CURRICULUM VITAE OF: Shashikant B. Mulay

DEGREES: Ph.D., Purdue University, West Lafayette, Indiana, USA (1982)

PROFESSIONAL ENGAGEMENTS:

1. Teaching Assistant, Dept. of Mathematics, Purdue University, West Lafayette, Indiana, August 1977 - January 1981.
2. NSF Research Fellow, Dept. of Mathematics, Purdue University, West Lafayette, Indiana, August 1981- May 1982.
3. Research Associate, on the research project U.G.C. No. F. 8-2/80 (SR-III) titled "Study of Problems in Algebraic Geometry" at Poona, India, August 10, 1983 - March 15, 1984.
4. Visiting Assistant Professor, Max Plank Institute (Math.) Bonn, West Germany, June 1985.
5. Visiting Assistant Professor, MSRI Berkeley, CA, June - July 1987.
6. Visiting Assistant Professor, Department of Mathematics, University of Kentucky, Lexington, KY; Spring 1988.
7. Assistant Professor, Dept. of Mathematics, University of Tennessee, Knoxville, TN, September 1982 - September 1988.
8. Associate Professor, Dept. of Mathematics, University of Tennessee, Knoxville, TN, September 1988 - 1998.
9. Visiting Associate Professor, Department of Mathematics POSTECH, Pohang, South Korea; Spring 1993.
10. Visiting Scholar, Department of Mathematics, Purdue University, West Lafayette, Indiana; Fall 1993.
11. Visiting Professor, Department of Mathematics POSTECH, Pohang, South Korea; Spring 2006.

PUBLICATIONS:

43. ——, "Algebraic-integer valued polynomials" Journal of Number Theory, 240, 490–521. 2022

42. ——, "On planar embeddings of psuedoplanar affine curves of genus ≤ 1." Journal of Algebra, 577, 32–44. 2021.

41. ——, "Semi-invariants of binary forms and symmetrized graph-monomials", Enumerative Combinatorics and Applications, Vol.1, No. 3, S2R18, 2021.

40. ——, J. Quinn, M. Shattuck, "An algebraic approach to Electron Interactions in quantum Hall systems", MPAG, 24, no. 2, 26 pp., 2021.

39. ——, J. Quinn, M. Shattuck, "An algebraic approach to FQHE variational wave functions", MPAG, 22(2), 25pp, 2019.

38. ——, Carl Wagner, "Statistics on multisets", Math. Archives, (arXiv:1808.08906) 2018.

37. ——, J. Quinn, M. Shattuck, "Strong Fermion Interactions in Fractional Quantum Hall States", Physics Condensed Matter Physics, Springer Series in Solid-State Sciences, Vol. 193, (2018) ISBN 978-3-030-00494-1.

36. ——, J. Quinn, M. Shattuck, "Correlation diagrams: an intuitive approach to correlations in quantum Hall systems" Journal of Physics: Series C, 702 (2016), (012007 - 1) -(012007 - 9).

35. ——, J. Quinn, M. Shattuck, "A Generalized Polynomial Identity Arising from Quantum Mechanics", Applications and Applied Mathematics, Vol. 11, Issue 2, (2016), 576 - 584.

34. ——, "On orbit-closures of groups", Journal of Algebra and its Applications, Vol. 14, No. 9 (2015), (1540008-1)-(1540008-10).

33. ——, A. Sathaye, "Shreeram Abhyankar, July 22, 1930 - November 2, 2012", Notices of AMS (Nov 2014).

32. ——, "Formal functions on prevalued domains", Journal of Algebra, 390 (2013), 298 - 324.

31. ——, M. Shattuck, T. Mansour, "A general two-term recurrence and its solution", European Journal of Combinatorics 33 (2012), 20 - 26.

30. ——, M. Spindler, "The positive discriminant case of Nagell's theorem for certain cubic orders", J. Number Theory 131, no. 3 (2011), 470 – 486.

29. ——, J. Beers et al, "Fundamentality of a cubic unit u for Z[u]", Mathematics of Computation, July (2010), 1 - 15.

28. ——, "Schubert Varieties with inequidimensional singular locus", Commutative Algebra and Applications, De Gruyter (2009), 313 - 320.

27. ——, B. G. Kang, "A generalized principle ideal theorem", J. Pure and Applied Alg. 211 (2007), 51 - 54.

26. ——, "Polynomial-mappings and M-equivalence", J. Alg., 302 (2006) 862 - 880.

25. ——, "On Isometric Actions", Bull. Austral. Math. Soc. 74 (2006), no. 2, 247 - 262.

24. ——, D. F. Anderson, "On the diameter and girth of a zero-divisor graph", J. Pure and Applied Alg. 210 (2007) 543 - 550.

23. ——, "Rings having zero-divisor graphs of small diameter or large girth ", Bull. Austral. Math. Soc.72 (2005), no. 3, 481 - 490

22. ——, Y. Kachi, "Local-to-Global correspondence in Algebraic Geometry", The Fano Conference, 485–514, Univ. Torino, Turin, 2004.

21. ——, "Abstract Embeddings of Concrete Matrix-Groups", Alg. Arith. Geom. Appl., Nov. 2003 , 639 - 667

20. —, "Cycles and Symmetries of Zero-Divisors", Communications in Algebra, vol 30, no. 7, 2002, 3533-3558

19. —, C. Wagner, "Verifying the Independence of Partitions of Probability Space", Bulletin of Australian Mathematical Society, vol. 61 (2000), 263-266.

18. —, "Classification of Plane Cubic Curves", Advances in Commutative Ring Theory, vol 205, 1999, 461 - 482.

17. —, "Integer-Valued Polynomials in Several Variables", Communications in Algebra, 1999, vol 27, no 5, 2409 - 2423.

16. —, C. Wagner, "Finitary Bases and Formal Generating Functions", Discrete Mathematics 190 (1998) 177-189.

15. —, "Intersections of Schubert Varieties", Journal of Algebra, 186, 1996, 661 - 676.

14. —, G. Baker, "Geometric and Analytical Aspects of Anyons" International Journal of Theoretical Physics, Vol. 34, no. 12, 1995, 2435 - 2451.

13. —, G. Baker, "Geometric and Analytical Problems Posed by the Theory of Anyons", Differential Geometry, Hamiltonian Systems and Operator Theory, Proceedings of The Conference in Honor of Martin Aub, 1995, 41 - 67.

12. —, "On Integer-Valued Polynomials", Zero-Dimensional Rings, Marcel Dekker, 1995, 331 - 345.

11. ——, "Abhyankar's Work on Desingularization", Algebraic Geometry and Its Applications, Springer-Verlag, 1994, 153 - 160.

10. —, G. Baker, G. Canright, and C. Sundberg "On the spectral Problem for Anyons", Communications in Math. Physics, 153, 1993, 277 - 295.

9. ——, "Determinantal Loci and the Flag Variety", Advances in Mathematics, vol. 74, no. 1, 1989, 1-30.

8. —— and David F. Anderson, "Non-catenary Factorial Domains", Communications in Algebra, Vol. 17, No. 5, 1989, 1179 - 1185.

7. —— and David E. Dobbs, David F. Anderson, Salah Kabbaj, "Universally Catenarian Domains of D+M Type", Proc. Amer. Math. Soc., Vol. 104, No. 2, October 1988, 378-384.

6. —— and David E. Dobbs and V. Barucci, "Integrally Closed Factor Domains", Bull. Austral. Math. Soc., Vol. 37, No. 3, June 1988, 353 - 366.

5. —— and David E. Dobbs, "Flat Underrings", Archive fur Mathematik, Vol. 50, 1988, 337 - 341 .

4. ——- and David E. Dobbs, "Domains Integral over each underring", Tokyo J. Math, vol. 10, no. 2, 1987, 317 - 325 .

3. ——-, "Remarks on Difference-Polynomials" Bulletin of London Mathematical Society, 17, 1985, 539 - 544.

2. ——-, "Equimultiplicity / hyperplanarity," Proceedings of the A.M.S., Vol. 89, No. 3, November 1983, 407-413.

1. ——-, "Modification of a local ring by quadratic transformations," Journal of Algebra, Vol. 86, January 1984, 141-149.

EDITORIAL WORK:

1. ——, Y. Kachi, P. Tzermias, "Recent Progress in Arithmetic and Algebraic Geometry", Cont. Math. 386, American Math. Soc.(2005)

PROFESSIONAL SERVICES: (Recent)

- **Reviewing**: Math Reviews.
- **Editor (Alg.)**: Bulletin of Korean Mathematical Society. (2012 -)
- **Referee-ing (2019-)**: Journal of Pure and Applied Algebra, Proceedings of AMS, Bulletin of Korean Mathematical Society, Bulletin of Belgian Math. Soc., Note Mathemtici.

THESES AND DISSERTATIONS DIRECTED:

- 1991 Reid davis, (member of the Ph. D. committee).
- 1992 Kathy Macko, (thesis director, MS Thesis).

- 1996 Mark Lancaster (member of the MS committee).
- 1998 Kim hwan Koo (member of the Ph. D. committee).
- 1999 Ron Hagan (member of the MS committee).
- 1999 Pat Kiehne (member of the Ph.D. committee).
- 2001 Shane Redmond (member of the Ph.D. committee).
- 2004 John Iskra (Thesis adviser, Ph. D. Thesis).
- 2008 John Lagrange (member of the Ph. D. committee).
- 2010 Jason Laska (member of the Ph. D. committee).
- 2010 Brian Irick (member of the Ph. D. committee).
- 2010 Masato Kobayashi (Thesis adviser, Ph. D. thesis).
- 2010 Dustin Pierce (member of the MS committee).
- 2011 Jacob Ogle (Thesis adviser, Ph. D. Thesis).
- 2011 Kristin Mcnamara (member of the MS committee).
- 2013 Ashely Rand (member of Ph. D. committee).
- 2013 Joshua Hyatt (member of the MS committee).
- 2014 Jesse Smith (member of Ph. D. committee).
- 2015 Elizabeth Lewis (member of Ph. D. committee).
- 2016 Dylan Walker (member of the MS committee).
- 2017 Daren Weber (member of the Ph. D. committee).
- 2018 Mark Bly (Thesis adviser, Ph. D. Thesis).
- 2019 Delong Li (member of the Ph. D. committee).
- 2019 Margaret Wieczorek (member of the Ph. D. committee).
- 2022 Dony Varghese (member of the Ph. D. committee).