Curriculum Vitae

Elaine P. Scott

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EDUCATION:

- 1990 Ph.D., Mechanical Engr., Michigan State Univ. Dissertation: "Estimation of the Thermal and Kinetic Properties Associated with Carbon/Epoxy Composite Materials during and after Curing."
- 1987 Ph.D., Agricultural Engr., Michigan State Univ. Dissertation: "Simulation of Temperature and Quality Profiles in Frozen Foods Subject to Step Changes in Storage Conditions."
- 1981 M.S., Agricultural Engr., University of California, Davis. Thesis: "Energy Analysis and Conservation in Steam and Water Blanchers."
- 1979 B.S., Agricultural Engr., University of California, Davis.

EXPERIENCE:

| 3/13- pres. | Dean, School of Science, Technology, Engineering and Mathematics, Professor, |
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| | Division of Engineering & Mathematics, University of Washington, Bothell, WA. |
| 8/12-3/13. | Director of Science & Technology, Professor of Engineering, Professor, Division of |
| | Engineering & Mathematics, University of Washington, Bothell, WA. |
| 9/06-7/12 | Professor and Director of Engineering Programs, Seattle Pacific Univ., Seattle, WA. |
| 6/00-8/08 | Professor, Dept. of Mechanical Engr., Virginia Tech, Blacksburg, VA. |
| 9/05-8/06 | Assistant Director, the Virginia Tech – Wake Forest University School of Biomedical |
| | Engineering and Sciences, Blacksburg, VA |
| 1/01-8/06 | Director, Center for Biomedical Engr., Virginia Tech, Blacksburg, VA. |
| 1/01-9/05 | Acting Director, the Virginia Tech – Wake Forest University, School of Biomedical |
| | Engineering and Sciences, Blacksburg, VA. (Responsible during 2001-03 for the |
| | formation of the School.) (50% appointment) |
| 8/98-8/00 | Associate Professor, Dept. of Mechanical Engr., Univ. of Utah, Salt Lake City, UT. |
| 4/95-6/00 | Associate Professor, Dept. of Mechanical Engr., Virginia Tech, Blacksburg, VA. (On |
| | leave 8/98 – 8/00.) |
| 8/92-4/95 | Assistant Professor, Dept. of Mechanical Engr., Virginia Tech, Blacksburg, VA. |
| 1/90-8/92 | Assistant Professor, Dept. of Mechanical Engr. (75%), Dept. of Agri. Engr. (25%), |
| | Joint app't, Michigan State Univ., East Lansing, MI. (100% Mech. Engr. 1/92 – 8/92.) |
| 10 11/00 | Visiting Cabalan Laboratorio de Thomas aborio Liniz, de Mantee Mantee France |

10-11/88 Visiting Scholar, Laboratorie de Thermomechanic, Univ. de Nantes, Nantes, France.

- 1983-89 Research Assistant, Instructor, Teaching Assistant, Depts of Mech. Engr., Agri. Engr. and Food Sci. & Human Nutrition, Michigan State University, East Lansing, MI.
- 1982-83 Graduate Assistant, Dept. of Food Science, Univ. of Wisconsin, Madison, WI.
- 1982 Instructor, Napa Junior College, Napa, and Diablo Valley College, Pleasant Hill, CA.
- 1980-81 Agricultural and Food Engineer, Ag West, Inc., Sacramento, CA.

Research Assistant, Dept. of Agricultural Engr., Univ. of California, Davis, CA.

RECENT HONORS/AWARDS:

- 2016 Academic Engineer of the Year, Puget Sound Engineering Council
- 2015 Distinguished Biosystems & Agricultural Engineering Alumni Award, College of Engineering, Michigan State University
- 2014 Distinguished Engineering Alumni Medal for Academic Achievement, College of Engineering, University of California Davis.
- 2013 Women to Watch in Life Science, Life Science Innovation Northwest, Washington Biotechnology & Biomedical Association.
- 2007 Fellow, American Society of Mechanical Engineers (ASME)
- 2003 Virginia Tech's 2003 Philip & Sadie Sporn Award for Excellence in Teaching of Engr. Subjects
- 2002 Virginia Tech College of Engineering Dean's Award for Excellence in Service

SCHOLARLY ACTIVITIES:

Papers in Refereed Journals

- 1. Wilson, D., R. Bates, S. Painter, J. Schaffer, E. P. Scott, 2015, "Differences in Self-Efficacy among Women and Minorities in STEM," *Journal of Women and Minorities in Science and Engineering*, Volume 21, No. 1, pp. 27-45.
- Allendoerfer, C., D. Wilson, J. Crawford, D. Jones, T. Floyd-Smith, M. Plett, E. Scott, N. Veilleux, and R. Bates, 2012, "Strategic Pathways for Success: The Influence of Outside Community on Academic Engagement", *Journal of Engineering Education*, Vol.101(3), pp.512-538.
- Oleg M. Alifanov, O. M., J.-P. Bardon, B. Blackwell, K. D. Cole, F. DeMonte, K. D. Dolan, K. J. Dowding, A. Haji-Sheikh, N. R. Keltner, R. L. McMasters IV, W.J. Minkowycz, A. Nenarokomov, E. P. Scott, K. A. Woodbury, N. T. Wright, 2010, "Professor James V. Beck on his 80th Birthday," International Journal of Heat and Mass Transfer Vol. 53, pp. 2581–2582
- Scott, E. P., M. Tilahun, B. Vick, 2009, "The Question of Thermal Waves in Heterogeneous and Biological Materials," ASME Journal of Biomechanical Engineering, Volume 131, Issue 7, 074518 (6 pages)
- Robinson, P. S., E. P. Scott, and T. E. Diller, 2008, "Testing of a Noninvasive Probe for Measurement of Blood Perfusion," *ASME Journal of Medical Devices*, Volume 2, March, Paper No. 011001, p. 1-5.
- 6. Ricketts, P. L., Mudaliar, A. V., Ellis, B. E., Pullins, C. A., Meyers, L. A., Lanz, O. I., Scott, E. P., and Diller, T. E., 2008, "Non-Invasive Blood Perfusion Measurements Using a Combined

Temperature and Heat Flux Probe," *International Journal of Heat and Mass Transfer*, Volume 51, pp. 5740-5748.

- Mudaliar, A. V., Ellis, B. E., Ricketts, P. L., Lanz, O. I., Lee, C. Y., Diller, T. E., and Scott, E. P., 2008, "Non-invasive Blood Perfusion Measurements of an Isolated Rat Liver and Anesthetized Rat Kidney," *ASME Journal of Biomechanical Engineering*, December, Volume 130, Issue 6, Paper No. 061013 (8 pages).
- 8. Mudaliar, A. V., O. I. Lanz, E. P. Scott, and T. E. Diller, 2008, "A Phantom Tissue System for the Calibration of Perfusion Measurements," *ASME Journal of Biomechanical Engineering*, Volume 130, Issue 5 (October), 051002-1 051002-10.
- 9. Mital, M. and E. P. Scott, 2008, "Thermal Design Methodology for an Embedded Power Electronic Module using Double-sided Micro-channel Cooling," *ASME Journal of Electronic Packaging*, September 2008, Volume 130, Issue 3, 031003-1 031003-11.
- Charboneau, B. C., F. Wang, J. D. van Wyk, D. Boroyevich, Z. Liang, E. P. Scott, C. W. Tipton, 2008, "Double-Sided Liquid Cooling for Power Semiconductor Devices Using Embedded Power Packaging," *IEEE Transactions on Industry Applications*, Volume 44, Issue 5, Sept.-Oct., pp. 1645 – 1655.
- 11. Mital, M., Y. F. Pang, and E. P. Scott, 2008, "Evaluation of Thermal Resistance Matrix Method for an Embedded Power Electronic Module," *IEEE Transactions on Components and Packaging Technologies*, Volume 31, No. 2, June, pp.382-387.
- 12. Pang, Y. F., E. P. Scott, J. D. van Wyk, and Z. Liang, 2007, "Assessment of Some Integrated Cooling Mechanisms for an Active Integrated Power Electronics Module," *ASME Journal of Electronic Packaging*, Volume 129, Issue 1 (March), pp. 1-8.
- 13. Mital, M., and E. P. Scott, 2007, "Thermal Detection of Embedded Tumors using an Infra-red Imaging Technique," *ASME Journal of Biomechanical Engineering*, Volume 129, Issue 1 (February), pp. 33-39.
- 14. Loulou, T., and E. P. Scott, 2006, "An inverse heat conduction problem with heat flux measurements," *International Journal for Numerical Methods in Engineering*, Vol. 67, No. 11, pp. 1587-1616.
- 15. Gayzik, F. S., T. Loulou, E. P. Scott, 2006, "Experimental Validation of an Inverse Heat Transfer Algorithm for Optimizing Hyperthermia Treatments," *Journal of Biomechanical Engineering*. Volume 128, pp. 505-515.
- Dukhan, N., P. D. Quinones-Ramos, E. Cruz-Ruiz, M. Velez-Reyes, E. P. Scott, 2005, "Onedimensional heat transfer analysis in open-cell," *International Journal of Heat and Mass Transfer*, Vol. 48, pp. 5112–5120.
- Pang, Y. F., E. P. Scott, J. Z. Chen, and K. A. Thole, 2005, "Thermal Design and Optimization Methodology for Integrated Power Electronics Modules," *ASME Journal of Electronic Packaging*, Vol. 127, Issue 1, March, pp. 59-66.
- Hernández-Mora, M., J. E. González, M. Vélez-Reyes, J. M. Ortiz-Rodríquez, Y. Pang, and E. Scott, 2004, "Dynamic Reduced Electrothermal Model for Integrated Power Electronics Modules (IPEM)," ASME Journal of Electronic Packaging, Vol. 126, December, pp. 477-490.
- 19. Liang, Z., J. D. van Wyk, F. C. Lee, D. Boroyevich, E. P. Scott, J. Chen, Y. F. Pang, 2003,

"Integrated Packaging of a 1kW Switching Module Using a Novel Planar Integration Technology", *IEEE Transactions on Power Electronics*, Vol. 19, No. 1, January, pp. 242-250.

- 20. Loulou, T., and E. P. Scott, 2003, "Estimation of 3-dimensional heat flux from surface temperature measurements using iterative regularization," Heat and Mass Transfer, Vol. 39, N° 5-6, pp 435-443.
- 21. Loulou T. and Scott, E.P., 2002, "Thermal Dose Optimization in Hyperthermia Treatments by Using the Conjugate Gradient Method," *Numerical Heat Transfer*, Part A, Vol 42, N° 7, pp. 661-683.
- 22. Payne A., M. Mattingly, J. Shelkey, E. P. Scott, and R. Roemer, 2001, "A Dynamic Twodimensional Phantom for Ultrasound Hyperthermia Controller Testing," *International Journal of Hyperthermia*, Vol. 17, No. 2, 143-159.
- 23. Hanuska, A., E. P. Scott, K. Daryabeigi, 2000, "Thermal Characterization of Aerospace Structures," *A.I.A.A. Journal of Thermophysics and Heat Transfer*, Vol. 14, No. 3, pp. 322-329.
- 24. Walker, D. G., E. P. Scott, and Robert J. Nowak, 2000, "Estimation Methods for Two-Dimensional Conduction Effects of Shock-Shock Heat Fluxes," *AIAA Journal of Thermophysics and Heat Transfer*, Vol. 14, No. 4, pp. 523-539.
- Walker, D. G., and E. P. Scott, 1998, "Evaluation of Estimation Methods for High Unsteady Heat Fluxes from Surface Measurements," *AIAA Journal of Thermophysics and Heat Transfer*, Vol. 12, No. 4, pp. 543-551.
- 26. Scott, E. P., P. Robertson, and T. E. Diller, 1998, "Development of Methodologies for the Estimation of Blood Perfusion using a Minimally Invasive Thermal Probe," (Invited paper) *Measurement Science & Technology*, Special Edition, Vol. 9, pp. 888-897.
- Copenhaver, D. C., E. P. Scott, A. Hanuska, 1998, "Thermal Characterization of Honeycomb Core Sandwich Structures," AIAA *Journal of Spacecraft and Rockets*, Vol. 35, No. 4, 1998, pp. 539-545.
- Garcia, S., and E. P. Scott, 1998, "Use of Genetic Algorithms in Thermal Property Estimation: Part I - Experimental Design Optimization," *Numerical Heat Transfer, Part A: Applications*, Vol., 33, No. 2, pp. 135-147.
- 29. Garcia, S., J. Guynn, and E. P. Scott, 1998, "Use of Genetic Algorithms in Thermal Property Estimation: Part II-Simultaneous Estimation of Thermal Properties," *Numerical Heat Transfer*, *Part A: Applications*, Vol., 33, No. 2, pp. 149-168.
- 30. Haftka, R. T., E. P. Scott, J. Cruz, 1998, "Optimization and Experiments: A Survey," *Applied Mechanical Reviews*, Vol. 51, No. 7, pp. 435-448.
- 31. Saad, Z., and E. P. Scott, 1997, "Analysis of Accuracy in the Numerical Simulation of the Freezing Process in Food Materials," *Journal of Food Engineering*, Vol. 31, No. 1, pp. 95-111.
- 32. Saad, Z., and E. P. Scott, 1996, "Estimation of temperature dependent thermal properties of basic food solutions during freezing," *Journal of Food Engineering*, Vol. 28, No. 1, pp. 1-19.
- 33. Marand, E., E. P. Scott, M. Jackson, and K. Plunkett, 1995, "Alternative Applications and Examples in Undergraduate Thermodynamics," *Chemical Engineering Education*, Chemical Engineering Division of the ASEE, August, pg. 150-157.

- 34. Scott, E. P., 1994, "An analytical solution and sensitivity study of sublimation-dehydration within a porous medium with volumetric heating," *Journal of Heat Transfer*, Vol. 116, No. 3, pp. 686-693.
- 35. Taktak, R., J. V. Beck, and E. P. Scott, 1993, "Optimal experimental designs for estimating thermal properties of composite materials," *International Journal of Heat and Mass Transfer*, Vol. 36, No. 12, pp. 2977-2986.
- 36. Chen, S.-D., R. Y. Ofoli, E. P. Scott, and J. Asmussen, 1993, "Volatile retention in microwave freeze-dried model foods," *Journal of Food Science*, Vol. 58, No. 5, pp. 1157-1161.
- Scott, E. P., and Z. Saad, 1993, "Estimation of Kinetic Parameters Associated with the Curing of Thermoset Resins: Part I - Theoretical Investigation," *Polymer Engineering and Science*, Vol. 33, No. 18, pp. 1157-1164.
- Scott, E. P., and Z. Saad, 1993, "Estimation of Kinetic Parameters Associated with the Curing of Thermoset Resins: Part II - Experimental Results," *Polymer Engineering and Science*, Vol. 33, No. 18, pp. 1165-1170.
- 39. Scott, E. P., J. V. Beck, and D. R. Heldman, 1992, "Estimation of time variable heat transfer coefficients in frozen foods during storage," *Journal of Food Engineering*, Vol. 15, No. 1, pp. 99-121.
- 40. Scott, E. P., and J. V. Beck, 1992, "Estimation of thermal properties in carbon/epoxy composite materials during curing," *Journal of Composite Materials*, Vol. 26, No. 1, pp. 20-36.
- 41. Scott, E. P., and J. V. Beck, 1992, "Estimation of thermal properties in epoxy/carbon composite materials," *Journal of Composite Materials*, Vol. 26, No. 1, pp. 132-149.
- 42. Scott, E. P., and D. R. Heldman, 1990, "Simulation of temperature dependent quality deterioration in frozen foods during storage," *Journal of Food Engineering*, Vol. 11, No. 1, pp. 43-65.
- 43. Scott, E. P., and J. V. Beck, 1989, "Analysis of order in the sequential regularization solution of the inverse heat conduction problem," *Journal of Heat Transfer*, Vol. 111, No. 2, pp. 218-224.
- 44. Rumsey, T. R., T. Fortes, T. T. Conant, E. P. Scott, L. Peterson, and W. W. Rose, 1984, "Energy use in tomato paste evaporation," *Journal of Food Process Engineering*, Vol. 7, No. 2, pp. 111-121.
- 45. Rumsey, T. R., E. P. Scott, and P. A. Carroad, 1982, "Energy consumption in water blanching," *Journal of Food Science*, Vol. 47, No. 1, pp. 295-298.
- 46. Scott, E. P., T. R. Rumsey, P. A. Carroad, J. Buhlert, J. Horn, and W. W. Rose, 1981, "Energy consumption in steam blanchers," *Journal of Food Process Engineering*, Vol. 5, No. 2, pp. 77-88.

Textbooks

1. Potter, M. and Scott, E.P., 2003, Thermal Sciences: Thermodynamics, Fluid Mechanics, and Heat Transfer – First Edition. Brooks/Cole.

Papers in Refereed Conference Proceedings (* indicates student)

1. Wasilewski, C.H., Plett, M.I., Wilson, D., Bates, R., Scott, E., 2014, "The Relationship between Informal Faculty Interactions and Students' Engagement in STEM Careers." Paper

presented at the meeting of The Clute Institute Education Conference, San Francisco, CA, August, 2014.

- 2. Scott, E., and Azevedo, H., 2012, "Lessons Learned from a Program to Encourage and Enable Transfer Students to Complete their Engineering Degrees," 2012 Annual Conference & Exposition, San Antonio, TX, Paper No. AC 2012-4939.
- 3. Scott, E., R. Bates, and D. Wilson, H., 2012, "Integrating Professional Development Modules in the Engineering Curriculum," 2012 Annual Conference & Exposition, San Antonio, TX, Paper No. AC 2012-5006.
- M. Plett, Carlson Jones, D., Crawford, J. K., Floyd Smith, T., Peter, D., Scott, E. P., Wilson, D., Bates, R. A., and Veilleux, N. M., 2011, "STEM Seniors: Strong Connections to Community Are Associated with Identity and Positive Affect in the Classroom," American Society for Engineering Education, 2011 Annual Conference & Exposition, Vancouver, B.C., Canada, Paper No. AC 2011-720.
- 5. Scott, E. P. Scott, R. Bates, R. Campbell, and D. Wilson, 2010, "Contextualizing Professional Development in the Engineering Classroom," 40th ASEE/IEEE Frontiers in Education Conference, October 27 30, Washington, DC, Session T1A, pp. 1-6.
- Scott, E., and Azevedo, H., 2010, "Enabling Successful Transitions from 2-Year Colleges to a 4-Year Electrical Engineering Program," Annual Conference Proceedings of the American Society of Engineering Education, paper No. AC 2010-1481 (8 pages).
- Floyd-Smith, T., Wilson, D., Campbell, R., Jones, D., Bates, R., Peter, D., Plett, M., Peter, D., Scott, E., Veilleux, N., "A Multi-Institutional Study of Connection, Community and Engagement in Stem Education: Conceptual Model Development," Annual Conference Proceedings of the American Society of Engineering Education, paper No. AC 2010-2410 (9 pages).
- 8. Scott, E. P., and J. Lindberg, "Appropriate and Sustainable Engineering (ASE) Concentration," proceedings of the 2009 American Society of Engineering Education Annual Conference and Exposition, June 14-17, 2009, Austin, TX. (2nd place in Best Paper Competition for the Energy Conversion and Sustainability Division.) AC 2009-2187 (9 pages).
- Boroyevich, D., F. C. Lee, J. D. van Wyk, G-Q Lu, E. P. Scott, M. Xu, R. Burgos, F. Wang, T. M. Jahns, T. A. Lipo, R. D. Lorenz, and T. P. Chow, 2008, IPEM-Based Power Electronics System Integration, (invited paper), CIPS 2008, Proceedings of the 5th International Conference on Integration of Power Electronics Systems, March 11-13, 2008, Nuremburg, Germany.
- Rittler*, M., Grant, J. W., Pierrakos*, O., Faulkner, S., Laubenbacher, R., Scott, E., 2007, Multidisciplinary research environments foster learning settings which benefit students and faculty, (Poster Presentation) BMES Annual Fall Meeting, September 26-29, 2007, Los Angeles, CA.
- Ricketts*, P. L., A. V. Mudaliar, B. E. Ellis, T. E. Diller, E. P. Scott, O. I. Lanz, 2007, "Noninvasive Blood Perfusion Measurement on the Liver of an Anesthetized Rat, Paper No. SBC2007-176538 (extended abstract, 2 pages), Proceedings of the ASME 2007 Summer Bioengineering Conference (SBC2007), June 20-24, Keystone Resort & Conference Center, Keystone, Colorado, USA.

- Mital*, M., Zhao*, M. Y., E. P. Scott, and R. Huang, 2006, "Thermal Design and Optimization of a Microchannel Cooled Integrated Power Electronic Module," Paper No. AIAA-2006-3605, Collection of Technical Papers - 9th AIAA/ASME Joint Thermophysics and Heat Transfer Conference Proceedings, v 3, pp 2031-2037.
- 13. Scott, E. P., R. Laubenbacher, S. Faulkner, 2006, "BBSI: Summer Institute for Quantitative and Integrative Bioengineering (SIQIB)," (extended abstract, 2 pages), Bioengineering Summer Conf., Amelia Island Plantation, Amelia Island, Florida, June 2006, Abstract No. 160628.
- Mudaliar*, A., Ellis*, B., Ricketts*, P., Diller, T. E., Scott, E. P., 2006, "Noninvasive Blood Perfusion Measurements on the Kidney of an Anesthetized Rat," (extended abstract, 2 pages), Bioengineering Summer Conf., Amelia Island Plantation, Amelia Island, Florida, June 2006, Abstract No. 157675.
- 15. Charboneau*, B. C., F. Wang, J. D. van Wyk, D. Boroyevich, Z. Liang, E. P. Scott, "Double Sided Liquid Cooling for Power Semiconductor Devices Using Embedded Power Packaging," Conference Record, IEEE Industry Applications Conference 40th Annual Meeting (IAS 2005), Oct. 2-6, 2005, Kowloon, Hong Kong, Conf. Proc., Vol. 2, pp. 1138-1142.
- 16. Mital*, M., E.P. Scott, Z. Liang, and J. D. van Wyk, 2005, "Thermal Evaluation and Optimization of an Integrated Power Electronic Module," IMECE2005-83058, ASME International Mechanical Engineering Congress and Expo, ASME Conf. Proc. IMECE2005, Nov. 2005, Electronic and Photonic Packaging, Electrical Systems Design and Photonics, and Nanotechnology, pp. 555-559.
- 17. Mudaliar*, A., C. M. Comas*, T. E. Diller, E. P. Scott, 2005, "Design of Tissue Phantom for Blood Perfusion Measurements," (extended abstract), Bioengineering Summer Conference, Vail, Colorado, June 2005, Abstract No. b0250123.
- Pang*, Y. F., E. P. Scott Z. Liang, J. D. van Wyk, Experimental Study on the Double-Sided Air Cooling for Integrated Power Electronics Modules, Proceedings of IPACK2005 ASME InterPACK'05 July 17-22, San Francisco, California, USA IPACK2005-73272
- Pang*, Y. F., E. Scott, J. D. van Wyk, and Z. Liang, "Assessment of Some Integrated Cooling Mechanisms for an Active IPEM," IMECE2004-41415, ASME International Mechanical Engineering Congress and Expo, Nov. 2004, Proceedings of the A.S.M.E. IMECE2004, Heat Transfer, Vol. 2, pp. 163-170.
- Mital* M., and E. P. Scott, "Thermal Detection of Embedded Tumors using Infra-red Imaging Technique," IMECE2004-62260, ASME International Mechanical Engineering Congress and Expo, Nov. 2004, Proceedings of the A.S.M.E., IMECE2004, Heat Transfer, Volume 1, pp. 821-828.
- 21. Mudaliar*, A., and E. P. Scott, "Performance Assessment of Probe for Radio-frequency Ablation," HT-FED2003-56422, ASME Heat Transfer/Fluids Summer Conference, Charlotte, NC, July, 2004.
- 22. Gayzik*, F. S., E. P. Scott, and T. Loulou, "Optimal Control of Thermal Damage to Targeted Regions in a Biological Material," HT-FED2004-56426, ASME Heat Transfer/Fluids Summer Conference, Charlotte, NC, July, 2004.

- 23. Montgomery*, Z., D. Minter*, and E. P. Scott, "Analysis of Air Flow Diversion in a System of Integrated Electrical Components," HT-FED2004-56319, ASME Heat Transfer/Fluids Summer Conference, Charlotte, NC, July, 2004.
- 24. Pang*, Y. F., Z. Liang, E. P. Scott, and J. D. van Wyk, "Assessment of Thermo-mechanics for an Integrated Power Electronics Switching Stage," IAS 2004 Annual Meeting, Seattle, Washington, USA, October 3-7, 2004.
- 25. Pang*, Y. F., and E. P. Scott, "Thermal Evaluation of DC/DC and PFC Integrated Power Electronics Modules," Inter-society Conference on Thermal Phenomena in Electronic Systems (ITHERM), Las Vegas, Nevada, June 1-4, 2004.
- 26. Armstrong, J. R., B. Vick, and E. Scott, "Platform Based Physical Response Modeling", Proceedings of the High Performance Computing Symposium, pp 91-100 Washington DC, April 26, 2004.
- 27. Hernández-Mora*, M., J. E. González, M. Vélez-Reyes*, J. M. Ortiz-Rodríguez*, Pang*, Y.-F, and E. P. Scott, 2003, "Dynamic Reduced Electrothermal Model for Integrated Power Electronics Modules (IPEM): Part I- Thermal Analysis," Paper No. IMECE2003-42446, Washington, D.C., Nov. 2003, Proceedings of the A.S.M.E., IMECE2003, Heat Transfer, Vol. 2, pp. 291-298.
- 28. Ballmer*, A., O. Lanz, E. P. Scott, 2003, "Perfusion Measurements using a Non-Invasive Thermal Probe in a Phantom Test Stand," Paper No. IMECE2003-42014 (Extended Abstract), Washington, D.C., Nov. 2003, Proceedings of the A.S.M.E., IMECE2003, Heat Transfer, Vol. 4, pp. 429-430.
- 29. Madden*, M. A., and E. P. Scott, 2003, "An agar and saline phantom for perfused tissue," Paper No. IMECE2003-42900 (Extended Abstract), Washington, D.C., Nov. 2003. (Second place in ASME's Bioengineering Division B.S. Student Paper Competition, and Finalist in ASME's Old Guard Competition.), Proceedings of the A.S.M.E., IMECE2003, Advances in Bioengineering, pp. 43-44.
- 30. Pang*, Y.-F., and E. P. Scott, 2003, "Thermal Characterization and Optimization of Active System IPEM," Paper No. IMECE2003-41415, Washington, D.C., Nov. 2003, Proceedings of the A.S.M.E., IMECE2003, Heat Transfer, Vol. 2, pp. 161-166.
- Minter*, D. L., Pang*, Y.-F., and E. P. Scott, 2003, "The Effects of Various Cooling Scenarios on a System of Integrated Circuits," IMECE'03, Paper No. IMECE2003-41667, Washington, D.C., Nov, 2003, Proceedings of the A.S.M.E. IMECE2003, Heat Transfer, Vol. 2, pp. 167-173.
- 32. Liang, Z. X., F. C. Lee, J. D. Van Wyk, D. Boroyevich, E. P. Scott, J. Chen, B. Lu, and Y. Pang*, "Integrated Packaging of a 1 kW Switching Module using Planar Interconnect on Embedded Power Chips Technology," Proceedings of Applied Power Electronics Conference and Exposition (APEC), Vol. 1, pp. 42-47, 2003.
- 33. Ballmer*, A., O. Lanz, E. P. Scott, R. Broadstone, 2003, "Consistency of Perfusion Measurements using a Non-Invasive Thermal Probe in Canines," National Heat Transfer Conf., Paper No. HT2003-40447, Las Vegas, NV.
- 34. Cardinali^{*}, A. V., T. E. Diller, O. Lanz, and E. P. Scott, 2002, "Validation of a Noninvasive Thermal Perfusion System Using a Canine Medial Saphenous Fasciocutaneous Free Tissue

Flap Model," IMECE'02, New Orleans, Nov. 17-22, 2002, Paper No. 32354. Proceedings of the A.S.M.E., Advances in Bioengineering, pp. 9-16.

- 35. Loulou, T., E. P. Scott, and B. Vick, 2002, "Estimation of the Thermal Properties and Interface Conditions of Heterogeneous Materials," Proceedings of the A.S.M.E., IMECE'02, New Orleans, Nov. 17-22, 2002, Paper No. IMECE2002-32431, Proceedings of the A.S.M.E. IMECE2002, Heat Transfer, Volume 6, pp. 201-209.
- 36. Loulou, T., and E. P. Scott, 2002, "Multi-Parameter Estimation in Hyperthermia Problem by using an optimal choice of descent parameters in iterative methods," IMECE'02, New Orleans, Nov. 17-22, 2002, Paper No.IMECE2002-33693, Proceedings of the A.S.M.E., Advances in Heat and Mass Transfer in Biotechnology, pp. pp. 29-35.
- 37. Pang*, Y-F, Chen*, J. Z., E. P. Scott, and K.A. Thole, 2002, "Electrical and Thermal Layout Design and Optimization Considerations for DPS Active IPEM," IMECE'02, New Orleans, Nov. 17-22, 2002, Paper No.IMECE2002-33778, Proceedings of the A.S.M.E., Heat Transfer, Vol. 7, pp. 253-259.
- 38. Chen*, Z., Y. F. Pang*, D. Boroyevich, E. P. Scott, and K. A. Thole, "Electrical and thermal layout design considerations for integrated power electronics modules," 37th Industry Application Conference (IAS), 2002, Vol. 1, pp. 242-246.
- Bikdash, M., Pang*, Y. F., and E. P. Scott, 2002, "Generation of Equivalent Circuit Models from Simulation Data of a Thermal System," A.S.M.E. IMECE'02, New Orleans, Nov. 17-22, 2002, Paper No.IMECE2002-33789, Proceedings of the A.S.M.E., IMECE2002, Volume 7, pp. 269-276.
- 40. Loulou, T., E. P. Scott, 2001, "Estimation of Highly Dynamic Heat Flux from Surface Temperature Measurements using Iterative Regularization Method," Eurotherm - Inverse Problems and Experimental Design In Thermal and Mechanical Engineering, Seminar No 68, 5-7 March, 2001, ENSMA, FUTUROSCOPE, France.
- 41. Loulou, T., and E. P. Scott, 2000, "2D Thermal Dose Optimization in High Intensity Focused Ultrasound Treatments," Advances in Heat and Mass Transfer in Biotechnology, Proceedings of the A.S.M.E., IMECE, Vol. HTD-368/BED-47, pp. 67-71.
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- 43. Loulou T., and E. P. Scott, 2000, "Optimization of Heat Treatment in High Focused Intensity Ultrasound Treatments," Proceedings of the Congress francais de Thermique, SFT 2000, No. 8, Lyon, France, May 15-17, 2000 pp. 709-714.
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- 2. M. Zhao*, M. Mital*, Z. R. Huang, E. Scott, Z. Liang, J.D. Van Wyk, 2006, "Thermal Modeling of IPEM using Microchannel Cooling," 2006 CPES Power Electronic Conference Proceedings, April 22-24, Virginia Tech, Blacksburg, VA.
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- 4. Mital* M., A. C. Baisden*, E. P. Scott, D. Boroyevich, J.D. van Wyk, Z. Liang, 2006, "Electrical and Thermal Design of an Integrated Power Electronic Module," 2006 CPES Power Electronic Conference Proceedings, April 22-24, Virginia Tech, Blacksburg, VA.
- 5. Dukhan, N., N. M. Martinez Toro*, J. O. Class*, Y. F. Pang*, E. P. Scott, M. Mital*, "Direct comparison between a heat sink and a foam block cooling of a computer chip," 2005 CPES

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- 43. Scott, E. P., P. A. Carroad, J. Horn, J. Buhlert, W. W. Rose, 1980, "Energy consumption in steam blanchers," presented at the 40th Annual Meeting and Food Expo of the Institute of Food Technologists, New Orleans, LA.
- 44. Scott, L.A., and E. P. Scott, 1992, "Inverse problems related to cryosurgery," poster presented at

the , CRYO '92, Society for Cryobiology, 29th Annual Meeting, Cornell University, Ithaca, NY.

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- 46. Pung, C., and E. P. Scott, 1992, "Estimation of the thermal properties of a carbon/epoxy composite material during curing an experimental study," poster presented at the Fifth Annual Inverse Problems in Engineering Seminar, Michigan State University, East Lansing, MI.
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Sponsored Research

- Scott, E. P., K. W. Bolding, J. Lindberg, D. Peter, M. I. Plett, "Engaging the Community to Achieve Success in Engineering II (ECASE-II)," National Science Foundation, DUE-1060082, \$600,000, 9/01/11 – 8/31/16.
- Plett, M., Peter, D., and Scott, E., "Connection, Community, and Engagement in STEM Education (Large Empirical, Contextual Research Topics in STEM Education)," Submitted to the National Science Foundation, Division of Research on Learning in Formal and Informal Settings (DRL), \$200,000, 9/01/09-8/31/12.
- Scott, E., "Sustainable Food Preservation through Absorption Refrigeration," Seattle Pacific University Senior Faculty Research Grant, \$3,460, 07/01/11-06/30/12.
- Wilson, D, Mescher, A., Bates, R., and Scott, E. P., "Professional Development Gateways in Social Learning Settings," CCLI-Phase II, National Science Foundation, DUE-0814802, \$48,000, 09/01/08-02/29/12.
- Chase*, P., Everett*, N., Parris*, D., G. Schwinn*, G., Scott, E. P., "Energy Savings through Environmentally Controlled LED Lighting," Puget Sound Energy Council, \$10,000, 07/01/07-06/30/08 (* indicates students).
- Scott, E. P., D. Peter, J. Lindberg, K. W. Bolding, M. I. Plett, "Engaging the Community to Achieve Success in Engineering (ECASE)," National Science Foundation, DUE-0728434, \$600,000, 9/15/07 – 8/31/12.
- Scott, E, P., R. Laubenbacher, S. Faulkner, Summer Institute for Quantitative and Integrative Bioengineering, NSF-NIBIB, EEC-0609225, \$599,613, 8/6/06 8/5/10.
- Scott, E. P., O. Lanz, T. Diller, Development of a Noninvasive Perfusion Measurement System, NIH, \$352,788, 8/01/04 7/31/06.
- Lee, F. C., (ERC PI). E. P. Scott (Thermal Thrust Team Leader) Thermal Mechanical Integration Thrust, NSF # Coop Ag EEC-9731677, \$300,000, 7/1/03-6/30/06.
- Scott, E. P., and Otto Lanz. Non-invasive Perfusion Probe, Carilion Biomedical Institute, \$49,638, 7/1/02-6/30/04.
- Clark, D., and E. P. Scott, Bio-and Microwave Active Implant System for Hyperthermia Treatments, , Carilion Biomedical Institute, \$34,119, 7/1/02-6/30/03.

- Lee, F. C., (ERC PI). E. P. Scott (Project PI) Integrated IPEM Design Methodology, NSF # Coop Ag EEC-9731677, \$143,622, 1/1/01-6/30/03.
- Scott, E. P.. Thermal analysis of SMATTE experiment, Fiber and Sensor Technologies, \$10,953 (100% responsibility, July-August, 1998.
- Kander, R., and E. P. Scott. Polymer based heat exchanger/desiccant development program, Virginia's Center for Innovative Technology, \$75,000 (50% responsibility), March 30, 1996 - Sept. 30, 1997.
- Kander, R., and E. P. Scott. Polymer based heat exchanger/desiccant development program, Des Champs Laboratories, Natural Bridge, Virginia, \$100,000 (50% responsibility), March 16, 1996 -Sept. 15, 1998.
- Vick, B., E. P. Scott, and M. S. Cramer. Thermal Waves in Heterogenous Materials, NSF, \$284,898 (33% responsibility). September 1, 1996 August 30, 2001.
- Scott, E. P. Thermal Characterization of Aerospace Vehicles, NASA Langley Research Center (LaRC), \$112,950, January 25, 1996 - June 24, 1998.
- Diller, T. E., and E. P. Scott. Minimally Invasive Blood Perfusion Probe, Vatell Corp., \$6,000 (50% responsibility), January 1 December 31, 1997.
- Diller, T. E., and E. P. Scott. Minimally Invasive Blood Perfusion Probe, Virginia's Center for Innovative Technology, \$6,000 (50% responsibility), January 1 June 30, 1997.
- Scott, E. P. Estimation of Nonuniform Unsteady Heat Fluxes from Discrete Temperature Measurements, NASA Headquarters Graduate Student Researchers Program, \$66,000, July 1, 1994-June 30, 1997.
- Scott, E. P. Evaluation of High Temperature Superconductive Thermal Bridges for Space-Borne Cryogenic Infrared Detectors, NASA LaRC, \$95,608, May 15, 1993 Nov. 14, 1995.
- Scott, E. P. The development of a combined radiant-microwave freeze-drying process for biomedical materials. The Whitaker Foundation, \$141,217, Dec. 1, 1993-Nov. 30, 1996.
- Scott, E. P. Development of methodologies for the estimation of thermal properties associated with aerospace vehicles. NASA Langley Research Center, \$123,246, April 1, 1993 March 30, 1996.
- Scott, E. P. Racing Ahead Improved Diversification in Engineering Student Involvement Projects. Virginia Tech Affirmative Action Grant, \$2,500, 1995-96.
- Marand, E. and E. P. Scott Alternative applications and examples in undergraduate thermodynamics. Virginia Tech Teaching-Learning Grant 1993-1994, \$3,088, July 1, 1993-June 30, 1994.
- Scott, E. P. A Fundamental Study of the Microwave Freeze-Drying Process. Creative Match Grants, Virginia Tech, \$5,000 (includes \$2,500 departmental contribution), April 1, 1993 - March 30, 1994.
- Scott, E. P. Inverse problems related to cryosurgery. G. E. Foundation Science and Engineering Faculty for the Future Program. Michigan State University, \$20,000, March 1992 Aug. 1992.
- Scott, E. P. and R. Y. Ofoli. Freeze-drying of heat-sensitive biological materials in microwave fields. State of Michigan Research Excellence Fund, \$24,000, Oct. 1, 1991 - Sept. 30, 1992.

- Scott, E. P. and J. V. Beck. Estimation of thermal and kinetic properties of composite materials during curing. State of Michigan Research Excellence Fund, \$34,000, Oct. 1, 1991 Sept. 30, 1992.
- Scott, E. P. Research Initiation Award: A Fundamental Investigation of the Freezing Process in Food Materials. National Science Foundation, \$69,938, June 15, 1991 Nov. 30, 1993.
- Scott, E. P. A fundamental assessment of the assumptions used in predicting the thermal properties of food materials during freezing. Michigan State University All University Research Initiation Grant, \$8,565, Jan. 1, 1991 Dec. 31, 1991.
- Steffe, J. F., R. Y. Ofoli, and E. P. Scott. Experimental determination of turbulence in pipe flow. Center for Aseptic Processing and Packaging Studies, North Carolina State University, Raleigh, N.C., \$24,960, Jan. 1, 1991 - Dec. 31, 1991.
- Ofoli, R. Y., E. P. Scott, and J. Asmussen. Freeze-drying of heat-sensitive biological materials in microwave fields. State of Mich. Research Excellence Fund, \$24,000, Oct. 1, 1990 Sept. 30, 1991.
- Scott, E. P., and J. V. Beck. Estimation of thermal and kinetic properties of composite materials during curing. State of Mich. Research Excellence Fund, \$37,000, Oct. 1, 1990 Sept. 30, 1991.
- Ofoli, R. Y., and E. P. Scott. Freeze-drying of heat-sensitive biological materials in microwave fields. State of Mich. Research Excellence Fund, \$24,000, Oct. 1, 1989 - Sept. 30, 1990.
- Beck, J. V., and E. P. Scott. Estimation of thermal and kinetic properties of composite materials during curing. State of Mich. Research Excellence Fund, \$33,000, Oct. 1, 1989 Sept. 30, 1990.

EDUCATIONAL ACTIVITIES:

Sampling of Courses Taught:

Seattle Pacific University (2006-2012):

- Biomass Resources
- Computer Aided Design Software
- Dynamics
- Engineering Internship
- Engineering Probability and Statistics
- Engineering Seminar and Internship Prep
- Introduction to Engineering

- Hydrosystems
- Mechanics of Materials
- Properties of Materials
- Senior Capstone Design
- Statics
- Thermo-fluids I (Thermodynamics)
- Thermo-fluids II (Fluid mechanics)
- University Seminar

Virginia Tech/Univ. of Utah/Michigan State U. (1990-2006):

Introduction to Thermal-Fluid Engineering, Thermodynamics (I and II), Thermodynamics in Biosystems, Fundamentals of Thermodynamics, Heat and Mass Transfer, Advanced Heat Conduction (inverse problems and parameter estimation), Senior Capstone Design.

Thesis and Dissertations:

Ph.D. Dissertations:

- Saad, Zoubeir, Ph.D., Spring 1994, Dissertation title: "Simulation of Temperature History and Estimation of Thermal Properties of Food Materials During Freezing," Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Walker, D. Greg, Ph.D., Fall 1997, Dissertation title: "Estimation of Unsteady, Non-Uniform Heating Rates from Surface Temperature Measurements," Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Dolan, James P., Ph.D., Summer 1998, Dissertation title: "Use of Volumetric Heating to Improve Heat Transfer in Vial Freeze-drying," Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Garcia, Sandrine, Ph.D., Summer, 1999, Dissertation title: "Experimental Design Optimization and Thermophysical Parameter Estimation of Composite Materials using Genetic Algorithms," Joint Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA, and the Universite de Nantes, Nantes, France.
- Pang, Ying-Feng, Ph.D., January 2005, Dissertation Title: "Cooling of Power Electronics Systems," Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Mital, Manu, Ph.D., Winter 2007, Dissertation Title: "Integrated Thermal Management Strategies for Embedded Power Electronic Modules," Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Mudaliar, Ashvin, Ph.D., Spring 2007, Dissertation Title: "Development of a Phantom Tissue for Perfusion Measurement and Noninvasive Perfusion Estimation in Living Tissue," Ph.D., Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.

M.S. Theses:

- Saad, Zoubeir, 1991, M.S., Thesis title: "Estimation of the Kinetic Parameters of an Amine-Epoxy Resin during Cure," Dept. of Mechanical Engineering, Michigan State Univ., East Lansing, MI.
- Scott, Leslie A., 1993, M.S., Thesis title: "An Inverse Approach to the Estimation of the Tissue Thermal Properties and The Determination of the Optimal Treatment Time in Cryosurgical Applications," Dept. of Mechanical Engineering, Michigan State Univ., East Lansing, MI.
- Dolan, James P., 1994, M.S., Thesis title: "Microwave Freeze-Drying of Aqueous Solutions," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Lee, Kasey M., 1994, M.S., Thesis title: "Experimental Design for the Evaluation of High-Tc Superconductive Thermal Bridges in a Sensor Satellite," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Moncman, Deborah A., 1994, M.S., Thesis title: "Development of Methodologies for the Estimation of Thermal Properties Associated with Aerospace Vehicles," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Garcia, Sandrine, 1994, M.S., Thesis title: "Analysis of a Space Experimental Design for High-Tc Superconductive Thermal Bridges," Dept. of Mechancial Engineering, Virginia Tech, Blacksburg, VA.
- Hanak, Joseph P., Spring 1995, M.S., Thesis title: "Experimental Verification of Optimal Experimental Designs for the Estimation of Thermal Properties of Composite Materials," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Copenhaver, David C., Spring 1996, M.S., Thesis title: "Thermal Characterization of Core Honeycomb Sandwich Structures," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Guynn, Jerome H., Summer 1996, M.S., Thesis title: "Estimation of Thermal Properties in a Medium with Conduction and Radiation Heat Transfer," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Hanuska, Alexander, Spring 1998, M.S., Thesis title: "Thermal Characterization of Complex Aerospace Structures," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Robinson, Paul, Spring 1998, M.S. (Co-Advisor), Thesis title: "Development of Methodologies for the Noninvasive Estimation of Blood Perfusion," Dept. of Mech. Engineering, Virginia Tech, Blacksburg, VA.
- Staton, J. Christie, Spring 1998 M.S., "Heat and Mass Transfer of Polymer Desiccant Polymers," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Tilahun, Muluken, Spring 1998 M.S., "Experimental Investigation of Hyperbolic Heat Transfer in Heterogeneous Materials," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Smith, Robert H., Fall 2000, M.S., "2D Non-Uniform, Time Dependent, Heat Flux Estimates using Data from Thin Film Sensors and/or TGP Measurements," Dept. of Mechanical Engineering, University of Utah, Salt Lake City, UT.
- Cardinali, Alex, Summer 2002, M.S., "Validation of a Noninvasive Blood Perfusion Measurement Sensor," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.

- Pang, Ying-Feng, Summer 2002, M.S. (Co-Advisor), "Integrated Thermal Design and Optimization Study for Active Integrated Power Electronic Modules (IPEMs)," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Sewall, Evan, Fall 2002, M.S. (Co-Advisor), "Development of a Thermal Management Methodology for a Front-End DPS Power Supply," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Smith, Sandra, Spring, 2004, M.S., "Theoretical Feasibility Study of Preferential Hyperthermia Using Silicon Carbide Inserts," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Minter, Dion, Spring 2004, M.S., "Development of Strategies in Finding the Optimal Cooling of Systems of Integrated Circuits," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Madden, Marie, Summer 2004, "Minimally Invasive Estimates of Thermal Properties of Biological Materials," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Mital, Manu, Summer 2004, "Tumor Detection Using Thermal Imaging," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Gayzik, Scott, Fall 2004, "Thermal Dose Optimization for Hyperthermia Treatments," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Comas, Caroline, Summer 2005, "Development of a Non-invasive Probe to Estimate Perfusion," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Ellis, Brent, Fall 2006, "Sensitivity and Repeatability of a Non-invasive Blood Perfusion Probe," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Ricketts, Patricia, Spring 2007, "Development of the Passive Perfusion Probe for Non-Invasive Blood Perfusion Measurement," Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.
- Jones, Michelle, In progress, Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.

Project Theses:

- Pung, Christopher, 1993, M.S., Dept. Of Mechanical Engineering, Michigan State University, Project Thesis, East Lansing, MI.
- Smale, Sharon, 1997, Project Oriented Masters Degree, Dept. of Mechanical Engineering, Virginia Tech, Blacksburg, VA.

Undergraduate Research:

Seattle Pacific University: Undergraduate Research

- Iseri, Cameron, Development of Professional Development Modules, Summer, 2011, 2012.
- Barnett, Parker, Sustainable Food Preservation through Absorption Refrigeration, Summer, 2011.
- Inouye, James, Biosand Filter Characterization, Spring 2011.

Virginia Tech: ME 4994, Undergraduate Research (unless otherwise noted)

- Copenhaver, David, Experimental Verification of Optimization Procedures for the Estimation of Thermal Properties, Spring, 1994.
- Grondawki, Michael, Microwave Freeze-drying of Biomaterials, 1996-97.

- Gularson, Bradley E., Thermal Property Estimation of Aerospace Vehicles, Summer, 1994.
- Nottingham, Ron, Evaluation of High Temperature Superconductive Thermal Bridges for Space-Borne Cryogenic Detectors, Fall 1994.
- Hanuska, Alexander, Spring 1996.
- Leung, Tony, Analysis of Radiative Heat Transfer and Volumetric Heat Generation in Microwave Freeze-drying of Pharmaceuticals, Spring 1998.
- Slaski, Dan, Perfusion Estimation Program, Summer 2002.
- Smith, Amy M., Studies in Heat & Mass Transfer Characteristics of Desiccant Polyvinyl Alcohol, Fall 1997.
- Spencer, Rebecca, Analysis of Support System for Superconductive Space Experiments (ESM Senior project), 1993-4.
- Montgomery, Zach, Analysis of Airflow Diversion in System of Integrated Electrical Components, Summer 2003, Fall 2003.
- Ballmer, Allison, Estimation of Perfusion, Fall 2002, Spring 2003, Summer 2003.
- Madden, Marie, Development of Phantom Test stand, Spring 2003.
- Campbell, Ian, Development of Phantom Test Stand for Perfusion Studies, Fall 2003, Spring 2004, Fall 2004.
- Ricketts, Patricia, Phantom Test Stand for Estimation of Thermal Properties, Spring 2004.
- Ricketts, Patricia, Perfusion Probe, Spring 2005, Fall 2005, Spring 2006.
- Meyers, Leah, Perfusion Probe Design, Spring 2006.

University of Utah: ME 5950, Independent Study:

- Garcia, Chris, Est. of Thermal Properties of Thermal Protection System, 3, Spring, 1999.
- Smith, Robert, Est. of Heat Flux due to Shock-Shock Interactions from Thermographic Phosporous Data, 3, Spring, 1999.
- Van Rij, Jennifer, Analysis of Heat Transfer Coefficients in Blood Vessels, 3, Spring, 1999.

Michigan State University: ME 499 Independent Study Projects (400-senior level):

- Brody, Joe, Est. of Thermal & Kinetic Properties of Composite Mat'ls during Curing, 1990.
- Kristi, Camp, Thermal & Kinetic Prop. of Composite Materials, Spring, 1990, Spring, 1991.
- Cooney, Colleen, Microwave Freeze-Drying, Winter, 1990.
- Crossett, Lisa, Experimental Microwave Freeze-Drying, Winter, 1992.
- Dawson, James, Est. of the Thermal Properties of Composite Materials, Winter, 1992.
- Frerichs, Todd, Experimental Microwave Freeze-Drying, Winter, 1992.
- Halstead, Mark, Data Acquisition for Experimentation, Fall 1991.
- Hudson, Nyeleti, Polyethylene and Poly-propylene Plastics, Fall, 1990.
- Jirak, Jeff, Microwave Freeze-Drying of BioMaterials, Fall, 1990.
- Keblaitis, David, Exp. Microwave Freeze-Drying of Biological Materials, Fall, 1991.
- Lee, Kim, Applications of Thermodynamics, Spring, 1990.
- Lingeman, Stephen, Est. of Thermal & Kinetic Prop. of Composite Mat'ls, Winter, 1990.
- Maffett, Dionne, Heat Transfer Problems in Cryosurgery, Fall, 1991.
- Moncman, Deborah, Aroma Loss During Microwave Freeze-Drying Opt. of Parameters in Cryosurgery, Spring, 1992, Summer, 1992.
- Ojala, Eric, Determination of Thermal Properties of Foods during Freezing, Winter, 1992.

- Richardson, Leah, Exp. Microwave Freeze-Drying of Biological Materials, Fall, 1991.
- Starks, Rhonda, Phase Equilibrium of Methylcellulose, Summer, 1990.
- Tullius, Robert, Freeze-drying of Heat Sensitive Biomaterials (Honors), AY 1990-91.
- Umstead, Donna, Wastewater Engineering and Technology, Summer, 1990.
- Wesby, Lori, Microwave Freeze Drying, Summer, 1991.

SERVICE:

Professional Service:

American Society of Mechanical Engineers (ASME) Activities:

- Division of Bioengineering (BED) Executive Committee, ASME, 2004-2007.
- Associate Editor, ASME Journal of Biomechanical Engineering. Responsible for overseeing review process for bioheat transfer related research papers, 2001-2007.
- Technical Program Representative for the International Mechanical Engineering Congress and Exposition (IMECE), Division of Bioengineering (BED), ASME, (responsible for all sessions (31) and papers (~170) sponsored by the BED at the 2002 IMECE), 2002.
- Chairman, ASME, K-17 Committee on Heat and Mass Transfer in Biotechnology. Coordinated all activities of the Committee, including approximately 8 sessions sponsored by the committee at IMECE each year, 1998- 2001.
- Vice-Chairman, K-17 Committee Heat and Mass Transfer in Biotechnology, ASME, 1996-98.
- Session Chairman, K-17 Committee Heat and Mass Transfer in Biotechnology, American Society of Mechanical Engineers I.M.E.C.E., 1994, 1995, 1996, 1997.
- Committee Member, K-17 Committee Heat and Mass Transfer in Biotech., ASME, 1991present.
- Panel Member. Graduate Education in Heat Transfer: Trends and Challenges, HT-17B, Winter-Annual A.S.M.E. Meeting, Nov. 8, 1994.
- Technology Opportunities and Planning Committee, ASME, 1993-95.

Other Activities:

- USDA CSRESS National Research Initiative Panel Reviewer, May 1 5, 2006.
- Editorial Board, Journal of Food Engineering, 1994 2010.
- Editorial Board, Journal of Food Process Engineering, 1996 2010.
- Reviewer: J. of Biomechanical Engr., ASME IMECE (conference), J. of Food Process Engineering, Inverse Problems in Engineering, Journal of Food Engineering, Medical Physics, AIAA Thermophysics and Heat Transfer, Numerical Heat Transfer, J. of Heat Transfer, Intern'l J. of Numerical Methods in Engineering, Journal of Composite Materials, Intern'l J. of Heat and Mass Transfer, 2nd Intern'l Conference on Inverse Problems in Engineering.
- Session Chairman, Bioheat Transfer Session, Nat'l Heat Transfer Conf., Cincinnati, OH, Aug. 2000.
- 2nd International Conf. on Inverse Problems in Engineering: Theory and Practice, Le Croisic, France, Exec. Comm., 1996.

• J. V. Beck and E. P. Scott, "Parameter Estimation and Optimization of Experiments Workshop," NASA Langley Workshop, Feb. 23-24, 1995.

University Service:

University of Washington, Bothell

- Member, Innovation Partnership Zone, Board Member, Bothell Washington
- Member, Chancellor's Search Committee, University of Washington Tacoma
- Co-Chair, Information Technology Director Search Committee, University of Washington Bothell

Seattle Pacific University

- Chair, General Education Science Committee, 2011-2012.
- Faculty Affairs, 2009 2012.
- Member, Sustainability Committee, 2008 2010.
- Participant, SPU Friday's on a regular basis, 2007-2012.
- Advisor, SPU Advising days, 2008. 2012.
- Co-academic coordinator, Puget Sound Engineering Council SU-SPU Mentor Night, 2007 2011.
- Participant, College of Arts and Sciences Department Chairs Meetings

Virginia Tech (unless noted otherwise)

Recruitment:

- Member, Staff Recruiting Committee, School of Biomedical Engineering and Sciences, 2005.
- Member, Dean's Search Committee, College of Engineering, 2005.
- Member, Faculty Search Committee, School of Biomedical Engr. and Sciences (five positions), 2003-04.
- Chair, Faculty Search Committee, Dept. of Mechanical Engineering (five positions), 2002-03.
- Member, Faculty Recruiting Committee, Dept. of Mechanical Engineering, 1999-2001; 2002-04.
- Member, Dept. Head Search Committee, Dept. of Engr. Science and Mechanics, 2002-03.
- Member, Staff Recruiting Committee, Dept. Mechanical Engineering, 2000-2001.
- Member, Faculty Recruiting Committee, Dept. of Engr. Science and Mechanics, 2000-01.
- Member, Associate Dean Recruiting Committee, College of Engineering, 1997.
- Member, Faculty Recruiting Committee, College of Engineering, VCES, 1994-95.
- Member, Faculty Recruiting Committee, Dept. of Mechanical Engineering, 1993-94.

Promotion and Tenure, Retention, and Awards:

- Chair, School of Biomedical Engineering Promotion and Tenure Committee, 2005-06.
- Member, Mechanical Engineering Promotion and Tenure Committee, 1996-98; 2001-06.
- Member, Mechanical Engineering Honorifics Committee, 2005-06.

- Member, University Alumni Teaching Award Committee, 2006
- Chair, Mechanical Engineering Promotion and Tenure Committee, 2003-05.
- Member, College of Engineering, Promotion and Tenure Committee, 2001-04.
- Member, University Promotion and Tenure Committee, 2001-04.

Minority/Women Issues:

- Member, VTADVANCE Team Retention and Recruitment Workgroup, 2003-04.
- Member, PREP Team to encourage minority students to pursue grad school, 2003-06.
- Member, Univ. Equal Opportunity/Affirmative Action Committee, 1994-97; 2000-02.
- Chair, Mechanical Engineering Minority Affairs Committee, 1995-98.
- Co-Advisor, Society of Women Engineers, Virginia Tech Student Chapter, 1994-98.
- Advisor, Society of Women Engineers, University of Utah Student Chapter, 1998-2000.

Research Related:

- Acting Director, School of Biomedical Engineering and Sciences (SBES)/ Director, Center for Biomedical Engineering, 2001-2005 (See Administrative Activities.)
- Thrust Leader, CPES, Thermal Mechanical Integration. NSF ERC, 2003-06. (See Administrative Activities.)
- Member, University Biomedical Research Committee, 2001-02.
- Member, Engineering and Physical Science Faculty Advisory Committee, 2002-03.
- Member, Wake Forest University Research Council, 2002-03.