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EDUCATION

- 2007-2013 **University of California, Berkeley** (Berkeley, CA)
Ph.D. in Physics *September 2013*
 - Dissertation: *Probing large-scale structure with intrinsic alignments and galaxy clustering**M.A. in Physics* *May 2009*
- 2006-2007 **University of Cambridge** (Cambridge, UK)
M.A.St. in Mathematics, with Merit (Part III of the Mathematics Tripos) *June 2007*
 - Department of Applied Mathematics and Theoretical Physics
 - Trinity College
- 2002-2006 **Harvard University** (Cambridge, MA)
A.B. in Physics and Astronomy & Astrophysics (summa cum laude) *June 2006*

PROFESSIONAL EXPERIENCE

- 2020-
PRESENT **Assistant Professor** (Department of Physics, Northeastern University, *tenure track*)
- 2016-2020 **SNSF Ambizione Fellow** (Laboratory of Astrophysics, École Polytechnique Fédérale de Lausanne)
- 2013-2016 **CCAPP Postdoctoral Fellow** (Center for Cosmology and AstroParticle Physics, Ohio State Univ.)
- 2007-2013 **Graduate Student Researcher** (Univ. of California, Berkeley and Lawrence Berkeley National Lab)
- 2005-2006 **Undergraduate Researcher** (Harvard University)
- 2004 **NSF Research Experience for Undergraduates** (Institute for Astronomy, University of Hawaii)

RESEARCH

- Weak gravitational lensing and galaxy intrinsic alignments
- Cosmology with biased tracers of dark matter; galaxy clustering and redshift-space distortions
- Cosmological inference with multiple observational probes
- Galaxy and halo formation, structure, and evolution
- Novel probes of cosmological and fundamental physics

HONORS, AWARDS, FELLOWSHIPS, AND FUNDING

- Co-convenor of LSST-DESC Theory and Joint Probes working group 2017-present
- Ambizione Grant, Swiss National Science Foundation 2016-2019
- CCAPP Fellowship, Ohio State University 2013-2016
- National Science Foundation Graduate Research Fellowship 2007-2010
- Fiske Scholarship at Trinity College, Cambridge (Harvard-Cambridge Scholar) 2006-2007
- *Phi Beta Kappa* membership 2006
- Jack Sanderson Prize for top undergraduate in physics 2006
- Leo Goldberg Prize for top junior thesis in astronomy 2005
- John Harvard Scholar and Harvard College Scholar 2002-2006

TEACHING EXPERIENCE

- 2020- **Assistant Professor in Physics** (Northeastern University)
- Advisor for graduate student projects in Computational Physics 2020-
 - Physics 5118: General Relativity and Cosmology Spring 2021
- 2017- **Assistant Instructor and MA Project Advisor** (École Polytechnique Fédérale de Lausanne)
- Assistant Instructor for Astrophysics IV: Observational Cosmology Spring 2017-2020
 - Advisor for MA student specialization and thesis projects 2017-
- 2007-2012 **Graduate Student Instructor** (University of California, Berkeley)
- Physics/Astronomy C161: Cosmology and Relativistic Astrophysics (Head GSI) Spring 2012
 - Physics 250: Graduate Computational Cosmology (Head GSI) Fall 2010
 - Physics H7B: Honors Electricity, Magnetism, and Thermodynamics (Head GSI) Fall 2007
- 2003 **Education Program Developer** (Museum of Science and Industry, Chicago, IL)

SELECTED PRESENTATIONS

- **Cosmology and astrophysics seminars:**
Duke; Northeastern (March 2020); UChicago; Livermore National Lab (Nov. 2019); UCL (Oct. 2018); JPL (Sept. 2014, March 2018); Univ. of Geneva (May 2017); Caltech (Sept. 2016); CERN; EPFL; Oxford (Jan. 2016); Institute for Advanced Study (March 2015); Case Western (Oct. 2014); Ohio State (June 2014, June 2015, June 2016); Carnegie Mellon (Feb. 2014); Univ. of California, Davis (Nov. 2012); Stanford; Johns Hopkins; MIT (Oct. 2012); NYU; Columbia (Sept. 2012); Univ. of Bonn, Germany (July 2012)
- GOLD Workshop, Institut Pascal. Saclay, France. April 2020 (postponed) (*invited*)
- Recontres de Moriond, La Thuile, Italy. March 2020 (postponed) (*invited plenary*)
- Dark Matter with LSST, Chicago, IL. August 2019 (*invited*)
- American Physical Society, DPF, Boston, MA. July 2019 (*invited plenary*)
- MIAPP, Dynamics of large-scale structure. Munich, Germany. July 2019 (*invited*)
- Swiss Square Kilometer Array Days. Bern, Switzerland. June 2019
- PTChat Conference. Kyoto, Japan. April 2019 (*invited*)
- Dark Side of the Universe. Annecy, France. June 2018

- Statistical Challenges for LSS in the Era of LSST. Oxford, UK. April 2018 (*invited*)
- The Nonlinear Universe. Šmartno, Slovenia. July 2017 (*invited*)
- Swiss Cosmology Days: Basel, Switzerland. Feb. 2017; Zurich, Switzerland. July 2019
- COSMO-16. Ann Arbor, MI. August 2016
- GravLens 2016: Celebrating a Century of Gravitational Lensing. Leiden, Netherlands. July 2016
- Accurate Astrophysics, Correct Cosmology. London, UK. July 2015
- Aspen Center for Physics: Closing in on the Cosmological Model. Aspen, CO. March 2015
- ISSI workshop: Understanding Intrinsic Galaxy Alignments. Bern, Switzerland. July 2014
- IAU Symposium 308: The Zeldovich Universe. Tallinn, Estonia. June 2014
- AAS Meeting, dissertation talk. National Harbor, MD. Jan. 2014
- LSS13 Conference. Ascona, Switzerland. July 2013
- SnowPAC Conference. Snowbird, UT. March 2012
- Korean Institute for Advanced Study Workshop. Seoul, South Korea. June 2011
- Cosmology in Northern California Workshop. University of California, Berkeley. Oct. 2010
- Euclid Consortium Meeting. London, UK. June 2017
- eBOSS and DESI Joint Collaboration Meeting. Columbus, OH. Dec. 2016

ACADEMIC SERVICE AND MENTORING

- FirstGen Ahead mentor for first-generation university students 2020-
- Coordinator of Northeastern Introduction to Research Seminar Series 2020-
- Co-convener of LSST-DESC Theory and Joint Probes working group 2017-
- LSST-DESC Collaboration Council 2018-
- Advisor or co-advisor for several PhD and MA student projects 2014-
- Full member, LSST Dark Energy Science Collaboration 2014-
- Member, Dark Energy Survey 2013-
- Member, Euclid Consortium 2016-
- Member, eBOSS and DESI collaborations 2016-
- EPFL dissertation committee 2019
- Junior Member, International Astronomical Union 2018-
- Coordinator for joint EPFL, CERN, and Geneva Cosmology meetings 2017-
- CCAPP seminar coordinator 2014-2015
- Co-organizer of DES weak lensing workshop at CCAPP 2014
- Organized workshop on intrinsic alignments (London) 2015
- Scientific Organizing Committee, EWASS 2018 Symposium on lensing 2017-2018
- Co-coordinator, “Cross-correlation and co-analysis,” SnowPAC 2018 2018
- Session co-convener, “Cosmology and Gravitational Waves,” SUSY2018 2018
- Public outreach through EPFL “Open Days” 2016-
- Outreach with Columbus Center for Science and Industry and STEAM Factory 2013-2016
- Referee for numerous journal and review articles
- Physics faculty search committee, graduate student representative 2010
- Co-organizer of Cosmology in Northern California Workshop 2010
- Graduate student peer mentor 2008-2010

PUBLICATIONS

Refereed journal articles

First author or primary involvement

- MacCrann, N., **Blazek, J.**, Jain, B., Krause, E. *Controlling and leveraging small-scale information in tomographic galaxy-galaxy lensing*. 2020, MNRAS, 491, 5498.
- **Blazek, J.**, MacCrann, N., Troxel, M., Fang, X. *Beyond linear galaxy alignments*. 2019, PRD, 100, 103506.
- Samuroff, S., **Blazek, J.** *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Constraints on Intrinsic Alignments and their Colour Dependence from Galaxy Clustering and Weak Lensing*. 2019, MNRAS, 489, 5453.
- Schmitz, D., Hirata, C., **Blazek, J.**, Krause, E. *Time evolution of intrinsic alignments of galaxies*. 2018, JCAP, 7, 30.
- The DES Collaboration (*Key Project*). *Dark Energy Survey Year 1 Results: Cosmological Constraints from Galaxy Clustering and Weak Lensing*. 2018, PRD, 98, 043526.
- Troxel, M., MacCrann, N., Zuntz, J., Eifler, T., Krause, E., Dodelson, S., Gruen, D., **Blazek, J.** *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Cosmological Constraints from Cosmic Shear*. 2018, PRD, 98, 043528.
- Krause, E., Eifler, T., Zuntz, J., Friedrich, O., Troxel, M., Dodelson, S., **Blazek, J.** *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Multi-Probe Methodology and Simulated Likelihood Analyses*. Submitted to PRD. arXiv:1706.09359.
- Fang, X., **Blazek, J.**, McEwen, J., Hirata, C. *FAST-PT II: an algorithm to calculate convolution integrals of general tensor quantities in cosmological perturbation theory*. 2017, JCAP, 2, 30.
- McEwen, J., Fang, X., Hirata, C., **Blazek, J.** *FAST-PT: a novel algorithm to calculate convolution integrals in cosmological perturbation theory*. 2016, JCAP, 9, 15.
- **Blazek, J.**, McEwen, J., Hirata, C. *Streaming velocities and the baryon-acoustic oscillation scale*. 2016, PRL, 116, 121303 (Editor's Suggestion).
- Krause, E., Eifler, T., **Blazek, J.** *The impact of intrinsic alignment on current and future cosmic shear surveys*. 2016, MNRAS, 456, 207.
- **Blazek, J.**, Vlah, Z., Seljak, U. *Tidal alignment of galaxies*. 2015, JCAP, 8, 15.
- **Blazek, J.**, Seljak, U., Vlah, Z., Okumura, T. *Geometric and dynamic distortions in anisotropic galaxy clustering*. 2014, JCAP, 4, 1.
- **Blazek, J.**, Mandelbaum, R., Seljak, U., Nakajima, R. *Separating intrinsic alignment and galaxy-galaxy lensing*. 2012, JCAP, 5, 41.
- **Blazek, J.**, McQuinn, M., Seljak, U. *Testing the tidal alignment model of galaxy intrinsic alignment*. 2011, JCAP, 5, 10.
- **Blazek, J.**, Gaensler, B., Chatterjee, S., van der Swaluw, E., Camilo, F., Stappers, B. *The Duck Redux: An Improved Proper-Motion Upper Limit for the Pulsar B1757-24 near the Supernova Remnant G5.4-1.2*. 2006, ApJ, 652, 1523.

Substantial contribution, including collaboration papers

- Samuroff, S., Mandelbaum, R., **Blazek, J.** *Advances in Constraining Intrinsic Alignment Models with Hydrodynamic Simulations*. Submitted to MNRAS. arXiv:2009.10735.
- Pandey, S., Krause, E., Jain, B., MacCrann, N., **Blazek, J.** *et al.* (The DES Collaboration). *Perturbation theory for modeling galaxy bias: validation with simulations of the Dark Energy Survey*. Submitted to PRD. arXiv:2008.05991.
- Chisari, E. *et al.* (The LSST Dark Energy Science Collaboration). *Core Cosmology Library: Precision Cosmological Predictions for LSST*. 2019, ApJS, 242, 2.

- The DES Collaboration. *Cosmological Constraints from Multiple Probes in the Dark Energy Survey*. 2019, PRL, 122, 171301.
- The DES Collaboration. *Dark Energy Survey Year 1 Results: Constraints on Extended Cosmological Models from Galaxy Clustering and Weak Lensing*. 2019, PRD, 99, 123505.
- The DES and SPT Collaborations. *Dark Energy Survey Year 1 Results: Joint Analysis of Galaxy Clustering, Galaxy Lensing, and CMB Lensing Two-point Functions*. 2019, PRD, 100, 023541.
- Chen, Y., Ho, S., **Blazek, J.**, He, S., Mandelbaum, R., Melchior, P., Singh, S. *Detecting Galaxy-Filament Alignments in the Sloan Digital Sky Survey III*. 2019, MNRAS, 485, 2492.
- MacCramm, N., DeRose, J., Wechsler, R., **Blazek, J.** *et al.* (The DES Collaboration). *DES Y1 Results: Validating cosmological parameter estimation using simulated Dark Energy Surveys*. 2018, MNRAS, 480, 4614.
- Baxter, E., Omori, Y., Chang, C., Giannantonio, T., Kirk, D., Krause, E., **Blazek, J.** *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Methodology and Projections for Joint Analysis of Galaxy Clustering, Galaxy Lensing, and CMB Lensing Two-point Functions*. 2019, PRD, 99, 3508.
- The DES and SPT Collaborations. *Dark Energy Survey Year 1 Results: A Precise H_0 Measurement from DES Y1, BAO, and D/H Data*. 2018, MNRAS, 480, 3879.
- Friedrich, O. *et al.* (The DES Collaboration). *Density split statistics: joint model of counts and lensing in cells*. 2018, PRD, 98, 023508.
- Gruen, D. *et al.* (The DES Collaboration). *Density split statistics: Cosmological constraints from counts and lensing in cells in DES Y1 and SDSS*. 2018, PRD, 98, 023507.
- Elvin-Poole, J. *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Galaxy clustering for combined probes*. 2018, PRD, 98, 042006.
- Prat, J. *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Galaxy-Galaxy Lensing*. 2018, PRD, 98, 042005.
- Slepian, Z., Eisenstein, D., **Blazek, J.** *et al.* *Constraining the Baryon-Dark Matter Relative Velocity with the Large-Scale 3-Point Correlation Function of the SDSS BOSS DR12 CMASS Galaxies*. 2018, MNRAS, 474, 2109.
- Alam, S. *et al.* (The BOSS Collaboration). *The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey: cosmological analysis of the DR12 galaxy sample*. 2017, MNRAS, 470, 2617.
- Patton, K., **Blazek, J.**, Honscheid, K., Huff, E., Melchior, P., Ross, A., Suchyta, E. *Cosmological constraints from the convergence 1-point probability distribution*. 2017, MNRAS, 472, 439.
- Prat, J., Sanchez, C., Miquel, R., Kwan, J., **Blazek, J.** *et al.* (The Dark Energy Survey Collaboration). *Galaxy bias from galaxy-galaxy lensing in the DES Science Verification Data*. 2018, MNRAS, 473, 1667.
- Kwan, J., Sanchez, C., Clampitt, J., **Blazek, J.** *et al.* (The Dark Energy Survey Collaboration). *Cosmology from large scale galaxy clustering and galaxy-galaxy lensing with Dark Energy Survey Science Verification data*. 2017, MNRAS, 464, 4065.
- Clampitt, J. *et al.* (The DES Collaboration). *Galaxy-Galaxy Lensing in the DES Science Verification Data*. 2017, MNRAS, 465, 4204.
- The Dark Energy Survey Collaboration. *The Dark Energy Survey: more than dark energy - an overview*. 2016, MNRAS, 460, 1270.
- The Dark Energy Survey Collaboration (*Key Project*). *Cosmology from Cosmic Shear with DES Science Verification Data*. 2016, PRD, 94, 022001.

Collaboration papers with contributions warranting authorship

- To, C. *et al.* (The DES Collaboration). *Dark Energy Survey Year 1 Results: Cosmological Constraints from Cluster Abundances, Weak Lensing, and Galaxy Correlations*. Submitted to PRL. arXiv:2010.01138.

- Omori, Y. *et al.* (The DES and SPT Collaborations). *Dark Energy Survey Year 1 Results: tomographic cross-correlations between DES galaxies and CMB lensing from SPT+Planck*. 2019, PRD, 100, 043501.
- Željko, I. *et al.*. *LSST: From Science Drivers to Reference Design and Anticipated Data Products*. 2019, ApJ, 873, 111.
- The DES Collaboration. *The Dark Energy Survey Data Release 1*. 2018, ApJS, 239, 18.
- Ata, M. *et al.* (The eBOSS Collaboration). *The clustering of the SDSS-IV extended Baryon Oscillation Spectroscopic Survey DR14 quasar sample: First measurement of Baryon Acoustic Oscillations between redshift 0.8 and 2.2*. 2018, MNRAS, 473, 4773.

Non-refereed collaboration documents, white papers, and proceedings

- The LSST Dark Energy Science Collaboration. *Modified Gravity and Dark Energy models Beyond $w(z)$ CDM Testable by LSST*. arXiv:1905.09687.
- Bechtol, K. *et al.* *Dark Matter Science in the Era of LSST*. arXiv:1903.04425.
- Mandelbaum, R., **Blazek, J.** *et al.* *Wide-field Multi-object Spectroscopy to Enhance Dark Energy Science from LSST*. arXiv:1903.09323.
- Newman, J., **Blazek, J.** *et al.* *Deep Multi-object Spectroscopy to Enhance Dark Energy Science from LSST*. arXiv:1903.09325.
- Ferraro, S. *et al.* *Inflation and Dark Energy from spectroscopy at $z > 2$* . arXiv:1903.09208.
- Meerburg, P.D. *et al.* *Primordial Non-Gaussianity*. arXiv:1903.04409.
- Rhodes, J. *et al.* *Cosmological Synergies Enabled by Joint Analysis of Multi-probe data from WFIRST, Euclid, and LSST*. 2019, BAAS, 51, 201.
- Slosar, A. *et al.* *Packed Ultra-wideband Mapping Array (PUMA): A Radio Telescope for Cosmology and Transients*. 2019, BAAS, 51, 53.
- Drlica-Wagner, A. *et al.* *Probing the Fundamental Nature of Dark Matter with the Large Synoptic Survey Telescope*. arXiv:1902.01055.
- The LSST Dark Energy Science Collaboration. *LSST-DESC Science Requirements Document*. arXiv:1809.01669.
- The LSST Dark Energy Science Collaboration. *Optimizing the LSST Observing Strategy for Dark Energy Science: DESC Recommendations for the Wide-Fast-Deep Survey*. arXiv:1812.00515.
- The LSST Dark Energy Science Collaboration. *Optimizing the LSST Observing Strategy for Dark Energy Science: DESC Recommendations for the Deep Drilling Fields and other Special Programs*. arXiv:1812.00516.
- The LSST Dark Energy Science Collaboration. *LSST-DESC Science Roadmap*. http://lsstdesc.org/assets/pdf/docs/DESC_SRM_latest.pdf.
- **Blazek, J.**, Seljak, U., & Mandelbaum, R. *Large-scale structure and the intrinsic alignment of galaxies*. Proceedings, IAU Symposium 308, The Zeldovich Universe. arXiv:1504.04412.