

CURRICULUM VITAE

Mike Specian

Contact Information:

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Education:

2009-2015 – Ph.D., Johns Hopkins University, astrophysics

Dissertation: *Improved Galaxy Counting Techniques and Noise Reduction Algorithms as Applied to the Sloan Digital Sky Survey*, advisor: Prof. Alex Szalay

2004-2009 – M.A., Johns Hopkins University, astrophysics

1999-2003 – B.A. *cum laude* and *with distinction*, Boston University, joint concentration in physics and astronomy**Professional History:**

- 2016-present **Visiting Scientist** – Johns Hopkins University – same work as when I was an assistant research scientist, but with a different title
- 2016 **Guest Instructor**, Beth Tfiloh Dahan Community School – taught classes to prepare high school students for the AP Physics exam
- 2015 **Assistant Research Scientist**, Johns Hopkins University – research focused on making corrections to the Sloan Digital Sky Survey footprint, mapping galaxies without redshifts, applying noise filters to galaxy overdensities
- 2012-2013 **Scientific Consultant**, US Global Change Research Program’s National Climate Assessment; Washington, DC – provide recommendations of physical climate change indicators to the technical team
- 2012-2013 **Member, Media and Message Working Group for MD House of Delegates Campaign**; Baltimore County, MD – conduct background research on House of Delegates members, write Op-Eds, contribute to campaign strategy and fundraising, canvassing
- 2010-present **Founder, web designer, and writer for MikeSpecian.com** – website designed, in part, to write about science, climate, energy, and public policy issues
- 2010 **Co-author of [2020 Vision](#)**, the official public dissemination booklet of the Astro 2010 decadal survey
- Fall 2010 **Mirzayan Science & Technology Policy Fellow**, National Academy of Sciences; Washington, DC – work included geoengineering research, policy responses to climate catastrophes and evaluation of NAS’s energy research portfolio
- Summer 2008 **EARA Fellow**, Max Planck Institute for Astrophysics; Garching Germany – applied noise filtering research developed at JHU to Planck Satellite mission
- Spring 2008 **JHU Representative** for the 2008 Science, Engineering, and Technology Congressional Visits Day
- Fall 2007 **JHU Representative for Capitol Hill Science Funding Discussion** through the Coalition for National Science Funding (CNSF)
- Summer 2006 **Course Instructor**, Center for Talented Youth (CTY) at JHU – wrote and taught a 100 hour curriculum in astronomy to highly talented 6th-10th graders
- 2006 **MCAT Instructor**, Princeton Review
- 2005-present **Private Tutor** in Baltimore City with a focus on physics and mathematics for grade school students through professionals

- 2005-2015 **Research Assistant** under advisement of Dr. Alex Szalay, Johns Hopkins University – using “big data” to build novel noise filters for application in astrophysical datasets
- 2005-2008 **Member of JHU Graduate Student Governing Council**
- 2004-2005 **Teaching Assistant**, Johns Hopkins University, 2 general physics courses and 2 laboratories
- 2003-2004 **Lab Technician**, Optodot Corporation; Allston MA – worked on developing emerging technology in IR security dyes and organic photodetectors
- 2002-2003 **Research Assistant** under advisement of Dr. Tereasa Brainerd; Boston University – theoretically evaluated the performance of several dynamical galactic mass estimators

Publications:

- Specian, M. A., & Szalay, A. S., Photometric and Spectroscopic Footprint Corrections in the Sloan Digital Sky Survey's 6th Data Release, 2016, ApJ, 820, 115
- Specian, Mike. "[Uninformed politicians are dangerous.](#)" *The Baltimore Sun* 15 Dec. 2013.
- Specian, Mike. "[Government should oppose Keystone XL Pipeline.](#)" *The Star Ledger* 1 Sept. 2011.
- Specian, Mike. "[I Returned to Speak at My High School Alma Mater, and Here's What I Decided to Say.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 06 July 2016. Web. 06 July 2016.
- Specian, Mike. "[Techniques for Organizing, Curating, and Presenting Content on the Web.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 20 Nov. 2015. Web. 20 Nov. 2015.
- Specian, Mike. "[Supercharge Your Internet Research with These Essential Tips.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 9 Nov. 2015. Web. 20 Nov. 2015.
- Specian, Mike. "[How Big Data is Transforming Science.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 18 Oct. 2015. Web. 18 Oct. 2015.
- Specian, Mike. "[Debunking the Notion That Climate Scientists Are Just in It for the Money.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 14 Sep. 2015. Web. 18 Oct. 2015.
- Specian, Mike. "[Is the Universe a Giant Fractal?](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 1 Jan. 2015. Web. 18 Oct. 2015.
- Specian, Mike. "[FOIA – We Are Making Progress.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 10 Mar. 2014. Web. 18 Oct. 2015.
- Specian, Mike. "[The Obama Failure.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 5 Mar. 2014. Web. 18 Oct. 2015.
- Specian, Mike. "[Freedom of Information Act to the Rescue?](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 3 Mar. 2014. Web. 18 Oct. 2015.
- Specian, Mike. "[Johns Hopkins Feels the Power with Its Cogeneration Plant.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 21 Nov. 2013. Web. 18 Oct. 2015.
- Specian, Mike. "[Climate and Energy Primary Sources.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 16 Aug. 2013. Web. 18 Oct. 2015.
- Specian, Mike. "[The Government's Silence of Science.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 25 Mar. 2013. Web. 18 Oct. 2015.
- Specian, Mike. "[The Kingston Disaster.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 18 Mar. 2013. Web. 18 Oct. 2015.
- Specian, Mike. "[My Silver Bullet for Solving the Energy Crisis.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 21 May 2012. Web. 18 Dec. 2012.
- Specian, Mike. "[What ShamWow Can Teach Democrats about Winning Elections.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 23 Apr. 2012. Web. 18 Dec. 2012.
- Specian, Mike. "[Why It Is So Difficult to Convince People That You Are Right.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 29 Feb. 2012. Web. 18 Dec. 2012.

- Specian, Mike. "[Is the Universe Predetermined and Do Humans Have Free Will.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 10 Feb. 2012. Web. 18 Dec. 2012.
- Specian, Mike. "[Federal Obligations for Research by Detailed Science Engineering Field.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 8 Feb. 2012. Web. 18 Dec. 2012.
- Specian, Mike. "[Is Dark Matter Just an Illusion?](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 28 Jan. 2012. Web. 18 Dec. 2012.
- Specian, Mike. "[Our Planet's Carbon Budget: How Much Does Each Source Produce, How High Can We Go, and What Would Be the Impact of Keystone XL.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 9 Nov. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[George Will versus Elizabeth Warren.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 6 Oct. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[Mythbusters: Oil Creates Jobs and Makes Us Safer Edition.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 27 July 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[How to Make the World Run Forever \(alternate Title: How to Kill Kit Kat in 3 Easy Steps\).](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 2 July 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[Addressing the Claim That Climate Change Researchers Are Only in It for the Grant Money.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 1 July 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[Was the Future Progress of All Particles Set in Motion Inevitably at the First Moment of the Big Bang? \(Part 4\).](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 1 June 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[Why Facts Will Not Convince People of Climate Change.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 1 June 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[Climate Deniers Claim Liberals Don't Understand Their Arguments - I Present Their Points and My Response.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 28 May 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[Green Roofs in New York City May Be an Effective Adaptation to Flooding.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 19 May 2012. Web. 18 Dec. 2012.
- Specian, Mike. "[Federal Investment in Common Sense.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 13 Apr. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[A Republican Leads on the Environment While a Democrat Dithers.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 31 Mar. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[The Smart Energy Grid - The Roles of States.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 1 Mar. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[The Smart Energy Grid - Federal Roles in Energy.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 27 Feb. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[The Smart Energy Grid - The 6 Big Solutions.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 26 Feb. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[The Smart Energy Grid - Consumer Savings.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 25 Feb. 2011. Web. 18 Dec. 2012.
- Specian, Mike. "[The Smart Energy Grid - Consumer Controls.](#)" Web log post. *The Personal Website of Mike Specian*. N.p., 24 Feb. 2011. Web. 18 Dec. 2012.
- National Academy of Sciences. "2020 Vision: An Overview of New Worlds, New Horizons in Astronomy and Astrophysics." Washington, DC: National Academy of Sciences, 2011.
- Specian, Mike. "Nation's Policy on Energy Must See Change." *The Baltimore Sun* Aug. 2008.
- Brainerd, T. G.; Specian, Michael A. (2004), Mass-to-Light Ratios of Early- and Late-Type Galaxies. International Astronomical Union Symposium no. 220, held 21 - 25 July, 2003 in Sydney, Australia. Eds: S. D. Ryder, D. J. Pisano, M. A. Walker, and K. C. Freeman. San Francisco: Astronomical Society of the Pacific., p.145
- Brainerd, T. G.; Specian, Michael A. (2003), Mass-to-Light Ratios of 2dF Galaxies. *The Astrophysical Journal*, Volume 593, Issue 1, pp. L7-L10

Working Papers (In Preparation)

Specian, M.; Szalay, A. (2016), Optimal Methods for Counting Galaxies in Cells. The Astrophysical Journal.
Specian, M.; Szalay, A. (2016), A Method to Reduce Shot Noise and Systematic Errors from Large Datasets. The Astrophysical Journal.

Presentations:

Astrophysics, Climate Change, and Careers in Science. Presented at Phillipsburg HS, Phillipsburg, NJ; April 22, 2016.
What Does It Take to Be a Scientist? Presented at Alpha Public School, Alpha, NJ; April 21, 2016.
[“The Summer of Punk”](#); Ignite: Baltimore; MICA Brown Center, Baltimore, MD; October 18, 2012.
Alternative Careers for Scientists. Presented at Thomas Jefferson High School; Alexandria, VA; 2010.
A Survey of Modern Astronomy and an Introduction to the Galaxy Zoo 2 Project. Presented at Johns Hopkins University School of Education; Baltimore, MD; 2010.
Modeling the Human Classification of Galaxy Morphology. Presented at Johns Hopkins University; Baltimore, MD; December 5, 2007.
Congressional “ask” for greater science funding during the American Physical Society’s Coalition for National Science Funding’s Congressional Visits Days, 2007 & 2008.
An Introduction to Masers. Presented at Johns Hopkins University; Baltimore, MD; December 12, 2006.
Solving Problems with the Sloan Digital Sky Survey. Presented at Johns Hopkins University; Baltimore, MD; February 7, 2006.
Calibration Effects on Number Counts. Presented at the Large Scale Structure Working Group Meeting at The Ohio State University; Columbus, OH; January 5, 2006.
Supernova Discoveries at High Redshift Provide Evidence of a Decelerating, Then Accelerating Universe: A Summary. Presented at Johns Hopkins University; Baltimore, MD; May 2, 2005.

Other:

Eighth ranked debater in North America in 2003
Volunteer at the Community for Creative Non-Violence (CCNV); Washington, DC
Inaugural Participant – NASA Center for Astronomy Education (CAE): *Improving the College General Education Earth, Astronomy, and Space Science Course Through Active Engagement: A Tier I Teaching Excellence Workshop* (14 hours)