

## Edward Tortorici

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### EDUCATION

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*Santa Clara University (SCU), Santa Clara, CA* Graduation: June 2014  
B.S. Degrees in Physics (3.84) and Mathematics (3.85) Overall GPA: 3.84  
Pi Mu Epsilon Member (Math honors society), Sigma Pi Sigma Member (Physics honors society), Drahmman Prize in Physics, Graduated Summa Cum Laude

### WORK EXPERIENCE

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*Research Associate, National Institute of Standards and Technology* Aug 2014-present  
Physical Measurements Laboratory: Worked on the fabrication process and implementation of superconducting nanowire single-photon detectors (SNSPD) for use in the near IR range. Built and maintained cryogenic systems.

*Teaching Assistant, Santa Clara University* Sep 2013-June 2014  
Lower-Division Algebraic Physics: Led a discussion section for a 100 student class for pre-med physics once a week.

*Research Assistant, Santa Clara University & Stanford University* Summers 2012-2013  
Super Cryogenic Dark Matter Search (SCDMS) Collaboration: Designed, built, and maintained low-noise electronics for superconducting detector readout. Independently implemented machine learning techniques for quasiparticle studies with superconducting Al and W transition edge sensor (TES) devices.

*Solar Decathlon Sub-Team Leader, Santa Clara University* Jan 2012-Jan 2013  
SCU Solar Decathlon: Led SCU Solar Decathlon (2013 competition) sub-team responsible for solar thermal and radiant heating. Worked on reconstruction of SCU's 2011 submission and programmed HVAC controls for 2009 submission.

### PUBLICATIONS

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- (1) J. J. Yen, B. A. Young, B. Cabrera, P. L. Brink, M. Cherry, R. Moffatt, M. Pyle, P. Redl, A. Tomada, E. C. Tortorici, "**Quasiparticle Diffusion in Al Films Coupled to Tungsten Transition Edge Sensors**", The Proceedings of the 15th Intl. Workshop on Low Temperature Detectors (LTD15), J. of Low Temp. Phys., (2013).
- (2) J.J Yen, B. Shank, B.A. Young, B. Cabrera, P. Brink, M Cherry, J.M. Kreikebaum, R. Moffatt, P. Redl, A. Tomada, and E.C. Tortorici, "**Measurement Of Quasiparticle Transport In Al Films Using W Transition Edge Sensors**" Appl. Phys. Lett. **105**, 163504 (2014).

### TECHNOLOGY SUMMARY

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**Computing:** MATLAB, Python, LaTeX, FreeCAD, Raspberry Pi, Linux, Microsoft/Open Office, bash, git

**Experience:** LabVIEW, Machine Learning, Xilinx/FPGA, SolidWorks, Adobe Flash, digital and analog circuit design, machining, GPIB instrument control

**Clean Room:** ECR plasma etching, ellipsometry, alignment mark etching

**Other:** Cryogenics, wire bonding, laser safety trained, video production