

Kricia Ruano Espinoza

CONTACT INFORMATION	<p>Fisk/Vanderbilt University Master's to PhD Bridge Program 1303A Meharry Blvd Nashville, TN 37208</p>	<p>Cell: +1-971-246-0659 E-mail: ruanoesp@gmail.com</p>
EDUCATION	<p>Fisk/Vanderbilt University Nashville, TN</p> <p>M.A., Physics, Projected: May 2020</p> <ul style="list-style-type: none">• Thesis Topic: <i>Europium-doped strontium iodide scintillation crystals in dual energy x-ray absorptiometry (DEXA) for bone densitometry imaging</i>• Adviser: Dr. Arnold Burger• Area of study: Mathematics and materials science <p>Willamette University Salem, OR</p> <p>B.A., Physics and Chemistry, May 2018</p> <ul style="list-style-type: none">• Thesis Topic: <i>Kinetic modeling of myosin VI and mutant myosin VI associated with hypertrophic cardiomyopathy</i>• Adviser: Professor David Altman• Area of Study: Biophysics <p>Aloha High School Aloha, OR</p> <p>Salutatorian, International Advanced Placement Diploma, June 2014</p>	
CURRENT RESEARCH	<p>Development and implementation of novel radiation sensors for biological applications: Optimization of $SrI_2(EU^{2+})$ scintillation crystals to facilitate low-power, high-resolution and light-weight sensor application use in dual energy X-ray absorptiometry (DEXA) and radio-identification methods. Crystals are coupled to a pixelated SiPM array to generate 2D images of phantom samples to warrant large-scale implementation in biomedical imaging application.</p>	
RESEARCH	<p>University of Pittsburgh School of Medicine Pittsburgh, PA Molecular Biophysics and Structural Biology June 2017 to July 2018 Determination of the transforming growth factor TGF-β mimic (Hp-TGM) signaling protein structure and binding affinity with TβR-I and TβR-II receptors via 3D-NMR and SPR.</p> <p>Willamette University Salem, OR Department of Physics and Chemistry February 2017 to May 2018 Kinetic modeling of the chemomechanical cycle of myosin VI motor protein <i>in vitro</i> motility assays and its mutant counterpart associated with hypertrophic cardiomyopathy (HCM)</p> <p>Washington University in St. Louis Institute of Public Health St. Louis, MO Division of Nephrology June 2018 to July 2018 Outcomes research in transplant procedures: obese simultaneous pancreas and kidney transplant (SPKT) recipients with type-2 diabetes mellitus (DM-2), three-month pancreas graft function in SPKT in DM-2 patients, pancreas transplants alone from donation after cardiac and brain death, and hepatitis C-positive kidneys transplants</p>	
EXPERIENCE	<p>Emergency Department Medical Scribe Salem Health Hospital & Adventist Medical Center October 2015 to May 2018 Work as a personal assistant to the physician; performing documentation in the EHR, gathering information for the patient's visit, and partnering with the physician to deliver the pinnacle of efficient patient care. Adept proficiency with Epic and CERNER software.</p>	

Willamette West Habitat for Humanity Intern

Willamette West Habitat for Humanity | June 2014 to August 2014

Program with the Bank of America where students work with non profit organizations during the Summer and travel to Washington, D.C. for a leadership summit. Involved data entry, public speaking, model house building, working in construction sites and helping low income, low resource families

CONFERENCE TALKS

- [1] Ruano-Espinoza, K., Alhamad, T. Mathematical modeling of Myosin VI and mutant Myosin VI associated with hypertrophic cardiomyopathy. In: *PNW Mathematical Association of America*, Seattle, WA, April 20-24, 2018.
- [2] Ruano-Espinoza, K., Alhamad, T. Outcomes of pancreas transplants alone from donation after cardiac death and donation after brain death. In: *Washington University in St. Louis Institute for Public Health Summer Research Program*, St. Louis, MO, July 30-31, 2018.
- [3] Ruano-Espinoza, K., Gomez, M., Liviu, M., Burger, A. Europium-doped strontium iodide scintillator crystals in dual energy x-ray absorptiometry. In: *2019 Southeast Chapter of American Association of Physicists in Medicine Symposium Scientific Meeting: 3.0 MedPhys Slam*, Savannah, GA, February 21-23, 2019.
- [4] Ruano-Espinoza, K., Wall, D., Lentine, K. L., Hammad, D., Wellen, J., Brennan, D. C., Alhamad, T. Pancreas transplant alone using donation after cardiac death donors has similar outcomes as donation after brain death donors. In: *2019 American Transplant Congress*, Boston, MA, June 1-5, 2019.

INVITED GUEST

- [5] Ruano-Espinoza, K. Women Chemists Committee Overcoming Challenges Award. In: *256th ACS National Meeting and Exposition*, Boston, MA, Aug 19-22, 2018.
- [6] Ruano-Espinoza, K. Press surrogate: DACA representative. In: *SACNAS 2018*, San Antonio, TX, Oct 11-13, 2018.

CONFERENCE POSTERS

- [7] Ruano-Espinoza, K., Altman, D. Kinetic modeling of Myosin VI and a mutant myosin VI associated with hypertrophic cardiomyopathy. In: *American Physical Society: Conference for Undergraduate Women in Physics*. January, 2018. Poster abstract.
- [8] Rumley, E., Ruano, K., Altman, D. The kinetic activity of multiple myosin VI monomers. In: *American Physical Society: Conference for Undergraduate Women in Physics*. January, 2018. Poster abstract.
- [9] Ruano-Espinoza, K., Alhamad, T. Kinetic modeling of Myosin VI and a mutant myosin VI associated with hypertrophic cardiomyopathy. In: *62nd Annual Meeting of the Biophysical Society*. February, 2018. Poster abstract.
- [10] Ruano-Espinoza, K., Alhamad, T. Kinetic modeling of Myosin VI and a mutant myosin VI associated with hypertrophic cardiomyopathy. In: *Joint Linfield College-Willamette University Dept of Physics Thesis Poster Presentation*. April, 2018. Poster abstract.
- [11] Ruano-Espinoza, K., Burger, A., Matei, L. Strontium iodide scintillator crystals in dual energy x-ray absorptiometry (DEXA) for bone densitometry imaging. In: *2018 American Physical Society Bridge Program and National Mentoring Community Conference*. November 16-18, 2018. Poster abstract.
- [12] Ruano-Espinoza, K., Gomez, M., Liviu, M., Burger, A. Europium-doped strontium iodide scintillator crystals in dual energy x-ray absorptiometry. In: *2019 Southeast Chapter of American Association of Physicists in Medicine Symposium Scientific Meeting*, Savannah, GA, February 21-23, 2019. Poster abstract.

- [13] Alhamad, T., Ruano-Espinoza, K., Hammad, D., Wellen, J., Daniel C. Brennan, Lentine, K. L. Obese simultaneous pancreas and kidney transplant recipients in type 2 Diabetes have similar risks of pancreas failure as non-obese. In: *2019 American Transplant Congress*, Boston, MA, June 1-5, 2019. Poster abstract.

OUTREACH

- [14] Willamette University Webber Science Outreach Program: participated as a Physics Webber Scholar for Willamette University and participated in weekly science lessons at the local elementary school, led a monthly lesson on a physics topic with interactive physics activities, hands-on equipment, and provided engaging class worksheets. The mission of the program is to incite interest in sciences at an early age, and engage children in an understanding that the face of a science often includes a diverse group of people, including women and minorities.
- [15] DACA scientist activist: upon entering college, I've become an active and proud voice for undocumented scientists (as one myself). I've been awarded an overcoming challenges award for my efforts and achievements at the American Chemical Society where I gave a discussion of my experiences as an undocumented scientist, shared my experiences as a press surrogate at the Society for the Advancement of Chicanos/Latinos and Native Americans in Science, participated in a short television clip on Telemundo regarding my attendance at SACNAS, and was featured in a piece regarding DACA students in science for Scientific American. Everyday, I continue to garner attention on issues that pertain this disenfranchised community, in hopes that one day we achieve the change we deserve.

AWARDS

- International Advanced Placement Diploma (June 2014)
- All-Star Athletic Academic Award (2011-2014)
- Intercollegiate Tennis Association Scholar Awardee (June 2015)
- Steve Hunt Classic Tournament Debate Tournament Semi-Finalist (September 2017-2018)
- Mark O. Hatfield Debate Tournament (3rd/2nd place), 4th best speaker (April 2017-2018)
- Cornell University IV Debate Tournament Champion, 2nd best speaker (February, 2018)
- Pan Pacific Debate Championships Semi-Finalist (February, 2018)
- Hispanic Scholarship Fund Award (September 2014-2018)
- Willamette University Ralph E. Purvine Award (May 2016, 2017)
- William B. Webber Physics Award (May 2017)
- Willamette University Debate Union Logal Will Prize (May 2018)
- American Chemical Society Overcoming Challenges Award (August 2018)

PROFESSIONAL MEMBERSHIPS

- American Physical Society (2015–present)
- National Society of College Scholars Member (2014–present)
- Institute for Healthcare Improvement (2015–2018)
- American Association of Physicists in Medicine (2017–present)
- American Association of University Women (2017–present)
- American Society for Radiation Oncology (2018–present)
- American Chemical Society (2018–present)
- Society of Hispanic Professional Engineers (2018–present)
- Society for the Advancement of Chicanos and Native Americans in Science (2018–present)
- Southeast Chapter of the American Association of Physicists in Medicine (2018–present)

ORGANIZATIONS

- Willamette University Intercollegiate Debate (2015-2018)
- Willamette University Division III Women's Tennis (2014-2016)
- Vanderbilt University Society of Hispanic Professional Engineers (2018- present)
- Vanderbilt University Latino Medical Student Organization (2018- present)
- Vanderbilt University Women's Water Polo (2018 - present)

- Vanderbilt University Society for the Advancement of Chicanos/Hispanic and Native Americans in Science (2018- present)
- Vanderbilt University Intercollegiate Debate Graduate Student Assistant Coach (2018- present)

SKILLS

Computer Programming: Proficiency with SAS, limited experience with Python and MATLAB
Languages: Fluent in Spanish, beginner-intermediate in French and Portuguese
Office: WPM: 80-92, Proficiency with Microsoft Office, Epic: Electronic Health Record Software, LaTeX, CERNER