

*Exceptional service in the national interest*



# Tribal Energy Program - Summer Internship

Chelsea Chee

University of New Mexico

CRP & Public Administration

Sandra Begay-Campbell: Mentor - Organization 6124



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND NO. 2011-XXXXP

# Mission

...to provide financial & technical assistance to tribes through *government to government* partnerships that:

- Empower tribal leaders to make informed decisions about energy choices
- Bring renewable energy & energy efficiency options to Indian Country
- Enhance human capacity through education & training
- Improve local tribal economies & the environment
- Make a difference in the quality of life of Native Americans

# Approach

- Financial Assistance
  - Renewable energy development
  - Energy consumption reduction
- Technical Assistance
  - Use of DOE's national laboratories
- Education & Training
  - Online courses
  - **Student internships**
  - Workshops

# 12-Week Summer Internship

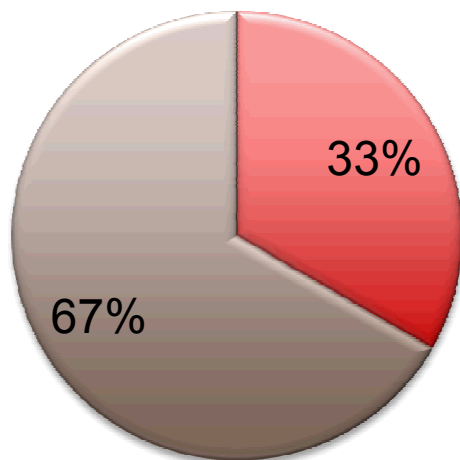
- Graduate & undergraduate
  - Preference to federally recognized tribal members
  - Specific interest in renewable energy
- To support Sandia National Laboratories (SNL) in performing cross-disciplinary tasks in working with Native American tribes
- Hands-on field experiences
    - On-grid photovoltaic (PV) systems
    - Off-grid PV systems
    - Off-grid hybrid (PV & wind) systems
    - Large-scale commercial wind farm
    - Solar power tower
    - Distributed energy resource systems
    - Conferences & trainings

# Successes

- 10 year program
- 27 undergraduate & graduate
- 16 different tribal affiliations
- 12 different majors

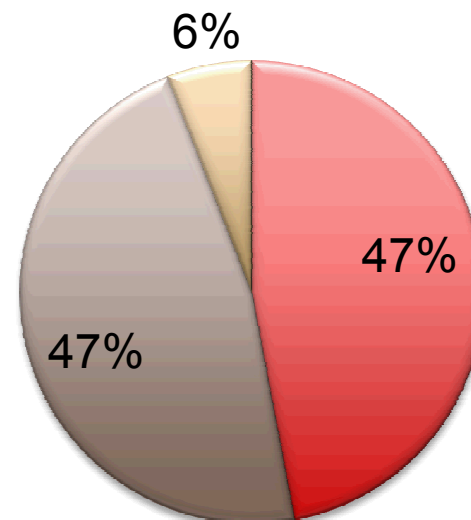
## Status of All Interns

- Enrolled students (9)
- Graduated (18)



## Type of Former Intern Work

- Tribal related (8)
- Non-tribal Engineering/Science (8)
- Seeking employment (1)



# 2012 Summer Field Visits







## AZ Tribal Solar Tour

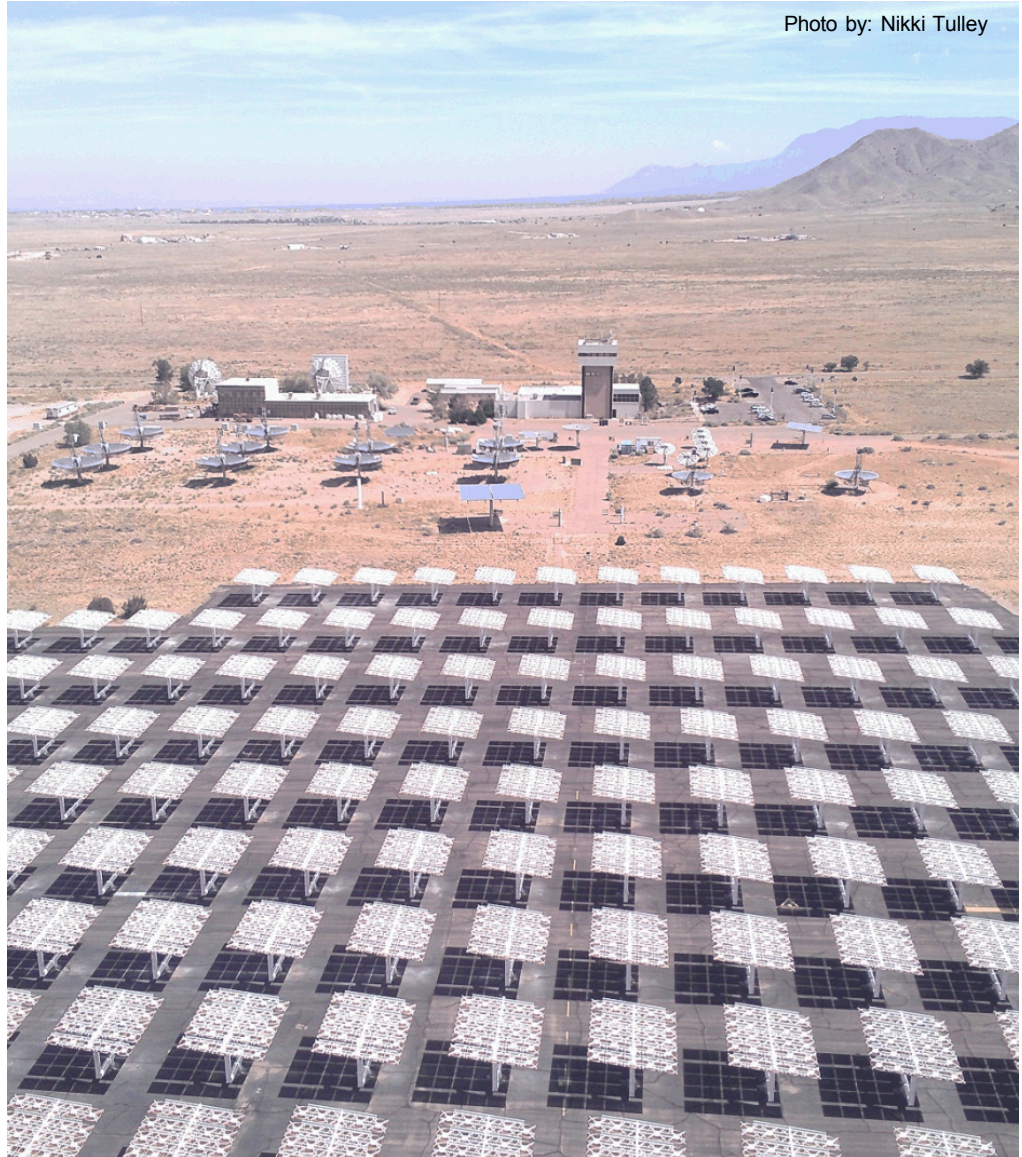
- Navajo
  - Solar powered & energy efficient office building
  - Utility issued off grid residential hybrid systems
  - Non-profit issued off grid residential PV systems
- Hopi
  - Private off grid residential PV systems
- Hualapai
  - Off grid small scale commercial PV system



Photo by: Nikki Tulley

## SNL Site Visits

- Government Relations
  - Tribal liaison
- Microsystems Engineering & Science Applications
  - Solar glitter
- Wind Energy Technologies
  - Battery storage
  - Power electronics
- Concentrating Solar Technologies
  - Solar Tower
  - Concentrated solar heat
- Distributed Energy Technologies Laboratory
  - Photovoltaic energy





# Strategic Planning Training & Session

- Kabotie Consulting
- 2-day training session
- Hopi Tribe
  - 3-day planning session



Source: Technology of Participation by  
Cultural Affairs – Chicago, IL





## CA Tribal Solar & Wind Tour

- Ramona Band of Cahuilla Indians
  - Ecotourism facility
- Agua Caliente Band of Cahuilla Indians
  - Solar powered trading post
- Augustine Band of Cahuilla Indians
  - Solar powered casino
- Campo Band of Mission Indians
  - Large scale wind farm



## NTUA-Crownpoint Grand Opening

- LEED Platinum office building
- Two 34.5 kW SunCarrier PV systems
- Funded by Department of Energy's EERE Block Grant & United States Department of Agriculture

