



# Opportunities for Cooper Union EWB Engagement in Guatemala

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# Strong Connection with Guatemala

- The Sisters of Charity of New York have served in Guatemala since 1971
- Dean Shay has been an Associate of the Sisters of Charity since 2014
  - She is currently chairing a committee within the Sisters of Charity members and Associates to form closer partnerships between the US and Guatemalan communities
  - She traveled to Guatemala in July 2019 to explore partnership opportunities with Cooper Union students and faculty, with the hope of starting an EWB chapter (not realizing several students and faculty had the same idea!)
  - She is a close friend of the Sisters serving in Guatemala
- The ministries in Guatemala have partnered with US universities on engineering and medical projects and welcome an additional partnership with Cooper Union

# Sisters of Charity Missions in Guatemala

- A ministry presence for nearly 50 years
- Santa Cruz del Quiche
  - Barbara Ford Peace Building Center
  - Supported missions – schools, farms, nursing home
  - 100km from Guatemala City (~3.5 hours)
- Novillero in Solola department
  - Medical center with housing for visitors (historically missionary doctors)
  - Supports 3 other medical centers in nearby towns
  - 80km from Guatemala City (~3 hours)





# The Barbara Ford Peace Building Center

- Founded in 2009 in memory of Sister Barbara Ford, murdered in Guatemala City May 5<sup>th</sup>, 2001.
- [www.cenpaz.org](http://www.cenpaz.org)
- 50-acre campus
  - Administrative buildings
  - Hotel
  - Restaurant
  - Farm
  - Eco-trail
- Three categories of programs
  - Health
  - Entrepreneurship
  - Human rights
- Willing to serve as base for Cooper Union projects





# Barbara Ford Center - Facilities

- Conference Center
  - 100-pers on conference room
  - Two meeting rooms for 10-15 people
- Classrooms in administration bldg.
- Restaurant
  - 100-person capacity
- Hotel (dorm-style)
  - 60 beds
- Model farm
  - originally instituted by Save the Children to develop techniques for affordable small-scale agriculture to improve the diet of indigenous people in the surrounding area
- Beekeeping equipment



# Barbara Ford Center-Possible projects

- Power improvements for campus
  - Several buildings spread across 50 acres
  - Tied to local grid but electricity is expensive with periodic outages
  - Prof. Amanda Simpson (Cooper ChemE Department) planning fuel cell project
  - Possible solar project
  - Electrical engineering project to plan for a backup generator
- Power integration project at a nearby farm
  - Farm experiences low voltage, >1/4 mi from transformer
  - Possible micro grid implementation
    - Two small Solar panels on site with battery storage (pictured)
    - Small gasoline generator on site





# Barbara Ford Center-Possible projects

- Solar power for drip irrigation systems at remote fields (off-grid)
  - Just completing a 3-year project, “Mas Riego,” with USAID and UC San Diego to introduce drip irrigation and other techniques to local farmers
  - Many fields are off-grid
  - MIT was considering a solar-powered irrigation project
- Fish farm water temperature regulation
- Greenhouse temperature regulation
- Translation software
  - US and international grant applications are processed in English



Farmer Fernando with Sr. Eileen Judge, Otto (BF Center), Matthew Leach, Espin (BF Center), and Carolina (regional “Mas Riego” project director)

# Medical Mission in Novillero

- Original mission - from 1971
- Four clinics
  - Founded by Sr. Immaculata Burke
  - Now run by Dr. Jose Miguel Vasquez
    - Grew up in Novillero
    - Trained by Sr. Immaculata
    - Attended medical school
    - Came back to serve his community
  - Dorm and apartment to serve medical missionaries
    - Diocese of Spokane sends eye doctors for cataract surgery
    - Sisters of Charity send nursing students
- Possible solar or other projects at clinics
  - Depending on student and faculty interest



Dr. Jose Miguel Vasquez (right) with newly-hired laboratory technician and modern lab equipment donated by the Sisters of Charity