

# Lillian Kay Petersen

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## EDUCATION

### LOS ALAMOS HIGH SCHOOL

Los Alamos, New Mexico

#### SOPHOMORE

Cum. GPA: 4.0 / 4.0

currently in precalculus

## SKILLS

### PROGRAMMING

Python •  $\LaTeX$  • Github

Unix • vim

Google cloud computing

### LANGUAGE

German, two years

## COMMUNITY

### SCIENCE OUTREACH

Speaker for 6th grade classes

and at environmental center

### YOUTH

violin teacher for children

extensive work with foster

and adopted children

## INTERESTS

### MUSIC

violin • Bavarian zither

orchestra

### SPORTS

cross country • track

ultimate frisbee

## EXPERIENCE

### INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS |

#### INTERNSHIP

Summer 2018 | Vienna, Austria

### DESCARTES LABS | MENTORSHIP PROGRAM

2017 | Los Alamos, NM

- Use Descartes Satellite Platform to retrieve MODIS and LANDSAT data.
- Compute plant health indices and cloud masks
- Machine learning with scikit-learn to classify land types
- Running python code in parallel on the Google Cloud

### JAHN RESEARCH GROUP | GROUP MEMBER

UW-Madison

[link](#)

## RESEARCH

### PREDICTING FOOD SHORTAGES IN AFRICA FROM SATELLITE IMAGERY 2017 – 2018

Created an early warning system to predict crop yields in every country in Africa

3–4 months before the harvest using satellite imagery.

National JSHS 1st Place in category, Maryland

Intel International Science and Engineering Fair (ISEF) 1st Place in category, Pittsburgh

### AMERICA'S FARMING FUTURE: THE IMPACT OF CLIMATE CHANGE ON CROP YIELDS 2016 – 2017

Predicted crop yields out to year 2100 for every county in the U.S. for three crops: corn, soybeans, and rice, and two future climate scenarios. Predictions were made with a statistical model of crop yields between historical temperature measurements and crop data.

1st Place in category County, Regional, and State

1st Place New Mexico JSHS

National JSHS finalist, San Diego

Intel ISEF 3rd Place in category, Los Angeles

Publication submitted

### DETECTING CLIMATE CHANGE THROUGH MEANS AND EXTREMES 2015 – 2016

Detected how the climate is changing in temp. and precip. means and extremes since 1950 for every weather station around the world, shown on an interactive map: ([link](#))

County 1st Place in category

3rd Place New Mexico Supercomputing Challenge

Publication in 2016 New Mexico Academy of Science Journal: [link](#)

### WILL IT BE A GOOD SKI SEASON? CORRELATIONS BETWEEN EL NINO AND SNOWFALL 2014 – 2015

Analyzed correlations between historical El Nino indices and winter weather across the U.S. since 1950. Found that the El Nino index in August can serve as a predictive tool of the following winter's weather.

Los Alamos County Grand Award Winner

1st Place in category at County, Regional, and State

Publication in 2015 New Mexico Academy of Science Journal: [link](#)