



# Tesla Jeltema

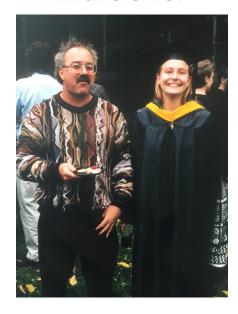
# Santa Cruz Institute for Particle Physics University of California, Santa Cruz





# Thank you to my Mentors

Marc Sher



Undergraduate

**Claude Canizares** 



Graduate

John Mulchaey



**Postdoctoral** 

# Thank you to my Mentees

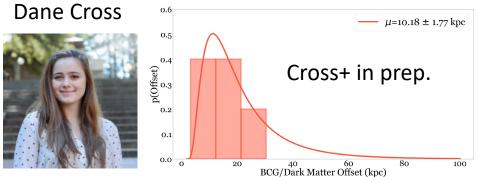
2019 BS and PhD Graduates



2020-21 BS and PhD Graduates



#### Probing SIDM with central cluster galaxy offsets



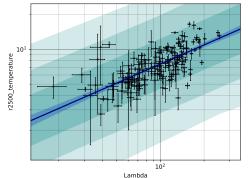
## Richness-mass scatter in DES clusters

Paige Kelly

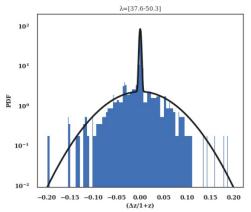
Jose Jobel







#### Calibrating projection effects in DES clusters



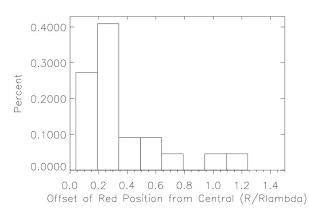
Verenise Martinez



Martinez+ in prep.

#### Miscentering in DES clusters

**Allison Swart** 





Dark Energy Survey Y3 in prep.

### Multiwavelength Astrophysical **Probes of Dark Matter Properties**

#### $10^{-11}$ $r_{obs} = 5 \text{ kpc}$ $r_{ROI} = 5 \text{ kpc}, \, \pi^0 \text{ only}$ $\begin{array}{c} 20 \\ 10^{-12} \\ 10^{-12} \\ 10^{-13} \end{array}$ Ackermann et. al. (2015) Walterbos and Grave (1985) $b\bar{b}, M_{\gamma} = 11 \text{ GeV}$ $b\bar{b}/\tau^{+}\tau^{-}, M_{\chi} = 5.8 \text{ GeV}$ $r_{obs} = 1 \text{ kpc}$ $10^{-15}$ $10^{-16}$ 10 15 Chandra NFW Buote et. al. (2002) $\sigma/m = 0.1 \text{ cm}^2/\text{g}$ $\sigma/m=1~{\rm cm^2/g}$ 0.250.2 0.15 0.1 0.20 0.40 0.50 Ellipticity - $\epsilon$

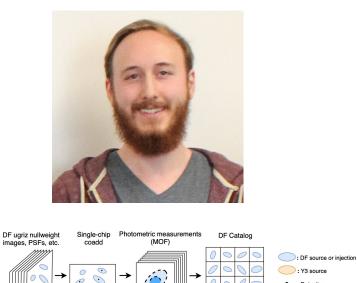
#### Alex McDaniel

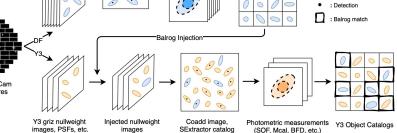


McDaniel+ 2018, 2019, 2021

## Measuring the Dark Energy Survey **Transfer Function with Balrog**

**Spencer Everett** 





Everett+ 2021, DES Collaboration 2021

# APS Conferences for Undergraduate Women in Physics

→ Encourage students at your institution to apply!

UCSC will be a host site for 2022

CUWiP 2015 at UC Santa Cruz

