, 2022-2024)
	External Review Response Committee (Fall 2011)
	Interim Departmental Chair, Spring 2012
	Departmental Chair, AY 2012-2017
	Progress Towards Tenure Review (Chair, AY 2017-2018 and AY 2018-2020)
	Nominating Committee
College and University Committees	Selection Committee for Undergraduate Research Awards (1995-2003)
	Selection Committee for Dissertation Fellowships (1996-1997)
	CLAS Committee on Graduate Studies (2010-2012)
	New KU Core Curriculum Goal 1 Satellite Committee (Fall 2011)
	Member of College Academic Council (Fall 2014-Spring 2017)
	Provost's Advisory Committee (AY 2014-2015)
	CLAS Dean's Cabinet (AY 2014-2015)
	CLAS Faculty Mentor (AY 2017-2018)
	University Core Curriculum Committee (Fall 2021 - Spring 2024)
Courses taught at KU	Math 105, Introduction to Topics in Mathematics
	Math 111, Linear Algebra
	Math 115, Calculus I

Math 116, Calculus II
Math 121, Calculus I
Math 122, Calculus II
Math 127, Calculus III
Math 142, Honors Calculus II
Math 143, Honors Calculus III
Math 147, Honors Calculus III
Math 223, Vector Calculus
Math 243, Honors Vector Calculus
Math 290, Elementary Linear Algebra
Math 365, Elementary Statistics
Math 450, Mathematical Foundations of Computer Science
Math 500, Intermediate Analysis
Math 526, Applied Statistics I
Math 540, Number Theory
Math 558, Introductory Modern Algebra
Math 590, Linear Algebra
Math 790, Linear Algebra II
Math 791, Modern Algebra I
Math 792, Modern Algebra II
Math 830, Abstract Algebra I
Math 831, Abstract Algebra II
Math 910, Algebraic Curves
Math 915, Introduction to Homological Algebra
Math 996, Various advanced topics in algebra