KAWAI TAM
Associate Professor of Teaching in Chemical and Environmental Engineering (CEE)
Bourns College of Engineering, University of California, Riverside (UCR)
Riverside, CA 92521, (951) 827-2498
website: https://profiles.ucr.edu/app/home/profile/arvint

Education

Ph.D., Biosystems Engineering, McGill University — 2002
Ste-Anne-de-Bellevue, Quebec, Canada
Dissertation Title: Removal of Multiple Substrates in a Mixed Culture Process for the Treatment of Brewery Wastewater

M. Eng., Chemical Engineering, McGill University — 1994
Montreal, Quebec, Canada
Thesis Title: Neutralization of an Acidic Effluent Using Magnesium Hydroxide

B. Eng., Chemical Engineering, McGill University — 1992
Montreal, Quebec, Canada
Concentration: Water Pollution Control

Academic Appointments

Associate Professor of Teaching (tenured) — 2016-present
University of California, Riverside
Department of Chemical and Environmental Engineering

Faculty-in-Residence (Lecturer) — 1997-2016
University of California, Riverside
Department of Chemical and Environmental Engineering

Research and Project Appointments/ Industrial Experience

Post-doctoral scholar — 2004 - 2009
University of California, Riverside
Department of Chemical and Environmental Engineering

Assistant Project Scientist — 2009
University of California, Riverside
College of Engineering-Center for Environmental Research and Technology (CE-CERT)

Research Assistant — 1997 – 1998
University of California, Riverside
Department of Chemical and Environmental Engineering

Research Assistant and Teaching Assistant — 1994 - 1996
McGill University
Department of Biosystems Engineering

Consultant — 1994 - 1995
Corona Technologies Inc., Vaudreuil, Quebec, Canada
Collaboration with the Agriculture and Agri-Food Canada Research Center

University Committee and Administrative Service

Department of Chemical and Environmental Engineering

Chair of Undergraduate Education and ABET Committee	2016 - present
Undergraduate Advisor	2016 - present
Undergraduate Education and ABET Committee Member	2011- present
Public Relations and Communication Committee Member	2014 - 2016
Ad hoc committee member for Lecturer hire	2013

Bourns College of Engineering

Ad hoc committee member for Merit Review of Lecturer, Department of Mechanical Engineering	2013, 2016
Engineers Without Borders, Chapter Advisor at UC Riverside	2008 - present

University Level

Promoting Research Objectivity Committee	2018-present
R'Garden (UCR Community Garden) Advisory Committee	2017-present
Chancellor's Committee on Sustainability – Curriculum Working Group	2012-2016
Non-Senate Faculty Excellence Review Committee	2010-2014

Scholarship and Awards

Chancellor's Award for Excellence in Undergraduate Research and Creative Achievement	2018
The Bourns College of Engineering Excellence in Teaching Award	2018
World Water Forum Award	2017
Orange County Engineering Council Outstanding Engineering Educator Award	2015
Bourns College of Engineering Recognition Award for inventing a smog-reducing lawnmower device	2013
Western Municipal Water District Travel Awards	2009 / 2010 / 2011/ 2017/ 2018
Western Municipal Water District Water Educator of the Year Award	2007
UCR Instructional Support in Undergraduate Education Award	Winter 2007
UCR Non-Senate Faculty Professional Development Award	2005-07/ 2008-11/ 2013-16
The Bourns College of Engineering Outstanding Lecturer Award	2004-2005
ACS PRF summer scholarship, Massachusetts Institute of Technology	2005

Teaching Experience

Various pedagogical strategies for integrative STEM education have been implemented into my courses. Annual attendance of conferences enables the integration of current information in technology, research, and educational strategies in the courses below. Introductory courses have successfully increased retention of first-year Chemical and Environmental Engineering students to ~90%.

Courses taught at UC Riverside

- CEE 10 – Introduction to Chemical and Environmental Engineering
- CEE 11 - Introduction to Bioengineering
- CEE 132 / CEE 232 – Green Engineering
- CHE 110A – Chemical Process Analysis
- CHE 116 – Heat Transfer
- CHE 118 – Process Dynamics and Control
- CHE 160 – Chemical Engineering Laboratory
- CHE 175A/B – Chemical Process Design

ENVE 120 – Unit Operations and Processes in Environmental Engineering
ENVE 171 – Introduction to Environmental Engineering
ENVE 142 - Water Quality Engineering
ENVE 175A/B – Senior Design Project
ENSC 144 – Solid Waste Management
ENGR 118 – Engineering Modeling and Analysis

Graduate Student, Undergraduate Student, and High School Student Mentoring
Student Professional Development: Awards and Grants

Mentorship, supervision, and consultation to undergraduate students in the following design competition awards and grants:
Total number of awards and grants since 2005: **63**
Total funds: > $550,000 / **External funding: >$500,000**

- 2018 Eco Innovators / Spring Green Expo – First and Second Place Team Awards
- 2018 BIG IDEAS @ Berkeley "Scale-UP" contest – Third Place Award
- 2018 Green Campus Action Plan grants (2) from UCR
- 2018 WERC/IEE competition 2nd Place Task 7 Award and Terry McManus Award
- 2017 VentureWell Stage 1 award
- 2017-19 Phase II EPA P3 student design competition **EPA Grant Number**: SU839356
- 2017-18 Phase I EPA P3 student design competition **EPA Grant Number**: SU839310
- 2017 Phase II EPA P3 student design competition **EPA Grant Number:** SU836952
- 2017 WERC/IEE competition 1st Place Task 1 Award and Terry McManus Award
- 2016 Sustainable Design Award at National Sustainable Design Expo – First Place
- 2016 BIG IDEAS @ Berkeley contest – Second Place Award
- 2016 Eco Innovators / Spring Green Expo – First and Second Place Team Awards
- 2016-2017 Southern California World Water Forum College Grant, MWD
- 2016 WERC/IEE competition 1st Place Peer Review Award & 2nd Place Task 1 Award
- 2015 Odebrecht Award for Sustainable Development – First Place Award
- 2015-2016 Phase I EPA P3 student design competition **EPA Grant Number:** SU836142
- 2015-2016 Phase I EPA P3 student design competition **EPA Grant Number:** SU836126
- 2015 Product and Manufacturing System Design Contest – 2nd Place award
- 2015 Eco Innovators / Spring Green Expo – First Place Team Award
- 2015 Phase II EPA P3 Honorable Mention Award (SU835702)
- 2015 WERC/IEE competition 1st Place Award & Intel Environmental Innovation Award
- 2014-2015 Phase I EPA P3 student design competition **EPA Grant Number:** SU835698
- 2014-2015 Phase I EPA P3 student design competition **EPA Grant Number:** SU835702
- 2014 Eco Innovators / Spring Green Expo – First Place Team Award
- 2014 Phase II EPA P3 Honorable Mention Award (SU835533)
- 2013 Proof of Concept Technology Commercialization Award, UCR ($33,100)
- 2013-2014 Phase I EPA P3 student design competition **EPA Grant Number:** SU835533
- 2013 Phase II EPA P3 Honorable Mention Award (SU835346)
- 2013 WERC competition, 1st Place Award & Student Peer Review Award
- 2012-2013 Phase 1 EPA P3 student design competition **EPA Grant Number:** SU835346
- 2012-2013 Southern California World Water Forum College Grant, MWD
- 2012 – 2014 Phase 2 EPA P3 Award ($90,000) **EPA Grant Number:** SU836024
- 2012 WERC competition, First Place Award & Intel Environmental Innovation Award

- 2011-2012 Phase I EPA P3 student design competition **EPA Grant Number:** SU836024
- 2011 Phase II EPA P3 student design competition Student Choice Award (SU834726)
- 2011 WERC competition, First Place Award & Terry McManus Outstanding Student Award
- 2011 Hydrogen student design contest, 2nd place – Honorable Mention Award
- 2011 American Public Power Association (APPA) Demonstration of Energy-Efficient Developments (DEED) Research Grants (two separate teams)
- 2010-2011 Phase I EPA P3 student design competition **EPA Grant Number:** SU834726
- 2010-2011 Phase I EPA P3 student design competition **EPA Grant Number:** SU834709
- 2010 Phase II EPA P3 student design competition Honorable Mention Award (SU834325)
- 2009-2010 Phase I EPA P3 student design competition **EPA Grant Number:** SU834325
- 2009-2010 Phase I EPA P3 student design competition **EPA Grant Number:** SU834294
- 2010 WERC competition, Second Place Award
- 2009 WERC competition, Terry McManus Outstanding Student Award
- 2008-2009 Southern California World Water Forum College Grant, MWD
- 2008 1st prize in the undergraduate student poster/paper competition at the annual Air & Waste Management Association conference, Portland, OR, June 24, 2008
- 2007-2008 Phase I EPA P3 student design competition **EPA Grant Number:** SU833526
- 2007 WERC competition, U.S.D.A. Teamwork award for innovative use of agricultural waste for value added products / Terry McManus Outstanding Student Award
- 2007 1st prize in the International student design competition hosted by Intelligen
- 2005-2006 Phase I EPA P3 student design competition **EPA Grant Number:** SU832493
- 2005-2006 Southern California World Water Forum College Grant, MWD

Undergraduate student advisees:

Fostered effective collaboration across different STEM disciplines and the School of Business. Total number of undergraduate students for design competitions and undergraduate research advised during career: **266** (**54 female students**, **88 underrepresented minority (URM) students**). UC Riverside is designated as a Hispanic Serving Institution.

Students are from the Chemical and Environmental Engineering (CEE) department unless otherwise stated as MSE (Material Science and Engineering), ME (Mechanical Engineering), CSE (Computer Science and Engineering), EE (Electrical Engineering), BIEN (Bioengineering), ECON (Economics), or BUS (Business)

2017-2018: Angelica Franco, Brittany Truong (MSE), Daniel Murphy (MSE), Marissa Hebert (BUS), Kayla Cervera, Riya Sanghvi, Michael Pfaff, Chris Benitez, Aaron Ramirez, Joseph Frausto, Alexis Cardenas, Soraya Johnson, Vanessa Coria, Rayed Ahmed, Kyle Semelka (CSE), Ji Hwan Kim (CSE), Samantha Vu (CSE), Amanda Cao (CSE), Thomas Eckel, Nina Nester, Tia Borja, Marvin Dela Cruz (CSE), Kayla Cervera, Michelle Le (ME), Lee Tsao, Kenny Kuba (ME), Duy Dao, Giancarlo Santiago Rodriguez, Jonathan Parker, Brandon Sanders, Juan Leyva, Thania Flores Soto, Hannah Keife, Jourdan Joyner, Taylor Turner

2016-2017: Hira Yoshihara-Saint, Keith Frogue, Stephen Boggs, Christian Urena, Thania Flores Soto, Barbara Garayzar (ME), Ivan Dang, Mark Hsu, Michael Pfaff, Riya Sanghvi, Keanu Valibia (BUS), Akshay Gadkari (ECON), Edgar Palmes (MSE), Brandon

Aparicio, Pablo Hernandez, Sarah Alfeerawi, Ryan Fekete, Richard Findlay, Dillon Gidcumb (MSE), Jasmine Le, Alexis Cardenas, Eric Lin, Damini Bhana, Jesse Mendoza, Alex Lara, Juan Leyva, Ellyn Ngo, Juan Martinez-Galvan, Vanessa Coria, Kayla Ross, Joanna Collado, David Zendejas

2015-2016: Kevin Li, Jacqueline Ortega, Jose Corbala-Delgado, Brian Rojas-Lerena, Brandon Leu (MSE), Dennis Jones (BUS), Brian Perdomo, Moe Aung, Haala Al-Hadithy, Bradley Buege (BUS), Reginald Evans, Huda Milbes, Robin Riehn, Jeffrey Hsieh (EE), Shahid Mohammed (BUS), Jesse Mendoza, Eric Lin, Nicolas Alves (BUS), Christopher Connors, Joseph Fan, Brian Leu, Diego Novoa, Johny Nguyen, Karim Masarweh, Franklin Gonzalez, Kenneth Orellana, Taljinder Kaur (BUS)

2014-2015: Joel Sanchez, Chris Yang, Jeniene Abugherir, Lamees Alkamis, Colin Eckerle, Kalyn Situ, Alonso Mejia, Brian Luck, Andrew Madrigal, Matthew Tayag, Priyanka Singh, Anna Almario, Alyssa Yan, Julianne Rolf, Samantha Mak, Ryan Shoeman (EE), Christian Alcaraz, Anthony Ramirez, Diego Novoa, Johny Nguyen, Stanley Hanlim (ME), Vincent Saint, Karim Masarweh, Franklin Gonzalez, Kenneth Orellana, Julie Nguyen, Charlette Grigorian, Sergio Morales (CSE), Anna Tatyanich (ME)

2013-2014: Wartini Ng, Jonathan Matson, Timothy Chow, Brian Cruz, Gregory Brinley, Dennis Nguyen, Justin Tao, Elizabeth Mende, Kyle Russell, Patrick Tan, Kelly McCoy, Edwin Rodriguez, Jimmy Liang, Louis Lancaster, Jessica Moncayo, Jing Yang, Henry Yang, Maria Sanchez, Jeffrey Tsai, Erika Aragon

2012-2013: Risa Guysi, Joshua Callihan, Jonya Blahut, Holly Clarke, Rosalva Chavez, Victor Aguilar, Joseph Fiore, Diana Elazem, Calvin Cao, Duc Nguyen, Carlos Espinoza, William Lichtenberg, Vincent Chen, Jerell Mendoza (MSE), Eduardo Cuevas, Zachary Nwabudike, Miguel Galicia, Carlos Rodriguez, Shrey Prajapati, Linh Tong, Chhay Sun, Richard Lu, David He, Estevan Ochoa, Jason Farag, Jung Park, Christopher Quach

2011-2012: Jesse Lozano (ME), Thomas Kwan, Sarah Bates, Elizabeth Horstman, Shanin Quazi, Christian Contreras, Joon-Bok Lee, Jason Skovgard, Marcus Chiu, Trevor Vandergrift, Steven Chavez, Gregory Hammar, Rachel Watson, Howard Lam, Brandon Gray, Jesus Sahagun

2010-2011: Alfred Liu, Andrew Mikkelson, James Gutierrez, Cindy Brito, Caleb Stanton, Michael Bagtang, Stephanie Stasiuk, Joseph Pichette, Alex Duchon, Ariana Villanueva, Etinosa Agbonwaneten, Kenny Chau, Stephen Opot, Nhat Nguyen, Christian Contreras, Joon-Bok Lee, Jason Skovgard, Marcus Chiu, Frank Soberanis, Ian Miller, Luke Turalitsch, Davil Garcia (MSE), Alexander Dudchenko

2009-2010: Wesley Chen, Luke Chen, Alexander Chen, Joshua Comfort, Thinh Vo, Douglas Duchon, Phillip Brendecke, Matthew Graham, Ruddy Argueta, Ricardo Torres, Javier Aceves, Kyle Pease, Dylan Switzer, Mina Ghabbour, Robert Bonderer, Bryan Goldsmith

2008-2009: Tyler Colyer, Mihir Desai, Breanne Bornemann, Troy Ezeh, Anthony Turgman, Josh Garong, Vu Nguyen, Christine Kwon, Chris Salinas, Elizha West, John Johnson, Parham Javadinajjar

2007-2008: Deisy Rios, Piotr Kostecki, Justin Kirojan, Gregory Jocson, Edward Tseng, Fornia La, Van Nguyen, David Kubeck, Rebecca Austin, Jason Bentley, Yuh Jiun Tan, Billy Phan, Su Nwe, Kai Ma, Lindsay Yee, Christina Zapata, Nichola Kinsinger, Quoc-Hung Phan

2006-2007: Nirav Patel, Shaena Stewart, Christopher Salam, Sean Brady, Gregory Leung, Tongzhou Wang, Brian Hawkinson, Dewi Nilasari

2005-2006: Roland Cusick, Temitope Ogunyoku, Greg Guillen, Andrew Chin, Steven Gebelin.

Undergraduate Honors Thesis Advisees

Upper Division Honors Thesis co-mentorship of undergraduate CEE student, Joon Bok Lee on a thesis entitled, "Peptide-guided Cu_2S and CuS nanostructure assembly", 2010-11.

Upper Division Honors Thesis mentorship of undergraduate CEE student, Kalyn Situ, on a thesis entitled, "Technology for the reduction of particulate matter emissions from commercial cooking", 2014-15.

Upper Division Honors Thesis mentorship of undergraduate CEE student, Sarah Alfeerawi, on a thesis entitled, "Sustain-a-Drain: an advanced storm drain maintenance process for municipalities and industries", 2016-17.

Upper Division Honors Thesis mentorship of undergraduate Business student, Marissa Hebert, on a thesis entitled, "Husk-to-Home: business plan", 2017- present

Graduate student advisees

Xin Fan (2009), Xiaoming Lu (2009), Qian Luo (2009), Tao Li (2009), Wei He (2009)

High school student advisee

Julie Pang (2004)

Select Professional Development Training

Faculty Professional Development Workshop at UCR, "Tricks to Grant Writing Trade", Riverside, CA, Nov. 2018

Faculty Professional Development Workshop at UCR, "Communication and Negotiation Strategies with colleagues and students", Riverside, CA, Mar. 2018

Selected participant in National Academy of Engineering (NAE) workshop on "Overcoming Challenges for Infusing Ethics into the Development of Engineers", Jan. 2018

Industry-led workshop on Process Safety at ADM (Archer Daniels Midlands), Center for Chemical Process Safety (CCPS), Decatur, IL, July 2017.

Industry-led workshop on Process safety at Chevron, CCPS, Richmond, CA, Aug. 2015.

American Ground Water Trust Education Program, "Legislative & Scientific Issues Influencing Future Ground Water Management Options in California", Ontario, CA, Mar. 2007

American Ground Water Trust Education Program, "2006 California Ground Water Institute for Teachers", Dec. 2006

American Society of Mechanical Engineers course, "Fundamentals of Process Safety", Vancouver, BC, Canada, Aug. 2005

American Chemical Society Petroleum Research Fund (ACS PRF) sponsored Summer School for Green Chemistry and Sustainable Energy, MIT, Cambridge, MA, July 2005

Other Synergistic Activities

Chemical and Environmental Engineering (CEE) - Level

Coordinated CEE departmental Board of Advisors meeting May 2018
Coordinated CEE Alumni Board of Advisors meeting March 2017
Orientation presentations to incoming Freshman and Transfer students 2016 - present
Professional Development Milestone presentations to junior students 2016 - present
Invited presenter at Board of Advisors Meetings for CEE 2011, 2015, 2016, 2018
Organized educational seminars in conjunction with Intelligen (simulation software company) Attended by industrial representatives and open for UCR students June 2005 & 2007
Invited speaker/coordinator for Freshman summer Fridays 2004-2005

College and Campus Level

Invited presenter at the SCOT-E Talks (Science, Computing, or Technology Engineering) 2018
Faculty representative of BCOE Boosters Group; cohort of parents and alumni 2018
Invited guest panelist for Engineers Without Borders - UCR Chapter (EWB-UCR) 2018
Invited presenter at the Faculty Innovation Studio Workshop Series – UCR Mar. 2018
Undergraduate Research Symposium Judge for poster presentations 2015-2017
Organization of Women of BCOE quarterly luncheon events 2006-present
Invited speaker for Research Networking Night for the American Institute of Chemical Engineers (AIChE) – UCR Chapter, Society of Women Engineers, and/or Window-to-the-Brain 2015-present
Collaborator with the Agricultural and Operations Center at UCR 2014-present
Invited presenter at the Engineers Without Borders – UCR chapter Feb. 2014
Invited presenter at Board of Advisors Meetings for the College 2011, 2015, 2016, 2018
Collaborator with UCR Undergraduate Research in the Community Undergraduate Education program 2011- present
Collaborator with the UCR Blakely Center for Sustainable Suburban Development 2010–2016
Invited guest panelist for Spring Splash Planet Panel during Earth Week April 2009
Invited guest panelist for Society of Women Engineers (SWE) 2004, 2005, 2007, 2018

Community Level

Presenter at the inaugural Order of the Engineer ceremony at the American Institute of Chemical Engineers, Pittsburgh, PA Oct. 2018
Invited presenter at Business Meets Science event organized by the Research and Economic Development division at UCR to Technology Angels and Investors Oct. 2015
Invited presenter at the Southern California Household Hazardous Waste Information Exchange to members of hazardous waste and recycling organizations throughout California, Thousand Oaks, CA June, 2015
Collaboration with the Real Estate Developer at Victory Gardens on improving energy efficiency in a low-income housing community, Moreno Valley, CA 2011- present
Invited presenter at the World Water Forum College Grant 2012, 2017
Invited presenter at Western Municipal Water District board meetings 2011, 2012
Project and outreach presentations at North High School and Martin Luther King High School, Riverside, CA 2011
Outreach presentation at the UCR – Palm Desert campus in conjunction with the Coachella

Valley Economic Partnership (CVEP) Career Pathways Initiative/Pathways to Success (CPI/PTS) event June 2011

Organizer of the Global Climate Change Workshop for the Riverside Unified School District (RUSD) at CE-CERT Oct. 2009

Outreach coordinator for Science Fair Projects between RUSD high school students and faculty at UCR 2009 - 2010

Science Fair Judge for projects at Magnolia Elementary School 2009, 2013-2014

Media Coverage

Projects and career featured in > 40 press releases, videos, TV, radio broadcasts, and newspaper articles in the Press Enterprise, LA Times, Desert Sun, UCR Today, UCR Alumni magazine, website articles, NPR broadcast, the Riverside Public Utilities' Green Power Report broadcast, EyeWitness News ABC7, Today in LA KNBC-TV, the Weather Channel, and Charter Local Edition Headline News, 2005 – present.
List available upon request.

Professional Memberships

American Institute of Chemical Engineers (AIChE) 1992 - present

American Society of Engineering Education (ASEE) 2014 - present

Select Publications and Presentations

K.Tam, "Next Steps", AIChE, SWE, Window to the Brain associations, invited guest speaker, Nov. 9, 2018, Riverside, CA.

K.Tam, "Fostering Innovation and Creativity Inside and Outside of the Classroom", SCOT-E Talks, invited guest speaker, Nov. 17, 2018, Riverside, CA.

K.Tam, "Teaching Strategies in Chemical and Environmental Engineering Courses", Lightning Talk, Faculty Development workshop, invited guest speaker, Mar. 2, 2018, Riverside, CA

K.Tam, "Interview Tips", Engineers Without Borders – UCR Chapter, invited guest speaker, Feb. 6, 2014, Riverside, CA.

K.Tam, "Silica Removal in Brackish Water", Southern California World Water Forum College Grant Program, invited guest speaker, kick-off event Oct. 7, 2011, Los Angeles, CA.

K. Tam, C.T. Ho, J-H. Lee, M. Lai, C. H. Chang, Y. Rheem, W. Chen, H-G. Hur, N. V. Myung, "Growth mechanism of amorphous selenium nanoparticles synthesized by *Shewanella* sp. HN-41", *Bioscience, Biotechnology and Biochemistry*, 74(4), 696-700, 2010.

K. Tam, "Sustainability – An Overview", Global Climate Change Workshop, College of Engineering – CE-CERT, Riverside, CA, 10/2009.

K. Tam, N. Kinsinger, P. Ayala, F. Qi, W. Shi, N. V. Myung, "Real-time monitoring of *Streptococcus mutans* biofilm formation using quartz crystal microbalance", *Caries Research*, 41, 474-483, 2007.

K. Tam, P. Ayala, N. Kinsinger, F. Qi and N. V. Myung, "Piezoelectric QCM for dental biofilm monitoring", Society for the Advancement of Chicanos and Native Americans in Science (SACNS) National conference, Denver, CO, Sept. 2005

K. Tam, P. Ayala, N. Kinsinger, and N. V. Myung, "Real-time monitoring of *Streptococcus mutans* biofilm formation using quartz crystal microbalance", AIChE 2005 Annual Meeting, Cincinnati, OH, Nov. 2005

K. Tam, M. R. Matsumoto, J. D. Sheppard, "A kinetic model for suspended and attached growth of a defined mixed culture", *Biotechnology Progress,* 21(3), 720 – 727, 2005.

K. Tam, C.H. Yang, D. E. Crowley, M. R. Matsumoto, J.D. Sheppard, "Comparison of PCR-DGGE and selective plating methods for monitoring the dynamics of a mixed culture population in synthetic brewery wastewater", *Biotechnology Progress,* 21(3), 712 – 719, 2005.

J. Kreth, E. Hagerman, K. Tam, J. Merritt, B.M. Wu, N.V. Myung, W. Shi and F. Qi, "Quantitative analyses of *Streptococcus mutans* biofilms with quartz crystal microbalance, microjet impingement, and confocal microscopy". *Biofilms,* (2004) 1, pp 277-284.

K. Tam, M.R. Matsumoto and J.D. Sheppard, "The use of PCR-DGGE for monitoring population dynamics in a mixed culture treatment system". AIChE 2000 Annual Meeting, Nov. 12-17, Los Angeles, CA.

K. Tam, M.R. Matsumoto and J.D. Sheppard, "Mixed culture behavior in a brewery wastewater bioremediation process". AIChE 1997 Annual Meeting, Nov. 16-21, Los Angeles, CA.

K. Tam and J.D. Sheppard, "Brewery wastewater treatment using a computer-controlled biological process". 46th CSChE Conference, Kingston, Ontario, Canada, Sept 29-Oct 2, 1996.

D. Mulligan, K. Tam and D. Berk. "A study of suported molybdenum catalysts for the reduction of SO_2 withCH_4 - effect of sulphidation method". *The Canadian Journal of Chemical Engineering,* (June 1995) 73, pp 351 - 356.

Select Undergraduate Research Grants Awarded

1. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2017
   Title: PanCeria NOx Reducing Device – Selective Catalytic Reduction System for Emission Control of Small Off-Road Engines; Amount awarded: $15,000
   Lead: Kawai Tam; Faculty collaborators: David Cocker (Environ. Eng.), Phillip Christopher (Chem. Eng.); Undergraduate student collaborators: Dillon Gidcumb (Material and Science Eng.), Richard Findlay (Environ. Eng.), Jasmine Le (Chem. Eng.); Alexis Cardenas (Chemical Eng.)

2. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2016, 2017
   Title: Husk-to-Home: A Sustainable Building Material for the Philippines;
   Amount awarded: **$75,000** (2017); $15,000 (2016)
   Lead: Kawai Tam; Faculty Collaborators: Michael Rust (Entomology), Suveen Mathaudhu (Mechanical Engineering); Undergraduate student collaborators: Jacqueline Ortega (Chem. Eng.), Kevin Li, Jose Corbala-Delgado, Brian Rojas-Lorena (all Environ. Eng.), Brandon Leu (Material Science and Eng.), Dennis Jones (Business)

3. Metropolitan Water District of Southern California World Water Forum grant 2016
   Title: Sustain-a-Drain: An Advanced Storm Drain System; Amount awarded: $10,000
   Lead: Kawai Tam; Undergraduate student collaborators: Diego Novoa, Karim Masarweh, Johny Nguyen, Kenneth Orellana (all Chem. Eng.), Franklin Gonzalez (Environ. Eng.), Taljinder Kaur (Business)

4. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2016
Title: Nitreat: A Sustainable Approach to Nitrate Removal from Drinking Water Resources; Amount awarded: $15,000
Lead: Kawai Tam; Faculty Collaborator(s): David Jassby (Environ. Eng.); Undergraduate student collaborators: Hira Yoshihara-Saint, Carlos Gutierrez (both Chem. Eng.), Thania Soto (Environ. Eng.)

5. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2015
Title: Sustain-a-Drain: A Novel Indicative Hydrocarbon Filtration System; Amount Awarded: $15,000
Lead: Kawai Tam; Faculty Collaborator: Mark Matsumoto; Undergraduate student collaborators: Diego Novoa, Karim Masarweh, Johny Nguyen, Kenneth Orellana (all Chem. Eng.), Franklin Gonzalez (Environ. Eng.)

6. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2014
Title: Technology for the Reduction of Particulate Matter Emissions for Residential Propane BBQs; Amount awarded: $15,000
Lead: Kawai Tam; Faculty Collaborator: David Cocker (Environ. Eng.);
Undergraduate student collaborators: Elizabeth Mende, Justin Tao, Gregory Brinley (all Chem. Eng.), Kyle Russell, Dennis Nguyen (Environ. Eng.)

7. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2014
Title: NOx-Out: Selective Catalytic Reduction System for Small Off-road Engines; Amount awarded: $15,000
Lead: Kawai Tam; Faculty Collaborators: David Cocker (Environ. Eng.), Phillip Christopher (Chem. Eng.); Undergraduate student collaborators: Brian Cruz, Wartini Ng, Timothy Chow (all Environ. Eng.), Jonathan Matson (Chem. Eng.)

8. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2013
Title: Test Protocol for Evaluating Smog Eating Roof Tiles; Amount awarded: $15,000
Collaborator: Kawai Tam; Faculty Collaborator: David Cocker (Environ. Eng.);
Undergraduate student collaborators: Calvin Cao, Vincent Chen, Carlos Espinoza, William Lichtenberg, Duc Nguyen, Jessica Moncayo, Carlos Espinoza, Louis Lancaster, Jimmy Liang (all Chem.Eng.), Kelly McCoy, Edwin Rodriguez (Environ. Eng.)

9. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2012
Title: PULSE – Pasteurization Using a Lens and Solar Energy; Amount awarded: $15,000
Lead: Kawai Tam; Faculty Collaborator(s): Mark Matsumoto (Environ. Eng.);
Undergraduate student collaborators: Jason Farag, Christopher Quach, David He, Jung Joon Park, Steven Ochoa (all Environ. Eng.)

10. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2011, 2012
Title: Capturing Attic Heat for Home Energy;
Amount awarded: **$90,000** (2012), $15,000 (2011)
Lead: Kawai Tam; Faculty Collaborator(s): Mark Matsumoto (Environ. Eng.);
Undergraduate student collaborators: Ariana Villanueva, Kenny Chau, Stephen Opot, Nhat Nguyen (all Environ. Eng.), Jesse Lozano (graduate student in Mechanical Eng.), Etinosa Agbonwaneten (Chem. Eng.)

11. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2010
Title: Converting Campus Waste Streams into Locally Used Energy Products through Steam Hydrogasification and Methane Reformation; Amount awarded: $10,000
Lead: Kawai Tam; Faculty collaborator: Joseph Norbeck (Environ. Eng.); Undergraduate student collaborators: Douglas Duchon, Phillip Brendecke, Joshua Comfort, Thinh Vo (all Chem. Eng.), Stephanie Stasiuk (Environ. Eng.)

12. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2010
Title: Grid-Independent Electricity Generation for Remote Areas Based on a Unitized Hydroxide Exchange Membrane Fuel Cell System; Amount awarded: $10,000
Lead: Kawai Tam; Faculty collaborator: Yushan Yan (Chem. Eng.); Undergraduate student collaborators: Christian Contreras, Marcus Chiu, Jason Skovgard, Joon Bok Lee (all Chem. Eng.)

13. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2009
Title: Concentrated Solar Distillation as a Means to Purify Saline/Brackish Water; Amount awarded: $10,000
Lead: Kawai Tam; Faculty collaborator: Mark Matsumoto (Environ. Eng.); Undergraduate student collaborators: Elizha West, John Johnson, Parham Javadinnajjar, Chris Salinas (all Chem. Eng.)

14. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2009
Title: Using Waste to Clean up the Environment: Cellulosic Ethanol, the Future of Fuels; Amount awarded: $10,000
Lead: Kawai Tam; Faculty collaborator: Joseph Norbeck (Environ. Eng.); Undergraduate student collaborators: Anthony Turgman, Vu Nguyen Josh Garong (all Chem. Eng.), Christine Kwon (Environ. Eng.)

15. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2008
Title: Zero Waste Biodiesel: Using Glycerin and Biomass to Create Renewable Energy; Amount awarded: $10,000
Lead: Kawai Tam; Faculty collaborator: Joseph Norbeck (Environ. Eng.); Undergraduate student collaborators: Christopher Salam, Gregory Leung, and Sean Brady (all Environ. Eng.); Quoc-Hung Phan (Chem. Eng.)

16. Environmental Protection Agency - People, Planet and Prosperity (EPA P3) 2005
Title: Rainwater Harvesting: A Simple Means of Supplementing California's Thirst for Water; Amount awarded: $10,000
Lead: Kawai Tam; Faculty collaborator: Mark Matsumoto (Environ. Eng.); Undergraduate student collaborators: Roland Cusick, Greg Guillen, Steven Gebelin, Andrew Chin (all Environ. Eng.), Temitope Ogunyoku (Chem. Eng.)