

Jinny Rhee, Professor
Department of Mechanical and Aerospace Engineering
San José State University

Professional Preparation:

Stanford University, Mechanical Engineering, B.S., 1989

Stanford University, Mechanical Engineering, M.S., 1990

Stanford University, Mechanical Engineering/Thermosciences Division, Ph.D., 1995

Graduate Advisor: Dr. Robert J. Moffat (Mechanical Engineering, Stanford University)

Appointments:

Professor, Mechanical Engineering, San Jose State University, 2013-present

Associate Professor, Mechanical Engineering, San Jose State University, 2008-2013

Assistant Professor, Mechanical Engineering, San Jose State University, 2002-2008

Thermal Engineering Consultant, Rhee Thermosciences, 1995-2002

Journal Publications

1. Devore, N., Yip, H., and Rhee, J., 2013, "Domestic Hot Water Storage Tank: Design and Analysis for Improving Thermal Stratification," accepted for publication in *ASME J Solar Energy Engineering*; also published in *proceedings of the ASME 2012 International Mechanical Engineering Congress & Exposition*, Nov. 9-15, Houston, TX.
2. Rhee, J., Oyamoto, C., Parent, D., Speer, L., Basu, A., and Gerston, L., 2013, "A Co-instruction Pilot of a Multidisciplinary Senior Capstone Project in Sustainability," in press in *ASEE Advances in Engineering Education*.
3. Rhee, J., Parent, D., and Basu, A., 2013, "The Influence of Personality and Ability on Undergraduate Teamwork and Team Performance," SpringerPlus, Vol. 2, No. 1 doi:10.1186/2193-1801-2-16
4. Rhee, J., Parent, D., Oyamoto, C., 2012, "Influence of personality on a senior project combining innovation and entrepreneurship," *Int. J. of Eng. Ed.*, Vol. 28, No. 2, pp. 302-309. Also published in proceedings of 2011 Mudd Design Workshop VIII: Innovation and Entrepreneurship, Claremont, CA May, 2011
5. Rhee, J., Nguyen, C., Grace, M., and Thu, A., 2011, "An effective, low-cost mechanism for direct drag force measurement on solar concentrators," *J. of Wind Engineering and Industrial Aerodynamics*, Vol. 99, pp. 665-669
6. Rhee, J., Cordero, E.C., and Quill, L.R., 2010, "Pilot Implementation of an Interdisciplinary Course on Climate Solutions," *Int. J. of Eng. Ed.*, Vol. 26, No. 2. pp. 391-400. Also published in proceedings of 2009 Mudd Design Workshop VII: Sustaining Sustainable Design, Claremont, CA May 28-30, 2009

7. Rhee, J., Campbell, A., Mariadass, A., and Morhous, B., 2010, "Temperature Stratification from Thermal Diodes in Solar Hot Water Storage Tank," *Solar Energy*, Vol. 84, pp. 507-511
8. Rhee, J., and Bhatt, A., 2007, "Spatial and Temporal Resolution of Conjugate Conduction-Convection Thermal Resistance," *IEEE Transactions on Components and Packaging Technologies*, Dec. 2007, Vol. 30, No. 4, pp. 673-682
9. Rhee, J., and Hernandez, S.I., 2006, "Thermal Management of Electronics in Telecommunications Products: Designing for the Network Equipment Building System (NEBS) Standards," *ASME J. Electronics Packaging*, Dec. 2006, Vol. 128, No. 4, pp. 484-493
10. Rhee, J., and Moffat, R.J., 2006, "Experimental Estimate of the Continuous One-Dimensional Kernel Function in a Rectangular Duct with Forced Convection," *ASME J. Heat Transfer*, Aug. 2006, Vol. 128, No. 8, pp. 811-818
11. DeJong Okamoto, N., Rhee, J., and Mourtos, N.J., 2005, Incorporating the Impact of Engineering Solutions on Society into Technical Engineering Courses, *Global Journal of Engineering Education*, Vol. 9, No. 1, pp. 77-88.
12. Mourtos, N.J., DeJong Okamoto, N.C., and J. Rhee, 2004, "Open-Ended Problem-Solving Skills in Thermal-Fluids Engineering," *Global Journal of Engineering Education*, Vol. 8, No. 2, pp. 189-200. Invited Paper
13. Rhee, J., 2003 "Teaching Efficacy of Web-based Teaching Methods in an Undergraduate Thermodynamics Course," *World Transactions on Engineering and Technology Education*, Vol. 2, No. 1

Conference Papers and Presentations

1. Gonzales, C., and Rhee, J., 2008, "Numerical Optimization of a Cogenerating Parabolic Solar Collector Receiver," *proceedings of the 2008 ASME International Mechanical Engineering Congress and Exposition*, Oct. 31-Nov.6, Boston, MA
2. Kam, P.C., Coppage, A.G., Kam, C.C., Shafian, S., Chun, B., and Rhee, J., 2008, "Lead-free, Fluxless Solder Joints to Synthetic Diamond," *proceedings of the 2008 ASME International Mechanical Engineering Congress and Exposition*, Oct. 31-Nov.6, Boston, MA
3. Rogacs, A., and Rhee, J., 2007, "Performance – Cost Optimization of a Diamond Heat Spreader," *proceedings of 2007 IEEE CPMT Division, Advanced Packaging Materials Conference*, San Jose, CA, Oct. 3-5

4. Beauchemin, M., and Rhee, J., 2006, "Investigation of Cylindrical Pin Fin Heat Sinks at High Altitude," *proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition*, Nov. 5-10, Chicago, IL
5. Seidel, R., and Rhee, J., 2006, "Parametric Analysis of Heat Sink Performance at High Altitudes with Air Impingement Cooling," *proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition*, Nov. 5-10, Chicago, IL
6. Rhee, J., 2006, "The Role of Temperature Superposition in Thermal Management," *proceedings of the 11th IEEE CPMT Advanced Packaging Materials Conference*, Mar. 15-17, Atlanta, GA
7. Bhatt, A., and Rhee, J., 2006, "Thermal Spreading Resistance for Square and Rectangular Entities," *proceedings of the 11th IEEE CPMT Advanced Packaging Materials Conference*, Mar. 15-17, Atlanta, GA
8. Okamoto, N.C., Rhee, J. and Mourtos, N.J., 2005, Educating Students to Understand the Impact of Engineering Solutions in a Global / Societal Context, *Proceedings of the 8th UICEE Annual Conference on Engineering Education*, Kingston, Jamaica.
9. Mourtos, N.J., DeJong Okamoto, N.C., and J. Rhee, 2004, "Defining, Teaching, and Assessing Problem-Solving Skills," *Proceedings of the 7th UICEE Annual Conference on Engineering Education*, Mumbai, India.
10. Rhee, J., and Wong, G., 2004, "Characterization of Airflow Impedance in Two Types of Telecommunications Chassis," *proceedings of the 20th Semi-Therm International Conference*, Mar. 9-11, San Jose, CA

Presentations (beyond conference presentations listed previously)

- 2012, Feb. 24, Das Haus – University Day, San Francisco, CA, "The Multidisciplinary, Zero-Emissions House Project at SJSU," hosted by the German American Chamber of Commerce.
- 2012, Mar. 4-6, NSF Engineering Education Awardees Conference, Arlington, VA, "Co-Instruction Model for Multidisciplinary Senior Projects in Sustainability"
- 2010, Jan. 31 – Feb. 2, NSF Engineering Education Awardees Conference, Reston, VA, "Co-Instruction Model for Multidisciplinary Senior Projects in Sustainability"

Grants

- \$1K, SJSU Undergraduate Research Grant, "Design of Wind Tunnel Fittings for Wind Energy Experiments," 2012-2013 (PI: J. Rhee, Student: A. Glover)
- \$1K, SJSU Undergraduate Research Grant, "Design of a Force Balance for Measuring Wind Loads on Solar Heliostats," 2012-2013 (PI: J. Rhee, Student: S. Draper)
- \$150K, National Science Foundation, "Co-instruction Model for Multidisciplinary Senior Projects in Sustainability," 2010-2013 (PI: J. Rhee, Co-PIs: D. Parent, A. Basu, L. Speer, L. Gerston)

- \$18.9K, Hewlett-Packard Laboratories, "Cogenerating Photovoltaic and Solar Thermal Collector" 2007 (PI: J. Rhee, Co-PI: N. Okamoto)
- \$10K, SJSU COE Faculty Development Grant, "Supplemental Funds for Cogenerating Solar Collector" 2007 (PI: J. Rhee, Co-PI: J. Mokri)
- \$5K, CSU Research Funds, "Solar Ice Maker" 2007 (PI: J. Rhee, Co-PI: J. Mokri)
- \$72K, Rockwell-Collins International, "Overcoming Thermal Spreading Resistance" 2006
- \$65K, Rockwell-Collins International, "Conjugate Conduction-Convection Thermal Management of LEDs" 2005
- \$7.5K, Apple Computer, "Properties of Thermal Interface Materials" 2004
- \$2K, Junior Faculty Career Grant, SJSU Center for Faculty Development, "A Portable PC-Automated Data Acquisition System" 2004
- \$1.6K, GSAP, SJSU Foundation, "Airflow in Telecommunications Equipment" 2003
- \$23K, LPP Implementation and Planning Grant, SJSU Center for Faculty Development, "Increasing Learning Effectiveness in Undergraduate thermodynamics and Heat transfer Courses in the Mechanical Engineering Curriculum" 2004 (w. N. Okamoto)
- \$5K, CSU Research Funds, "High Altitude Effects on Forced Cooling of Electronics" 2002
- \$12K, COE Teaching Excellence Fellowship, "Web-based Thermodynamics Laboratory" 2002

Lab Development/Equipment Donations

- ELD model 407, Subsonic recirculating wind tunnel with large test section, donated from LSI Logic, 2010 (\$170K)
- Thermal Interface Material Tester, donated from Hewlett-Packard, 2009 (\$5K)

Honors and Awards

- 2011 Professor of the Year, Mechanical and Aerospace Engineering Department, SJSU
- 2009 Applied Materials Award for Teaching Excellence, College of Engineering, SJSU
- 2008 Finalist, California CleanTech Open, "Solar Ice", www.cleantechopen.com

Service

- **SJSU Director of Assessment (2013 – present)**
Oversee annual program assessment of all degree programs on campus, in compliance with CSU and regional accreditation.
- **SJSU Chair of Program Planning Committee (2013 – present)**
Oversee periodic review process by faculty committee of all degree programs, minors, certificates, and credential programs on campus.
- **SJSU Task Force for Student Engagement (Spring 2013)**
Served on a task force under ACE Fellow, Jennifer Summit (Stanford University) to analyze results of NSSE and SNAPS surveys administered at SJSU in 2011, to study student engagement. Presented recommendations to Provost of SJSU.
- **Proposal Reviewer**, National Science Foundation, November 2011

- **Journal Manuscript Reviewer**, ASME J. of Heat Transfer, Applied Energy, Int. J. of Thermal Sciences, Int. J. of Engineering Education, Nanoscale and Microscale Thermophysical Engineering
- **Thought Partner for SUSTAIN at California Polytechnic Institute, SLO (2010 – 2015)**
Duties include: advisory board participation via monthly teleconferences and online discussions by diverse practitioners and researchers of learning, record observations and reflections on an NSF-funded, 5-year freshman learning experience
- **SJSU Dean of Engineering Search Committee (Fall 2012)**
- **SJSU Budget Advisory Task Force (2012-2013)**
Provide input to SJSU president on budgetary matters
- **SJSU AVP for Faculty Affairs Search Committee (Spring 2012)**
Served as a member of the search committee to select the AVP of Faculty Affairs
- **SJSU Provost Search Committee (Fall 2011)**
Served as a member of the search committee to select the Provost and Vice President
- **SJSU University Program Planning Committee (2010-present)**
Duties include reviewing and evaluating degree programs at SJSU for learning outcomes, enrollment, graduation rates, and future evolution. Our recommendations are forwarded to the Provost for consideration in the implementation of the academic plan.
- **Mentor for CARHS Academy, SJSU College of Applied Science and Arts (2011-present)**
Duties include attending grant writing workshops, advising assigned mentee, and participating in online discussions regarding grants and publications
- **SJSU General Education Program Assessment Group - GEPA (2009-2010)**
Campus-wide committee of fifteen faculty members from all seven colleges at SJSU; duties included designing and performing a program level assessment of the upper division general education requirements at SJSU.
- **SJSU College of Engineering Research Committee (2006-2010, 2012-present)**
Duties include promoting research and scholarship within the college of engineering, evaluating internal research proposals for seed funding.
- **Mentor for Engineering Leadership Pathways Scholarships - ELPS, SJSU College of Engineering (2010-present)**
Attend monthly meetings with directors, mentors, and scholarship recipients, advising and supporting assigned mentees
- **MAE Undergraduate Academic Advisor (2009-2011)**
Duties included staffing department academic advising hours for undergraduate mechanical engineering majors
- **MAE Undergraduate Studies Committee (Spring 2012 – present)**
Review undergraduate course proposals, deliberate on issues pertaining to undergraduate programs
- **MAE Graduate Studies Committee (Spring 2012 – present)**
Review graduate course proposals, deliberate on issues pertaining to graduate programs
- **MAE Website Content Manager (2007 – present)**
Oversee content and analytics on MAE department website (www.engr.sjsu.edu/mae). Supervise and train student assistants on website maintenance when necessary.

- **Director of Laboratory Facilities**
 - Director of Renewable Energy and Energy Efficiency Laboratory, (2012 - present), website forthcoming
 - Director of Solar Engineering Laboratory, www.engr.sjsu.edu/jrhee/solar
 - Co-director (w/ Dr. N. Okamoto) of Electronics Cooling Laboratory, co-funded by the National Science Foundation and Rockwell-Collins International (2002 – 2012), www.engr.sjsu.edu/ndejong/Electronics_Cooling.htm
- **SJSU Faculty Advisor for SJSU Student Clubs**
 - IEEE Components, Packaging, and Manufacturing Technology (CPMT) Society, (2009 – present), www.engr.sjsu.edu/cpmt
 - Society of Women Engineers, (2009 – 2012), <http://sjsuswe.wordpress.com>