

# Publication List

Luis Núñez-Betancourt

## Published or accepted:

1. “Bernstein-Sato polynomial and related invariants for meromorphic functions” (with Josep Àlvarez Montaner, Manuel González Villa y Edwin León-Cardenal). accepted in **Trans. Amer. Math. Soc.**
2. “Blowup algebras of determinantal ideals in prime characteristic” (with Alessandro De Stefani and Jonathan Montaño), **J. Lond. Math. Soc.**, , 110 (2024), No. 2, Paper No. e12969, 50 pages.
3. “Bernstein’s inequality and holonomicity for certain singular rings” (with Josep Àlvarez Montaner, Daniel J. Hernández, Jack Jeffries, Pedro Teixeira, and Emily E. Witt), **Int. Math. Res. Not. IMRN**, 2024, No. 20, 13127-13179.
4. “Nash blowups of toric varieties in prime characteristic” (with Daniel Duarte and Jack Jeffries). **Collect. Math.**, 75 (2024), No. 3, 629-637.
5. “Regularity index of the generalized minimum distance function” (with Carlos Espinosa-Valdéz, and Yuriko Pitones), **J. Pure Appl. Algebra**, 228 (2024), No. 5, Paper No. 107567.
6. “Purity of monoids and characteristic-free splittings in semigroup rings” (with Alessandro De Stefani and Jonathan Montaño), **Math. Z.**, 305 (2023), No. 2, Paper No. 31.
7. “Bernstein-Sato theory for singular rings in positive characteristic” (with Jack Jeffries and Eamon Quinlan Gallego), **Trans. Amer. Math. Soc.** 376 (2023), No. 7, 5123-5180.
8. “Frobenius methods in combinatorics” (with Alessandro De Stefani and Jonathan Montaño), **São Paulo J. Math. Sci.** 17 (2023), No. 1, 387-429.
9. “Poincaré series of multiplier and test ideals” (with Josep Àlvarez Montaner), **Rev. Mat. Iberoam.** 38 (2022), No. 6, 1993-2009.
10. “F-thresholds and test ideals of Thom-Sebastiani-Type polynomials” (with Delio Jaramillo and Manuel González Villa), **Proc. Amer. Soc.** 150 (2022), No. 9, 3739-3755.
11. “Bernstein-Sato polynomials in commutative algebra” (con Josep Àlvarez Montaner, and Jack Jeffries), **Commutative Algebra**, 1-76, Springer, Cham, [2021].
12. “Functional equations,  $V$ -filtrations, and multiplier ideals of direct summands ” (with Josep Àlvarez Montaner, Daniel J. Hernández, Jack Jeffries, Pedro Teixeira and Emily E. Witt), **Commun. Contemp. Math.** 24 (2022), no. 10, Paper No. 2150083, 47 pages.
13. “Connectedness of square-free Groebner Deformations” (with Lilia Alanís-López and Pedro Ramírez-Moreno), **Proc. Amer. Math. Soc.** 150 (2022), No. 4, 1405-1419.
14. “Nash blowups in prime characteristic” (with Daniel Duarte), **Rev. Mat. Iberoam.** 38 (2022), No. 1, 257-267.
15. “F-volumes” (with Wágner Badilla-Céspedes and Sandra Rodríguez-Villalobos), **J. Algebra**, 595 (2022), 14-37.

16. "Bounds for the minimum distance function" (with Yuriko Pitones, and Rafael H. Villarreal), **An. Ştiinţ. Univ. "Ovidius" Constanţa Ser. Mat.**, (2021), No. 3, 229-242.
17. "Higher Nash blowups of normal toric varieties in prime characteristic" (with Daniel Duarte), **Tohoku Math. J.**, (2) 73 (2021), No. 3, 449-462.
18. "Splittings and symbolic powers of square-free monomial Ideals" (with Jonathan Montaño), **Int. Math. Res. Not. IMRN**, (2021), No. 3, 2304-2320.
19. "Local cohomology and Lyubeznik numbers of  $F$ -pure rings" (with Alessandro De Stefani, and Eloísa Grifo), **J. Algebra**, Vol. 571, (2021), 316-338.
20. "Q-Hilbert functions of multiplier and test ideals", (con Josep Àlvarez Montaner). Extended abstracts GEOMVAP 2019-geometry, topology, algebra, and applications; women in geometry and topology, 1 – 6, **Trends Math. Res. Perspect. CRM Barc.**, 15, Birkhäuser/Springer, Cham, (2021).
21. " $b$ -vectors of chordal graphs" (with Luis Pedro Montejano), **J. Commut. Algebra**. Vol. 12 (2020), No. 4, 539-557.
22. "Hilbert-Kunz multiplicities and  $F$ -thresholds" (with Ilya Smirnov), **Bol. Soc. Mat. Mex. (3)**, Vol. 26 (2020), No. 1, 15–25.
23. "Quantifying singularities with differential operators" (with Holger Brenner, and Jack Jeffries), **Adv. Math.**, Vol. 358 (2019), No. 106843, 89 pp.
24. "Connectedness and Lyubeznik numbers" (with Sandra Spiroff and Emily E. Witt), **Int. Math. Res. Not. IMRN**, (2019), No. 13, 4233-4259.
25. "Lyubeznik numbers and injective dimension of local cohomology modules" (with Daniel J. Hernández, Felipe Pérez and Emily E. Witt), **Trans. Amer. Math. Soc.**, Vol. 371 (2019), No. 11, 7533-7557.
26. "Cohomological dimension, Lyubeznik numbers, and connectivity in mixed characteristic" (with Daniel J. Hernández, Felipe Pérez, and Emily E. Witt), **J. Algebra**, Vol. 514 (2018) 442–467.
27. "Symbolic powers of ideals" (with Hailong Dao, Alessandro De Stefani, Craig Huneke and Eloísa Grifo), Singularities and foliations. geometry, topology and applications, 387-432, **Springer Proc. Math. Stat.**, 222 (2018), Springer, Cham.
28. "On the existence of  $F$ -thresholds and related limits" (with Alessandro De Stefani and Felipe Pérez), **Trans. Amer. Math. Soc.**, Vol. 370 (2018), No. 9, 6629-6650.
29. "Footprint and minimum distance functions" (with Yuriko Pitones and Rafael Heraclio Villarreal), **Commun. Korean Math. Soc**, Vol. 33 (2018), No. 1, 85–101.
30. "Local  $m$ -adic constancy of  $F$ -pure thresholds and test ideals for hypersurfaces with isolated singularities" (with Daniel J. Hernández and Emily E. Witt), **Math. Proc. Cambridge Philos. Soc.**, Vol. 164 (2018), No. 2, 285-295.
31. " $F$ -thresholds of graded rings" (with Alessandro De Stefani), **Nagoya Math. J.**, Vol. 229 (2018), 141-168.
32. "D-modules, Bernstein-Sato polynomials, and  $F$ -invariants of direct summands" (with Josep Àlvarez-Montaner and Craig Huneke), **Adv. Math.**, Vol. 321 (2017) 298-325.
33. "Support of local cohomology over hypersurfaces and rings with FFRT" (with Mel Hochster), **Math. Res. Lett.**, Vol. 24 (2017), 401–420.
34. "Graph connectivity and binomial edge ideals" (with Arindam Banerjee), **Proc. Amer. Math. Soc.**, Vol. 145 (2017), No. 2, 487-499.

35. “On the hyperhomology of the small gobelin for codimension 2” (with Xavier Gómez-Mont), **Bol. Soc. Mat. Mex. (3)**, Vol. 23 (2017), No. 2, 623–651.
36. “Frobenius Betti numbers and modules of finite projective dimension” (with Alessandro De Stefani and Craig Huneke), **J. Commut. Algebra**, Vol. 9 (2017), No. 4, 455-490.
37. “F-pure thresholds of homogeneous polynomials” (with Daniel J. Hernández, Emily E. Witt and Wenliang Zhang), **Michigan Math. J.**, 65 (2016), No. 1, 57-87.
38. “A survey on the Lyubeznik numbers” (with Emily E. Witt and Wenliang Zhang), **ontemp. Math., 657, Aportaciones Mat.** Vol. 657 (2016), 154-181.
39. “A sufficient condition for strong F-regularity” (with Alessandro De Stefani), **Proc. Amer. Math. Soc.**, Vol. 144 (2016), No. 1, 21-29.
40. “F-jumping and F-Jacobian ideals for hypersurfaces” (with Felipe Pérez), **J. Pure Appl. Algebra**, Vol. 220 (2016), Issue 1, 292-318.
41. “Properties of Lyubeznik numbers under localization and polarization” (with Arindam Banerjee and Kohji Yanagawa), **J. Pure Appl. Algebra**, Vol. 219 (2015), No. 11, 4872-4888.
42. “Generalized Lyubeznik numbers” (with Emily E. Witt), **Nagoya Math. J.**, Vol. 215 (2014), 168-202.
43. “Associated primes of local cohomology of flat extensions with regular fibers and  $\Sigma$ -finite D-modules”, **J. Algebra**, Vol. 399 (2014), 770-781.
44. “Lyubeznik numbers in mixed characteristic” (with Emily E. Witt), **Math. Res. Lett.**, Vol. 20, (2013), No. 6, 1125-1143.
45. “Local cohomology modules of polynomial or power series rings over rings of small dimension”, **Illinois J. Math.**, Volume 57 (2013), No. 1, 279-294.
46. “On certain rings of differentiable type and finiteness properties of local cohomology”, **J. Algebra**, Volume 379 (2013), 1-10.
47. “Local cohomology properties of direct summands”, **J. Pure Appl. Algebra**, Vol. 216 (2012), Issue 10, 2137-2140.
48. “Ideals with Larger Projective Dimension and Regularity” (with Jesse Beder, Jason McCullough, Alexandra Seceleanu, Bart Snapp and Branden Stone), **J. Symbolic Comput.**, Vol. 46 (2011), Issue 10, 1105-1113.

#### Submitted:

49. “Jumping numbers of F-pure submodules” (with Alessandro De Stefani, Daniel J. Henández, and Emily E. Witt).
50. “Ladder determinantal varieties and their symbolic blowups” (with Alessandro De Stefani, Jonathan Montaño, Lisa Seccia, and Matteo Varbaro), preprint available at arXiv:2305.18167 [math.CA].
51. “The defect of the F-pure threshold” (with Alessandro De Stefani and Ilya Smirnov), preprint available at arXiv:2501.13613 [math.CA].
52. “F-singularities of polynomials with square-free support” (with Aldo Conca, Alessandro De Stefani and Ilya Smirnov), preprint available at arXiv:2501.16198 [math.CA].