

The School of Natural Sciences
Presents the
Undergraduate Physics Research Symposium
with talks by graduating seniors from the physics program

Friday, May 7, 2021
10:00 am – 12:35 pm

Online via Zoom

<https://ucmerced.zoom.us/j/92468154176>, Passcode: 643708

Note: times are approximate

10:00-10:12

Simulating macromolecular crowding via δ -
Sean Deocampo, Jing Xu

10:13-10:25

Applying Fast Fourier Transform to
Quantify Microtubule Orientation
Robert Gomez, Jing Xu

10:26-10:38

Abraham-Minkowski: The physics
controversy that was solved... until it wasn't
Matias Lopez, Dustin Kleckner

10:39-10:51

A meta-analysis of hybrid organo-metallic
perovskite solar cells for developing rational
design rubrics
Peter Athey, Sayantani Ghosh

10:52-11:04

Enhancing quantum dots
Ashley Argueta, Michael Scheibner

11:05-11:17

Boundary roughness and phase transitions
near mutational meltdown
Ernesto Padilla, Daniel Beller

11:18-11:30

The effects of power on four wave mixing
Trevor Gammill, Jay Sharping

11:31-11:43

Using simulations to characterize the Milky
Way – LMC connection
Tomás Virgen, Sarah Loebman

11:44-11:56

Deciphering the structures of nematic LC
Christina Valleta, Daniel Beller

11:57-12:09

The instability of knotted vortex flow fields
Stefan Faaland, Dustin Kleckner

12:10-12:22

Computing Ionization Rates from Periodic
Orbits in Chaotic Rydberg Atoms
Ethan Custodio, Kevin Mitchell

12:23-12:35

Using Labview to Locate and Log
Immobilized Proteins
Grace Newman, Victor Muñoz