

Alan Zablocki, Ph.D.

CONTACT INFORMATION

Phone: +1 (773) 306 5405
E-mail: alan.zablocki at gmail.com
Web: www.alanzablocki.com

RESEARCH INTERESTS

Cosmology: structure formation, massive neutrinos, dark energy and CMB physics
Data Analysis: large dataset analysis, data compression algorithms, machine learning

EDUCATION

The University of Chicago, Chicago, IL

Ph.D., Astronomy and Astrophysics, (2014)

Thesis Title: *Constraining Neutrinos and Dark Energy with Galaxy Clustering in the Dark Energy Survey*

Adviser: Prof. Joshua A. Frieman

The University of Chicago, Chicago, IL

M.S., Astronomy and Astrophysics, (2010)

California Institute of Technology, Pasadena, CA

Exchange Student (2006-2007)

University College London, London, UK

M.Sci., Astrophysics, (2008)

Undergraduate Thesis: *Testing the Epoch of Reionization with the Cosmic Microwave Background*

Adviser: Dr. Jochen Weller

REFEREED JOURNAL PUBLICATIONS

Alan Zablocki, *Constraining Neutrinos and Dark Energy with Galaxy Clustering in the Dark Energy Survey*, Physical Review D 94, 043525 (2016)

Alan Zablocki & Scott Dodelson, *Extreme data compression for the CMB*, Physical Review D 93, 083525 (2016)

SUBMITTED PAPERS

Jia-Yu Tang, Jochen Weller & **Alan Zablocki**, *Probing Modified Gravity by Combining Supernovae and Galaxy Cluster Surveys*, astro-ph/0609028

INVITED TALKS

Constraining Neutrino Masses and Dark Energy with the Dark Energy Survey, 2013, HEP Lunch Seminar, Argonne National Laboratory, Lemont, IL

Constraining Neutrino Masses and Dark Energy with the Dark Energy Survey, 2013, International Collaboration Meeting for the Dark Energy Survey, St. Feliu de Guixols, Spain

FELLOWSHIPS The Data Incubator Data Science Fellowship (2016)

Brinson Pre-Doctoral Fellowship for Science Scholarship, Teaching, & Communication at the University of Chicago (2012-2013)

Brinson Pre-Doctoral Fellowship at Fermilab (2010-2011)

Caltech Summer Undergraduate Research Fellowship (SURF), Summer 2007

TEACHING **Adjunct Astronomy Faculty** 2015
EXPERIENCE Tribeca Flashpoint College, Chicago, IL

Developed a complete curriculum for a new core Introductory Astronomy course and taught the course to 12 undergraduate and adult learners

Teaching Assistant 2008-2012

University of Chicago, Chicago, IL

Evolution of the Universe (Spring 2012)

The Origin of the Universe and How We Know (Winter & Spring 2009)

Stellar Astronomy and Astrophysics (Autumn 2008)

Supervised two laboratory sessions per week, graded homeworks and exams

OUTREACH **Adler Planetarium Volunteer** 2010-present
ACTIVITIES Adler Planetarium, Chicago, IL

Delivered interactive presentations to public audiences of 20-200 museum patrons on current cosmology and astronomy research at the Space Visualization Laboratory

CAPSTONE NASA Program with Chicago Public Schools 2010-2011

Supervised 16 Chicago Public Schools students and their teachers in using large datasets from NASA, the Sloan Digital Sky Survey and the Hubble Space Telescope to re-discover the expansion of the universe. Trained students and teachers in writing SQL scripts to mine data from astronomy catalogs

COMPUTER AND Computer Programming:
PROGRAMMING • Fortran, Python, R, SQL, MapReduce, Hadoop, Spark, MATLAB, Mathematica,
SKILLS IDL, Java, Processing

Software Packages and Analysis Tools:

• Linear and Logistic Regression, Random Forests, scikit-learn, Pandas, NumPy, SciPy

• Web scraping, APIs, Flask, Heroku, d3.js, Javascript, HTML, CSS

• CosmoMC, CAMB, HEALPix, Miriad, DS9, git, PBS, Android SDK, Arduino

Operating Systems:

• Linux, Windows

REFERENCES **Prof. Joshua A. Frieman** (e-mail: frieman@fnal.gov)
Prof. Scott Dodelson (e-mail: dodeslon@fnal.gov)
Prof. Donald G. York (e-mail: don@oddjob.uchicago.edu)