## Karl Schwede - Biographical Sketch

Professional Preparation	Bellevue Community College, Arts and Sciences	A.A.S., June 1997
	Whitman College, Mathematics	B.A., June 1999
	University of Washington, Mathematics	Ph.D., August 2006
	University of Michigan, $Postdoc$	Sept. 2006–2010
Appointments	University of Utah, Salt Lake City UT Professor	Fall 2018 -present
	University of Utah, Salt Lake City UT Associate Professor	Fall 2014 -Sum. 2018
	<b>The Pennsylvania State University</b> , University Park PA Assistant Professor	Winter 2011 -Sum. 2014
	University of Utah, Salt Lake City UT Visiting Assistant Professor	Fall 2010
	MSRI, Berkeley CA Research Member	Winter 2009, Spring 2013, Spring 2019 Spring 2024
	University of Michigan, Ann Arbor MI Postdoctoral Assistant Professor / Research Fellow	Fall 2006 -Spring 2010
	University of Washington, Seattle WA Teaching Assistant and Instructor	2000–2006

## PUBLICATIONS MOST RELATED TO PROJECT

- 1. L. Ma, K. Schwede, Perfectoid multiplier/test ideals in regular rings and bounds on symbolic powers. Invent. Math. 214 (2018), no. 2, 913–955.
- 2. J. Carvajal-Rojas, K. Schwede, K. Tucker, Fundamental groups of F-regular singularities via F-signature. Ann. Sci. Éc. Norm. Supér. (4) 51 (2018), no. 4, 993–1016.
- **3.** L. Ma, K. Schwede, Singularities in mixed characteristic via big Cohen-Macaulay algebras. Duke Math. J. 170 (2021), no. 13, 2815–2890.
- 4. B. Bhatt, L. Ma, K. Schwede, Z. Patakfalvi, K. Tucker, J. Waldron, J. Witaszek, Globally +-regular varieties and the minimal model program for threefolds in mixed characteristic. Publ. Math. Inst. Hautes Études Sci.138(2023), 69-227.
- 5. H. Cai, S. Lee, L. Ma, K. Schwede, K. Tucker, Perfectoid signature, perfectoid Hilbert-Kunz multiplicity, and an application to local fundamental groups. Submitted (2022), arXiv:2209.04046, 76 pages.

## OTHER RELEVANT PUBLICATIONS

1. K. Schwede, A canonical linear system associated to adjoint divisors in characteristic p > 0. J. Reine Angew. Math. 696 (2014), 69–87.

OTHER
RELEVANT
PUBLICATIONS
continued

- 2. F-adjunction. Algebra & Number Theory. 3, (2009), no. 8, 907–950.
- 3. Test ideals in mixed characteristic: a unified theory up to perturbation, with B. Bhatt, L. Ma, Z. Patakfalvi, K. Tucker, J. Waldron, J. Witaszek. arXiv:2401.00615.
- **4.** K. Schwede, K. Tucker, On the behavior of test ideals under finite morphisms. J. Algebraic Geom. 23 (2014), no. 3,399–443.
- **5.** K. Schwede, K. E. Smith.Amer.Singularities defined by Frobenius and applications, with Book draft. The latest version is available here: https://github.com/kschwede/FrobeniusSingularitiesBook.

## Synergistic activities

- Co-organizer of the conference: https://www.birs.ca/events/2022/5-dayworkshops/22w5174, Oaxaca Mexico, Casa Oaxaca, BIRS, (Banff International Research Station), June 7 -June 12th, 2022.
- Macaulay2 package development jointly with undergraduates:

   Divisor.m2, Pullback.m2, Seminormalization.m2,
   FastLinAlg.m2
- Cryptography summer camp for highschool students, at
   Penn. State twice and at U. of Utah once
   2013, 2014
   2016
- Co-organizer of the workshop: Intensive Workshop for Macaulay2 Development, University of Utah, May 7-10, 2016.
- Co-organizer of the Mathematical Research Communities Workshop on Commutative Algebra held at Snowbird Utah, June 7-13th, 2015.

2022

2015

2016