

# Resume: Ryan Shelby, PhD

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<b>Education:</b>	<b>PhD, Mechanical Engineering</b> , University of California, Berkeley	<b>2013</b>
	Major Field: Design, Minors: Management of Technology & Energy Science Policy	Berkeley, CA, USA
	<b>MS, Mechanical Engineering</b> , University of California, Berkeley	<b>2008</b>
	Major Field: Design, Engineering and Business for Sustainability Certificate	Berkeley, CA, USA
	<b>BS, Mechanical Engineering</b> , Alabama Agricultural & Mechanical University	<b>2006</b>
	Major Field: Propulsion Systems	Normal, AL, USA

## Professional Experience:

**United States Agency for International Development (USAID)** **Pretoria, South Africa**  
**Supervisory Regional Engineering Officer** **Oct. 2019 - Current**

- Serves as the main infrastructure expert for 14 countries and provides technical guidance for the construction, operations, and maintenance of infrastructure for economic growth, education, health, and sanitation endeavors.
- Developed quality assurance and control guidance to aid in the implementation of a 47 km elephant fence to prevent human-wildlife interactions and trafficking.
- Conducted constructability and design suitability analysis of the Neonatal Intensive Care Unit designs and construction cost estimates in Zambia
- Developed construction plan to install handwashing stations in 131 high-risk areas which allowed 2,310 teachers returned to work and 70,443 students to safely resume their educational and social learning during the pandemic.
- Oversaw the implementation of the elastomeric roof coating to fix the water leakage in the Ubunye office building and avoided a halt to building operations and a \$1.5m full roof replacement.
- Held virtual troubleshooting sessions with staff to assuage concerns regarding vaccine enrollment and ensured compliance to safety protocols at vaccination site which resulted in 90% of USAID staff receiving vaccines doses.
- Mentor entry level local staff and provide opportunities to develop public speaking and project management skills

**United States Agency for International Development (USAID)** **Port-Au-Prince, Haiti**  
**Foreign Service Engineering Officer** **Sept. 2017 – Sept. 2019**

- Managed a team that concentrated on (1) climate resilient infrastructure, (2) housing rehabilitation, (3) clean energy systems, and (4) the incorporation of Disaster Risk Reduction (DRR) policies for housing in Haiti.
- Oversaw reconstruction of 5,000 home roofs with hurricane straps and other structural upgrades
- Provided 2,025 people with training in roof rehabilitation techniques; 60% of which were women
- Rehabilitated public toilets, latrines and handwashing stations at 12 schools and four cholera clinics which enabled 3,772 students and 153 teachers to benefit from improved sanitary blocks
- Supervised the reconstruction of 1.3 km of roadway in Canaan to address traffic congestion and market access issues
- Provided technical justifications for the close-out and recovery of \$832,527.76 from a 2015 terminated contract

**United States Agency for International Development (USAID)** **Washington, DC**  
**Senior Energy Engineering Advisor** **Sept. 2013 – Sept. 2017**

- Served as a Contracting/Agreement Officer Representative (C/AOR) and program manager for contracts, cooperative agreements and fixed obligation grants associated with the \$47.1 million multi-donor funded Powering Agriculture: Energy Grand Challenge for Development initiative (PAEGC)
- Provided technical direction and support for the development of the PAEGC website, newsletter, and communication/outreach strategy to disseminate lessons learned and results from PAEGC innovators
- Conducted technical and financial due diligence on the private sector partners for Power Africa's Beyond the Grid sub-initiative to help increase private sector investment in emerging energy markets in target countries
- Provided temporary duty (TDY) support to USAID's Pakistan Mission for the development of Statement of Work (SOW) to support electricity sector commercialization and private sector engagement in clean energy generation
- Developed concept note to deliver technical guidance for Power Africa's transaction advisor to the Government of Tanzania's (GoT) Rural Energy Agency (REA) on a smart grid pilot project
- Represented USAID in interagency and international meetings with BMZ, GIZ, SIDA, DOS, USDA-FAS, DOE, & World Bank on clean energy solutions, energy access, minigrids, and decentralized energy projects

**Community Assessment of Renewable Energy and Sustainability (CARES)  
Co-Founder & Program Manager**

**Berkeley & Ukiah, CA  
Nov. 2007 - Sept. 2013**

- Served as the primary technical authority for a climate change adaptation and renewable energy development collaboration with the Pinoleville Pomo Nation (PPN), a Native American tribe near Ukiah, CA to co-design and implement culturally inspired, energy efficient straw bale sustainable homes and renewable energy power systems
- Led 15 person engineering team for the PPN culturally inspired, sustainable housing project that incorporated AIA, LEED, and Energy Star green building design principles, codes, and technologies
- Worked with tribal partners to secure ~\$1.4 million in funding for PPN homes & funding from the 2013 START Renewable Energy Project Development program for a PPN solar utility based on previous feasibility studies
- Monitored progress and ensured compliance to PPN's design specifications through inspections of project sites and consultations with the PPN Tribal Leadership.
- Worked with EPA Region 9 office to co-design and implement green building codes for the PPN's sustainable homes
- Conducted feasibility study and created designs for utility scale renewable energy power systems (1MW – 5MW solar PV)
- Oversaw the transition of CARES in 2010 to a seed funded research center in UC Berkeley's i4Energy Center in CITRIS

**Millennium Challenge Corporation  
MCC-ASU Science, Technology, & Innovation Fellow**

**Washington, DC  
Jan. 2013 - July 2013**

- Identified electricity grid extension and minigrid designs options for the expansion of electricity services in six Sub Saharan African (SSA) countries: (1) Sierra Leone, (2) Liberia, (3) Ghana, (4) Benin, (5) Tanzania, and (6) Malawi
- Developed case studies on the lessons learned from the electrification efforts of Brazil, China, Nepal, and Vietnam
- Estimated levelized cost of energy for renewable energy systems in minigrid & electricity grid extension configurations
- Conducted feasibility study on organic feedstock and created designs for an anaerobic digestion system (300kW-1MW)
- Developed policy interventions related to cost reflective tariffs and independent power producers for mini-grids
- Represented MCC in interagency and international meetings with USDA-FAS, DOE, & World Bank on mini-grids

**National Academy of Engineering**

**Washington, DC**

**J. Herbert Hollomon and Christine Mirzayan Science & Technology Policy Fellow Aug. 2012 - Jan. 2013**

- Developed policy briefs and actor networks on election violence, crisis mapping, and internally displaced persons in Libya, Haiti, & Kenya for the NAE & U.S. Institute of Peace Roundtable on Technology, Science & Peacebuilding
- Identified system engineering applications for foreign affairs and peace building endeavors in Libya, Haiti, and Kenya
- Performed a preliminary review of the alignment of the US based undergraduate and graduate programs to attributes listed in the NAE's *The Engineer of 2020* and *Educating the Engineer of 2020* reports

**Honors & Awards:**

- [Service to America Medal in National Security and International Affairs](#), Partnership for Public Service, 2019
- Superior Honor Group Award, Construction Risk Working Group, USAID, 2017
- Meritorious Honor Award, Power Africa, USAID, 2014
- [Denice D. Denton Best Paper Award, ASEE Women in Engineering Division](#), 2012
- [Chancellor's Awards for Public Service](#), CARES - Pinoleville Pomo Nation Partnership, 2010

**Selected Publications:**

- Mashnik, D., Jacobus, H., Barghouth, A., Wang, E., Blanchard, J., and **Shelby, R.**, (2017). "Increasing productivity through irrigation: Problems and solutions implemented in Africa and Asia". Sustainable Energy Technologies and Assessments, Volume 22, pp. 220-227
- **Shelby, R.** (2013). "Co-Designing Sustainable Communities Using Indigenous Knowledge: Pinoleville Pomo Nation Partnership". 2013 Society for Social Studies of Science (4S) Annual Meeting
- Edmunds, D., **Shelby, R.**, James, A., Steele, L., Baker, M., Perez, Y., and TallBear, K. (2013). "Tribal Housing, Co-Design & Cultural Sovereignty". *Science, Technology, & Human Values*, 38(6), pp. 801-828.
- Farzana, A., Wang, J., **Shelby, R.**, Patten, E., and Pruitt, L. (2013). "The Impact of a First-Year Leadership and Service Learning Module: A Follow-up Study", In *Proceedings of 2013 American Society of Engineering Education Annual Conference and Exposition*, June 23-26, 2013, Atlanta, Georgia, USA
- **Shelby, R.**, Patten, E., Farzana, A., Pruitt, L., Walker, G., and Wang, J. (2013). "Implementation of Leadership and Service Learning in a First-Year Engineering Course Enhances Professional Skills", *International Journal of Engineering Education*, 29(1), pp. 1-14

**Languages:**

English: Native (ILR Level 5)

French: Professional Working Proficiency (ILR Level 3)