

CURRICULUM VITAE

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EDUCATION:

2010	Post-Doctoral Fellowship In PharmacoEconomics	University of Arizona College of Pharmacy, Center for Health Outcomes and PharmacoEconomics
2009	PhD (Nursing)	University of Pennsylvania School of Nursing
2005	MSN (Adult Acute Care)	University of Pennsylvania School of Nursing
1996	BSN (Nursing)	University of New Hampshire School of Nursing

LICENSURE:	Oregon Board of Nursing (201040959RN).	Expiration Date: 07/04/2019
	Massachusetts Board of Nursing (RN218257).	Expiration Date: 07/04/2018

PROFESSIONAL EXPERIENCE:

Academic Faculty Appointments:

2018-present	Professor and Dean for Research , William F. Connell School of Nursing, Boston College, Chestnut Hill, MA.
2018-present	External Faculty Senior Nurse Scientist , Yvonne L. Munn Center for Nursing Research at Massachusetts General Hospital, Boston, MA.
2016-present	Adjunct Associate Professor , University of Pennsylvania School of Nursing, Philadelphia, PA.
2016-present	Senior Fellow , Center for Health Outcomes and Policy Research, University of Pennsylvania School of Nursing, Philadelphia, PA.
2011-present	Scientific Consultant , Matrix45, Tucson, AZ.
2016-2017	PhD Program Assistant Director , OHSU School of Nursing, Portland, OR.
2013-2017	Associate Professor of Nursing , OHSU School of Nursing (primary appointment) with tenure as of 7/1/2014.
2013-2017	Associate Professor of Cardiovascular Medicine , OHSU Knight Cardiovascular Institute/School of Medicine. (secondary appointment)
2009-2016	Adjunct Assistant Professor , University of Pennsylvania School of Nursing, Philadelphia, PA. (<i>appointed to the Graduate Group 2012</i>)
2010-2013	Assistant Professor of Nursing (primary) Cardiovascular Medicine (secondary) , Oregon Health & Science University School of Medicine.
2006-2009	Associate Research Scientist , Matrix45, Earlysville, VA.
2006-2009	Associate Course Director , Advanced Physiology and Pathophysiology, University of Pennsylvania School of Nursing, Philadelphia, PA.
2007	Clinical Faculty , Adult Acute Care Nurse Practitioner Program, University of Pennsylvania School of Nursing, Philadelphia, PA.

2004-2008 **Senior Coordinator**, Brunner Instructional Technology Center, University of Pennsylvania School of Nursing, Philadelphia, PA.

Appointments at Hospitals / Affiliated Institution:

2002-2004 **Clinical Educator**, Cardiothoracic/Surgical Telemetry, Lahey Clinical Medical Center, Burlington, MA.
2001-2002 **Staff Nurse**, Beth Israel-Deaconess Hospital, Boston, MA.
1999-2002 **Staff/Head Nurse**, Surgical Intensive Care/Cardiothoracic Post-Anesthesia Care Units, Lahey Clinical Medical Center, Burlington, MA.
1998-1999 **Staff/Head Nurse**, Interventional Cardiology, Lahey Clinic Medical Center, Burlington, MA.
1996-1998 **Staff/Head Nurse**, Acute Cardiac and Respiratory Telemetry, New England Rehabilitation Hospital, Woburn, MA.

HONORS AND AWARDS:

Major Honors:

2019 **Distinguished Faculty Award**, Boston College Connell School of Nursing
2018 **Best Research Award**, ESC EuroHeartCare 2018, Dublin, Ireland
2017 **Faculty Senate Award for Research**, Oregon Health & Science University
2016 **Protégé Award**, Friends of the National Institute of Nursing Research
2016 **Fellow of the Heart Failure Society of America (FHFA)**, Heart Failure Society of America
2016 **Carol A. Lindeman Distinguished Professor**, Oregon Health & Science University
2015 **Arteriosclerosis/Heart Failure Translational Research Prize**, American Heart Association CVSN
2014 **Fellow of the American Academy of Nursing (FAAN)**, American Academy of Nursing
2014 **Nursing Leadership Award**, Heart Failure Society of America
2013 **Marie Cowan Promising Young Investigator Award**, American Heart Association CVSN
2012 **Fellow of the American Heart Association (FAHA)**, American Heart Association CVSN
2009 **Martha N. Hill New Investigator Award**, American Heart Association CVSN
2009 **Marion R. Gregory Award** for Distinguished Completed Doctoral Dissertation, University of Pennsylvania School of Nursing
2009 **Teresa I. Lynch Award** for Consistent Contribution to the Advancement of the School of Nursing, University of Pennsylvania School of Nursing
2006 **Sigma Theta Tau Award for Outstanding Academic Achievement and Leadership**, University of PA School of Nursing
2006 **Teaching Assistant Award for Excellence in Teaching**, University of Pennsylvania School of Nursing
2005 **Membership Induction**, Sigma Theta Tau International

Secondary Honors:

2015 Top 3 Reviewer, Journal of Cardiovascular Nursing
2014 Top 3 Reviewer, Journal of Cardiovascular Nursing
2013 Graduate Student Marshall for Excellence in Graduate Teaching, Oregon Health & Science School of Nursing

- 2011 Graduate Student Marshall for Excellence in Graduate Teaching, Oregon Health & Science School of Nursing
- 2010 Top 5 Reviewer, Journal of Cardiovascular Nursing
- 2010 4th Asia-Pacific Meeting Research Award Finalist, International Society of Pharmacoeconomics and Outcomes Research
- 2010 15th International Meeting Research Award Finalist, International Society of Pharmacoeconomics and Outcomes Research
- 2009 Top 5 Reviewer, Journal of Cardiovascular Nursing
- 2006 Nurse Scholars Grant, Independence Blue Cross/Pennsylvania Higher Education Foundation
- 2006 Nursing Research Award Finalist, Heart Failure Society of America
- 2006 Research Fellowship, University of Pennsylvania
- 2005 Nurse Scholars Grant, Independence Blue Cross/Pennsylvania Higher Education Foundation
- 2004 Marry Ann Gamba Nursing Scholarship, University of PA School of Nursing

PROFESSIONAL SOCIETIES:

- 2012-present Western Institute of Nursing
- 2009-present International Society of Pharmacoeconomics and Outcomes Research
- 2005-present Honor Society of Nursing, Sigma Theta Tau International Xi Chapter
- 2004-present Heart Failure Society of America
- 2004-present American Heart Association
- 2002-2009 American Association of Critical Care Nurses

PUBLICATIONS:

Refereed Articles (*original research):

[mentored students in *italics*, mentored colleagues underlined]

Lee, C. S. (2006). Role of exogenous arginine vasopressin in the management of catecholamine-refractory septic shock. *Crit Care Nurse*, 26(6), 17-23. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17123948>

Lee, C. S., & Tkacs, N. C. (2008). Current concepts of neurohormonal activation in heart failure: mediators and mechanisms. *AACN Adv Crit Care*, 19(4), 364-385; quiz 386-367. doi:10.1097/01.AACN.0000340718.93742.c4

*Brusselle, G., Michils, A., Louis, R., Dupont, L., Van de Maele, B., Delobbe, A., Pilette, C., **Lee, C.S.,** Abraham, I. (2009). "Real-life" effectiveness of omalizumab in patients with severe persistent allergic asthma: The PERSIST study. *Respir Med*, 103(11), 1633-1642. doi:10.1016/j.rmed.2009.06.014

***Lee, C. S.,** Riegel, B., Driscoll, A., Suwanno, J., Moser, D. K., Lennie, T. A., Worrall-Carter, L. (2009). Gender differences in heart failure self-care: a multinational cross-sectional study. *Int J Nurs Stud*, 46(11), 1485-1495. doi:10.1016/j.ijnurstu.2009.04.004

***Lee, C. S.,** Suwanno, J., & Riegel, B. (2009). The relationship between self-care and health status domains in Thai patients with heart failure. *Eur J Cardiovasc Nurs*, 8(4), 259-266. doi:10.1016/j.ejcnurse.2009.04.002

Lee, C. S., Tkacs, N. C., & Riegel, B. (2009). The influence of heart failure self-care on health outcomes:

hypothetical cardioprotective mechanisms. *J Cardiovasc Nurs*, 24(3), 179-187; quiz 188-179. doi:10.1097/JCN.0b013e31819b5419

- *Meghani, S. H., **Lee, C. S.**, Hanlon, A. L., & Bruner, D. W. (2009). Latent class cluster analysis to understand heterogeneity in prostate cancer treatment utilities. *BMC Med Inform Decis Mak*, 9, 47. doi:10.1186/1472-6947-9-47
- *Riegel, B., **Lee, C. S.**, Dickson, V. V., & Carlson, B. (2009). An update on the self-care of heart failure index. *J Cardiovasc Nurs*, 24(6), 485-497. doi:10.1097/JCN.0b013e3181b4baa0
- Riegel, B., Moser, D. K., Anker, S. D., Appel, L. J., Dunbar, S. B., Grady, K. L., Gurvitz, M.Z., Havranek, E.P., **Lee, C.S.**, Whellan, D.J. (2009). State of the science: promoting self-care in persons with heart failure: a scientific statement from the American Heart Association. *Circulation*, 120(12), 1141-1163. doi:10.1161/CIRCULATIONAHA.109.192628
- *Song, M., & **Lee, C. S.** (2009). Diabetes self-care maintenance, co-morbid conditions, and perceived health. *European Diabetes Nursing*, 6.
- *Van der Niepen, P., Woestenburg, A., Brie, H., Vancayzeele, S., MacDonald, K., Denhaerynck, K., **Lee, C.**, Abraham, I. (2009). Effectiveness of valsartan for treatment of hypertension: patient profiling and hierarchical modeling of determinants and outcomes (the PREVIEW study). *Ann Pharmacother*, 43(5), 849-861. doi:10.1345/aph.1L576
- *Abraham, I., Demosthenes, L., MacDonald, K., **Lee, C. S.**, Reel, S., Brie, H., . . . Van der Niepen, P. (2010). Hierarchical linear and logistic modeling of outcomes of antihypertensive treatment in elderly patients: findings from the PREVIEW study. *Arch Gerontol Geriatr*, 51(1), 45-53. doi:10.1016/j.archger.2009.07.009
- *Abraham, I., **Lee, C.**, Song, M., Vancayzeele, S., Brie, H., Hermans, C., . . . Macdonald, K. (2010). "Later, lazier, and unluckier": a heuristic profile of high vulnerability is an independent predictor of uncontrolled blood pressure (the PREVIEW study). *Int J Gen Med*, 3, 163-166. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20689688>
- Riegel, B., **Lee, C. S.**, & Sochalski, J. (2010). Developing an instrument to measure heart failure disease management program intensity and complexity. *Circ Cardiovasc Qual Outcomes*, 3(3), 324-330. doi:10.1161/CIRCOUTCOMES.109.877324
- *Abraham, I., MacDonald, K., Hermans, C., Aerts, A., **Lee, C.**, Brie, H., & Vancayzeele, S. (2011). Real-world effectiveness of valsartan on hypertension and total cardiovascular risk: review and implications of a translational research program. *Vasc Health Risk Manag*, 7, 209-235. doi:10.2147/VHRM.S9434
- *Dickson, V., **Lee, C. S.**, & Riegel, B. (2011). How do cognition and knowledge affect heart failure self-care? *Journal of Mixed Methods Research*, 5, 167-189. doi:10.1177/1558689811402355
- *Gascon, P., Aapro, M., Ludwig, H., Rosencher, N., Turner, M., Song, M., MacDonald, K., **Lee, C.**, . . . Abraham, I. (2011). Background and methodology of MONITOR-GCSF, a pharmaco-epidemiological study of the multi-level determinants, predictors, and clinical outcomes of febrile neutropenia prophylaxis with biosimilar granulocyte-colony stimulating factor filgrastim. *Crit Rev Oncol Hematol*, 77(3), 184-197. doi:10.1016/j.critrevonc.2010.01.014
- ***Lee, C. S.**, Moser, D. K., Lennie, T. A., & Riegel, B. (2011). Event-free survival in adults with heart

failure who engage in self-care management. *Heart Lung*, 40(1), 12-20.
doi:10.1016/j.hrtlng.2009.12.003

- ***Lee, C. S.**, Moser, D. K., Lennie, T. A., Tkacs, N. C., Margulies, K. B., & Riegel, B. (2011). Biomarkers of myocardial stress and systemic inflammation in patients who engage in heart failure self-care management. *J Cardiovasc Nurs*, 26(4), 321-328. doi:10.1097/JCN.0b013e31820344be
- *Lins, R., Aerts, A., Coen, N., Hermans, C., MacDonald, K., Brie, H., **Lee, C.S.** . . . Abraham, I. (2011). Effectiveness of amlodipine-valsartan single-pill combinations: hierarchical modeling of blood pressure and total cardiovascular disease risk outcomes (the EXCELLENT study). *Ann Pharmacother*, 45(6), 727-739. doi:10.1345/aph.1P663
- *Lins, R., Coen, N., Aerts, A., Macdonald, K., Brie, H., Hermans, C., Shen, Y.M., **Lee, C.S.**, . . . Abraham, I. (2011). Modelling of blood pressure and total cardiovascular risk outcomes after second-line valsartan therapy: the BSCORE study. *Arch Cardiovasc Dis*, 104(8-9), 428-434. doi:10.1016/j.acvd.2010.12.005
- *MacDonald, K., **Lee, C. S.**, Chen, H. C., Ko, M. L., Fidel, G. E., Brie, H., . . . Abraham, I. (2011). Gender-specific, multi-level determinants of outcomes of antihypertensive treatment: a sub-analysis of the Belgian PREVIEW study. *J Hum Hypertens*, 25(6), 372-382. doi:10.1038/jhh.2010.71
- *Rathman, L. D., **Lee, C. S.**, Sarkar, S., & Small, R. S. (2011). A critical link between heart failure self-care and intrathoracic impedance. *J Cardiovasc Nurs*, 26(4), E20-26. doi:10.1097/JCN.0b013e3181ee28c8
- *Riegel, B., **Lee, C. S.**, Albert, N., Lennie, T., Chung, M., Song, E. K., . . . Moser, D. K. (2011). From novice to expert: confidence and activity status determine heart failure self-care performance. *Nurs Res*, 60(2), 132-138. doi:10.1097/NNR.0b013e31820978ec
- Riegel, B., **Lee, C. S.**, Dickson, V. V., & Medscape. (2011). Self care in patients with chronic heart failure. *Nat Rev Cardiol*, 8(11), 644-654. doi:10.1038/nrcardio.2011.95
- *Verpooten, G. A., Aerts, A., Coen, N., Vancayzeele, S., Hermans, C., Bowles, J., . . . **Lee, C. S.** (2011). Antihypertensive effectiveness of aliskiren for the 'real-world' management of hypertension: multilevel modelling of 180-day blood pressure outcomes (the Belgian DRIVER Study). *Int J Clin Pract*, 65(1), 54-63. doi:10.1111/j.1742-1241.2010.02562.x
- *Buck, H. G., **Lee, C. S.**, Moser, D. K., Albert, N. M., Lennie, T., Bentley, B., . . . Riegel, B. (2012). Relationship between self-care and health-related quality of life in older adults with moderate to advanced heart failure. *J Cardiovasc Nurs*, 27(1), 8-15. doi:10.1097/JCN.0b013e3182106299
- Lee, C. S.**, Greenberg, B. H., Laramee, A. S., Ammon, S. E., Prasun, M., Galvao, M., . . . Bither, C. (2012). HFSA and AAHFN joint position statement: advocating for a full scope of nursing practice and leadership in heart failure. *J Card Fail*, 18(11), 811-812. doi:10.1016/j.cardfail.2012.09.001
- Lee, C. S.**, Greenberg, B. H., Laramee, A. S., Ammon, S. E., Prasun, M., Galvao, M., . . . Bither, C. (2012). HFSA and AAHFN joint position statement: advocating for a full scope of nursing practice and leadership in heart failure. *Heart Lung*, 41(6), 531-533. doi:10.1016/j.hrtlng.2012.10.002
- Moser, D. K., Dickson, V., Jaarsma, T., **Lee, C.**, Stromberg, A., & Riegel, B. (2012). Role of self-care in

the patient with heart failure. *Curr Cardiol Rep*, 14(3), 265-275. doi:10.1007/s11886-012-0267-9

- *Riegel, B., **Lee, C. S.**, Glaser, D., & Moelter, S. T. (2012). Patterns of Change in Cognitive Function over Six Months in Adults with Chronic Heart Failure. *Cardiol Res Pract*, 2012, 631075. doi:10.1155/2012/631075
- *Riegel, B., **Lee, C. S.**, Ratcliffe, S. J., De Geest, S., Potashnik, S., Patey, M., . . . Weintraub, W. S. (2012). Predictors of objectively measured medication nonadherence in adults with heart failure. *Circ Heart Fail*, 5(4), 430-436. doi:10.1161/CIRCHEARTFAILURE.111.965152
- *Abraham, I., MacDonald, K., Song, M., Ciesielski, G., Pacheco, C., **Lee, C.**, . . . Vancayzeele, S. (2013). Patient- and physician-level determinants of blood pressure response to treatment in normal weight and overweight patients (the PREVIEW study). *Nutr Metab Cardiovasc Dis*, 23(4), 314-322. doi:10.1016/j.numecd.2011.06.005
- Gesualdo, L., London, G., Turner, M., **Lee, C.**, Macdonald, K., Goldsmith, D., . . . Abraham, I. (2013). A pharmacoepidemiological study of the multi-level determinants, predictors, and clinical outcomes of biosimilar epoetin alfa for renal anaemia in haemodialysis patients: background and methodology of the MONITOR-CKD5 study. *Intern Emerg Med*, 8(5), 389-399. doi:10.1007/s11739-011-0622-7
- Jurgens, C. Y., Faulkner, K. M., & **Lee, C. S.** (2013). Phenotypic profiling of cognitive impairment risk among patients with heart failure: a literature review of the usefulness of cardiac-related variables. *Eur J Cardiovasc Nurs*, 12(2), 109-131. doi:10.1177/1474515112470046
- *Jurgens, C. Y., **Lee, C. S.**, Reitano, J. M., & Riegel, B. (2013). Heart failure symptom monitoring and response training. *Heart Lung*, 42(4), 273-280. doi:10.1016/j.hrtlng.2013.03.005
- ***Lee, C. S.**, Gelow, J. M., *Bidwell, J. T.*, Mudd, J. O., Green, J. K., Jurgens, C. Y., & Woodruff-Pak, D. S. (2013). Blunted responses to heart failure symptoms in adults with mild cognitive dysfunction. *J Cardiovasc Nurs*, 28(6), 534-540. doi:10.1097/JCN.0b013e31826620fa
- ***Lee, C. S.**, Lyons, K. S., Gelow, J. M., Mudd, J. O., Hiatt, S. O., Nguyen, T., & Jaarsma, T. (2013). Validity and reliability of the European Heart Failure Self-care Behavior Scale among adults from the United States with symptomatic heart failure. *Eur J Cardiovasc Nurs*, 12(2), 214-218. doi:10.1177/1474515112469316
- **Lockwood, M. B.*, Saunders, M. R., **Lee, C. S.**, Becker, Y. T., Josephson, M. A., & Chon, W. J. (2013). Kidney transplant and the digital divide: is information and communication technology a barrier or a bridge to transplant for African Americans? *Prog Transplant*, 23(4), 302-309. doi:10.7182/pit2013869
- *Macdonald, K., Brie, H., Vancayzeele, S., **Lee, C.**, Bowles, J., Piotrowski, K., . . . Abraham, I. (2013). Modelling of blood pressure outcomes in patients with and without established cardiovascular or renal disease following treatment with valsartan (the PREVIEW study). *Arch Cardiovasc Dis*, 106(3), 124-134. doi:10.1016/j.acvd.2012.11.006
- *Barbaranelli, C., **Lee, C. S.**, Vellone, E., & Riegel, B. (2014). Dimensionality and reliability of the self-care of heart failure index scales: further evidence from confirmatory factor analysis. *Res Nurs Health*, 37(6), 524-537. doi:10.1002/nur.21623

- *Franklin, A. E., Burns, P., & Lee, C. S. (2014). Psychometric testing on the NLN Student Satisfaction and Self-Confidence in Learning, Simulation Design Scale, and Educational Practices Questionnaire using a sample of pre-licensure novice nurses. *Nurse Educ Today*, 34(10), 1298-1304. doi:10.1016/j.nedt.2014.06.011
- *Franklin, A. E., & Lee, C. S. (2014). Effectiveness of simulation for improvement in self-efficacy among novice nurses: a meta-analysis. *J Nurs Educ*, 53(11), 607-614. doi:10.3928/01484834-20141023-03
- *Franklin, A. E., Sideras, S., Gubrud-Howe, P., & Lee, C. S. (2014). Comparison of expert modeling versus voice-over PowerPoint lecture and presimulation readings on novice nurses' competence of providing care to multiple patients. *J Nurs Educ*, 53(11), 615-622. doi:10.3928/01484834-20141023-01
- *Lee, C. S., Chien, C. V., Bidwell, J. T., Gelow, J. M., Denfeld, Q. E., Masterson Creber, R., . . . Mudd, J. O. (2014). Comorbidity profiles and inpatient outcomes during hospitalization for heart failure: an analysis of the U.S. Nationwide inpatient sample. *BMC Cardiovasc Disord*, 14, 73. doi:10.1186/1471-2261-14-73
- *Lee, C. S., Gelow, J. M., Denfeld, Q. E., Mudd, J. O., Burgess, D., Green, J. K., . . . Jurgens, C. Y. (2014). Physical and psychological symptom profiling and event-free survival in adults with moderate to advanced heart failure. *J Cardiovasc Nurs*, 29(4), 315-323. doi:10.1097/JCN.0b013e318285968a
- Lee, C. S., Mudd, J. O., Gelow, J. M., Nguyen, T., Hiatt, S. O., Green, J. K., Denfeld, Q.E., Bidwell, J.T. Grady, K. L. (2014). Background and design of the profiling biobehavioral responses to mechanical support in advanced heart failure study. *J Cardiovasc Nurs*, 29(5), 405-415. doi:10.1097/JCN.0b013e318299fa09
- *Lyons, K. S., Lee, C. S., Bennett, J. A., Nail, L. M., Fromme, E., Hiatt, S. O., & Sayer, A. G. (2014). Symptom incongruence trajectories in lung cancer dyads. *J Pain Symptom Management*, 48(6), 1031-1040. doi:10.1016/j.jpainsymman.2014.02.004
- *Masterson Creber, R., Lee, C. S., Lennie, T. A., Topaz, M., & Riegel, B. (2014). Using growth mixture modeling to identify classes of sodium adherence in adults with heart failure. *J Cardiovasc Nurs*, 29(3), 209-217. doi:10.1097/JCN.0b013e3182834191
- *Masterson Creber, R., Topaz, M., Lennie, T. A., Lee, C. S., Puzantian, H., & Riegel, B. (2014). Identifying predictors of high sodium excretion in patients with heart failure: a mixed effect analysis of longitudinal data. *Eur J Cardiovasc Nurs*, 13(6), 549-558. doi:10.1177/1474515113517606
- *Ross, A. M., Lee, C. S., & Brewer, M. (2014). Peripheral immune response and infection in first-time and recurrent ischemic stroke or transient ischemic attack. *J Neurosci Nurs*, 46(4), 199-206. doi:10.1097/JNN.0000000000000061
- Barbaranelli, C., Lee, C. S., Vellone, E., & Riegel, B. (2015). The problem with Cronbach's Alpha: comment on Sijtsma and van der Ark (2015). *Nurs Res*, 64(2), 140-145. doi:10.1097/NNR.0000000000000079
- *Bidwell, J. T., Vellone, E., Lyons, K. S., D'Agostino, F., Riegel, B., Juarez-Vela, R., . . . Lee, C. S. (2015). Determinants of Heart Failure Self-Care Maintenance and Management in Patients and

Caregivers: A Dyadic Analysis. *Res Nurs Health*, 38(5), 392-402. doi:10.1002/nur.21675

- *Denfeld, Q. E., Mudd, J. O., Gelow, J. M., Chien, C., Hiatt, S. O., & Lee, C. S. (2015). Physical and psychological symptom biomechanics in moderate to advanced heart failure. *J Cardiovasc Nurs*, 30(4), 346-350. doi:10.1097/JCN.0000000000000171
- *Franklin, A. E., Gubrud-Howe, P., Sideras, S. & Lee, C. S. (2015). Effectiveness of Simulation Preparation on Novice Nurses' Competence and Self-Efficacy in a Multiple-Patient Simulation. *Nurs Educ Perspect*, 36(5), 324-325. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/26521502>
- *Gelow, J. M., Mudd, J. O., Chien, C. V. & Lee, C. S. (2015). Usefulness of cognitive dysfunction in heart failure to predict cardiovascular risk at 180 days. *Am J Cardiol*, 115(6), 778-782. doi:10.1016/j.amjcard.2014.12.040
- *Jurgens, C. Y., Lee, C. S., & Riegel, B. (2015). Psychometric Analysis of the Heart Failure Somatic Perception Scale as a Measure of Patient Symptom Perception. *J Cardiovasc Nurs*. doi:10.1097/JCN.0000000000000320
- Lee, C. S. (2015). Mechanisms of Cardiotoxicity and the Development of Heart Failure. *Crit Care Nurs Clin North Am*, 27(4), 469-481. doi:10.1016/j.cnc.2015.07.002
- Lee, C. S., & Auld, J. (2015). Heart Failure: A Primer. *Crit Care Nurs Clin North Am*, 27(4), 413-425. doi:10.1016/j.cnc.2015.07.009
- *Lee, C. S., Gelow, J. M., Mudd, J. O., Green, J. K., Hiatt, S. O., Chien, C., & Riegel, B. (2015). Profiles of self-care management versus consulting behaviors in adults with heart failure. *Eur J Cardiovasc Nurs*, 14(1), 63-72. doi:10.1177/1474515113519188
- *Lee, C. S., Hiatt, S. O., Denfeld, Q. E., Chien, C. V., Mudd, J. O., & Gelow, J. M. (2015). Gender-Specific Physical Symptom Biology in Heart Failure. *J Cardiovasc Nurs*, 30(6), 517-521. doi:10.1097/JCN.0000000000000191
- *Lee, C. S., Hiatt, S. O., Denfeld, Q. E., Mudd, J. O., Chien, C., & Gelow, J. M. (2015). Symptom-Hemodynamic Mismatch and Heart Failure Event Risk. *J Cardiovasc Nurs*, 30(5), 394-402. doi:10.1097/JCN.0000000000000175
- *Lee, C. S., Kitko, L., Biddle, M., & Riegel, B. J. (2015). Successful Mentoring Relationships: American Heart Association Council on Cardiovascular and Stroke Nursing. *J Cardiovasc Nurs*, 30(5), 379-381. doi:10.1097/JCN.0000000000000275
- *Lee, C. S., Mudd, J. O., Hiatt, S. O., Gelow, J. M., Chien, C., & Riegel, B. (2015). Trajectories of heart failure self-care management and changes in quality of life. *Eur J Cardiovasc Nurs*, 14(6), 486-494. doi:10.1177/1474515114541730
- *Lee, C. S., Vellone, E., Lyons, K. S., Cocchieri, A., Bidwell, J. T., D'Agostino, F., . . . Riegel, B. (2015). Patterns and predictors of patient and caregiver engagement in heart failure care: a multi-level dyadic study. *Int J Nurs Stud*, 52(2), 588-597. doi:10.1016/j.ijnurstu.2014.11.005
- *Lockwood, M., Saunders, M., Josephson, M. A., Becker, Y. T., & Lee, C. (2015). Determinants of frequent Internet use in an urban kidney transplant population in the United States: characterizing the digital divide. *Prog Transplant*, 25(1), 9-17. doi:10.7182/pit2015957

- *Lyons, K. S., Vellone, E., **Lee, C. S.**, Cocchieri, A., *Bidwell, J. T.*, D'Agostino, F., . . . Riegel, B. (2015). A Dyadic Approach to Managing Heart Failure With Confidence. *J Cardiovasc Nurs*, 30(4 Suppl 1), S64-71. doi:10.1097/JCN.0000000000000234
- **Masterson Creber, R. M.*, **Lee, C. S.**, Margulies, K., & Riegel, B. (2015). Identifying biomarker patterns and predictors of inflammation and myocardial stress. *J Card Fail*, 21(6), 439-445. doi:10.1016/j.cardfail.2015.02.006
- ***Ross, A. M.**, & **Lee, C. S.** (2015). Description and Identification of the Peripheral Immune Response Trajectories Over Time in First-Time and Recurrent Stroke/Transient Ischemic Attack. *J Neurosci Nurs*, 47(5), 256-262. doi:10.1097/JNN.0000000000000157
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- 2011 **Lee, C.S.**, Gelow, J.M., Woodruff-Pak, D.S., Green J., Rosenfeld, A., Kim, A.Y. Blunted responses to heart failure symptoms in adults with mild cognitive dysfunction. 2011 Scientific Sessions of the American Heart Association, November 2011, Orlando, FL. *Circulation* 2011;124:A12237.
- 2011 **Lee, C.S.**, Green J., Kim, A.Y., Rosenfeld, A. Physical and psychological symptom profiles predict poor quality-of-life in advanced heart failure. 2011 Scientific Sessions of the American Heart Association, November, 2011, Orlando, FL. *Circulation* 2011;124:A12250.
- 2011 **Lee, C.S.**, Kim, A.Y., Green, J., Rosenfeld, A. Symptom profiles in advanced heart failure with marked differences in health related quality-of-life. 15th Annual Scientific Meeting of the Heart Failure Society of America, September, 2011, Boston, MA. *Journal of Cardiac Failure* 2011; 17(8), S76.
- 2010 **Lee, C.S.**, Skrepnek, G.H., MacDonald, K., Abraham, I. Relationships between physical inactivity and health care expenditure and resource use in patients with primary hypertension. ISPOR 15th Annual International Meeting, May 2010, Atlanta, GA. **Finalist, ISPOR Research Award.** *Value in Health* 2010, 13(3) A174.
- 2010 **Lee, C.S.**, Skrepnek, G.H. Co-morbid determinants of higher inpatient costs in 147,013 patients admitted for heart failure. 14th Annual Scientific Meeting of the Heart Failure Society of America, September 2010, San Diego, CA. *Journal of Cardiac Failure* 2010; 16(8), S89-S90.
- 2010 **Lee, C.S.**, Skrepnek, G.H. Not just the usual suspects: co-morbid drivers of inpatient costs in 620,728 adult admissions for heart failure. 2010 Scientific Sessions of the American Heart Association, November 2010, Chicago, IL. *Circulation* 2010; 122, A18870.
- 2010 **Lee, C.S.**, Skrepnek, G.H. Physical activity makes a difference: out-of-pocket health care expenditure and quality-of-life in patients with primary hypertension. 2010 Scientific Sessions of the American Heart Association, November 2010, Chicago, IL. *Circulation; Circulation* 2010; 122, A19891.
- 2009 **Lee, C.S.**, Riegel, B. Comorbid renal disease and treatment adherence are determinants of symptom recognition and treatment in patients with symptomatic heart failure. 13th Annual Scientific Meeting of the Heart Failure Society of America, September, Boston, MA. *Journal of Cardiac Failure* 2009; 15(6), S110.

- 2009 **Lee, C.S.**, Moser, D.K., Lennie, T.A., Tkacs, N.C., Margulies, K.B., Riegel, B. Biomarkers of myocardial stress and systemic inflammation are lower in patients who engage in heart failure self-care management. 2009 Scientific Session of the American Heart Association, November 2009, Orlando, FL. **Winner, 2009 Martha N. Hill New Investigator Award.** *Circulation*, 2009, 120, S415-S416
- 2008 **Lee, C.S.**, Moser, D.K., Lennie, T.A. & Riegel, B. Engaging in self-care management improves event-free survival in adults with heart failure. 2008 Scientific Session of the American Heart Association, November 2008, New Orleans, LA. *Circulation* 118, S769.
- 2007 **Lee, C.S.**, Carlson, B. & Riegel, B. Heart Failure Self-Care Improves Economic Outcomes, But Only When Confidence is High. 11th Annual Scientific Meeting of the Heart Failure Society of America, September, Washington D.C. **Finalist, 2007 Nursing Research Award.** *Journal of Cardiac Failure*, 13(6), S75.

Dissertation

Lee, Christopher Sean (2009) The influence of heart failure self-care behavior on health outcomes and cardiac performance. University of Pennsylvania, ProQuest Dissertations Publishing, 2009. 3363385. Drs. Barbara Riegel, Kenneth Margulies and Nancy Tkacs.

RESEARCH AND SCHOLARSHIP:

It is a great privilege to lead a program of research in heart failure that is focused on integrative symptom science and patients' response to symptoms when they occur. My approach to research that I call "biobehavioral profiling" integrates insights from biological underpinnings of symptomatology as well as contemporary knowledge of advanced statistical techniques to disentangle heterogeneous responses to heart failure and therapies thereof. I am fully committed to interdisciplinary team science as well as mentoring emerging scientists and "parallel mentoring" of peer and senior faculty alike. I also have extensive interdisciplinary training in cardiovascular outcomes research and have worked as an advanced quantitative methodological consultant for many academic, foundation and industry partners. Finally, I feel like I am just getting started given how much more I would like to accomplish as a leading cardiovascular nurse scientist and strong advocate for the academic missions of research and teaching.

NINR National Advisory Council Presentation: https://www.youtube.com/watch?v=3tDFpJ_PvXU&t=16s

NINR Directors Lecture: <https://www.youtube.com/watch?v=FxeDaLX6qgk>

Research Funding:

Ongoing Research Support:

- 2015-2019 NIH/NINR **R01NR016017**; Role: **Co-Investigator** (Project PI: Hansen);
The goals of the proposed study are to identify patient and caregiver subgroups that have distinct trajectories of change in symptoms, and quantify the association of these trajectories with patient and caregiver outcomes (\$1,925,000).
- 2018-2023 NIH/NCI **R01CA218093**; Role: Co-Investigator (Project PI: Winters Stone)
Exercising Together: A randomized controlled trial to determine the efficacy of partnered exercise training to improve individual and relationship health in couples coping with cancer (\$2,500,000).

- 2017-2020 NIH/ORWH **K12HD043488**; Role: **Sponsor** (Project PI: Denfeld); Gender-Associated Differences in Physical Frailty Phenotypes in Heart Failure: Mechanisms and Outcomes. The goals of this study are to compare objective metrics of physical frailty among adult women and men living with heart failure (\$200,000).
- 2016-2021 NIH/NINR **K99NR016275**; Role: **Consultant** (Project PI: Masterson Creber); Advancing heart failure symptom science and fostering self-management using novel mHealth applications. The overall objective of the proposed project is to test the hypothesis that a novel app, mi. Symptoms, can alter patient-reported and clinical outcomes of patients with heart failure and lead to more successful symptom recognition and communication with healthcare providers (\$181,644 (K99)).

Completed Research Support:

- 2012-2017 NIH/NINR **R01NR013492**; Role: **PI (Project PI: Lee)**; Profiling Biobehavioral Responses to Mechanical Circulatory Support in Advanced Heart Failure (PREMISE). The goal of this research is to gain insight into heterogeneous patient-oriented and clinical outcomes in response to ventricular assist device implantation for advanced heart failure (\$1,386,000).
- 2015-2017 NIH/NHLBI **R01HL130502**; Role: **Co-Investigator/Site PI** (Project PI: Grady); The overall goal of the proposed research is to develop a measurement system to assess adjustment to mechanical circulatory support and health-related quality of life in patients with advanced heart failure who undergo device implantation (\$2,100,000).
- 2011-2013 AHA 11**BGIA7840062**; Role: **PI (Project PI: Lee)**; Patterns of Heart Failure Symptom Management Behaviors over Time: Associations with Quality of Life and Clinical Events. The goal of this study was to identify distinct trajectories of change in patient-oriented and clinical outcomes among adults with heart failure using growth mixture modeling (\$132,000).
- 2010-2012 NIH/ORWH **K12 HD043488-08**; Role: **PI (Project PI: Lee)**; Gender Differences in Heart Failure. The purpose of this study was to gain insight into gender- and sex-based differences in patient-oriented, economic and clinical outcomes among adults with heart failure using novel prospective data and population-level and complex sampling design databases (\$200,000).
- 2011-2013 NIH/NINR Federal **LRP**; Role: **PI (Project PI: Lee)**; Gender Differences in Heart Failure. This competitive program reimburses student loans for qualified scientists who make continued contributions to clinical research science (\$30,000).
- 2009-2010 HOPE Center Post-Doctoral Fellowship; Role: **PI (Project PI: Lee)**; University of Arizona College of Pharmacy Center for Health Outcomes and PharmacoEconomic Research Post-Doctoral Research Fellowship. The goal of this interdisciplinary research fellowship was to master methods used in the analysis of health outcomes including common approaches to “big data” and other complex data problems. Specific expertise was developed in meta-analysis and meta-regression, multi-level modeling, and latent and growth mixture modeling (\$75,000).

- 2007-2009 NIH/NINR 1F31NR010299; Role: **PI (Project PI: Lee)**; The Influence of Heart Failure Self-Care on Cardiac Performance. The goal of this project was to describe the relationship between heart failure self-care behaviors and patient-oriented, clinical, intermediary, and economic health outcomes (\$49,850).
- 2014-2015 OHSU Hartford Center; Role: **PI (Project PI: Lee)**; Accelerated Senescence and Symptom Biology in Heart Failure (ASCENSION). The goal of this study is to gain insight into the role of accelerated biological aging as a determinant of patient-oriented outcomes in response to left ventricular assist device implantation for advanced heart failure (\$25,000).
- 2015-2017 OHSU SON Innovations Grant; Role: **PI (Project PIs: Lee/Lyons)**; Influence of Symptom evaluation and physical function in heart failure couples (IN STEP). The goal of this study is to gain insight into symptom perception and contributions to care among heart failure patient-caregiver dyads (\$30,000).
- 2015-2017 OHSU Alumni Association; Role: **PI (Project PI: Lee)**; Oregon Research Initiative on the Organization of Nursing (ORION). The goal of this survey of the entire Oregon nursing workforce is to gain insight into the relationship between nursing work and nurses' general and psychological health (\$13,000).
- 2012-2017 HHS290201200004C; Role: **SRC Workgroup Lead**: Conducting Quantitative Synthesis Methods Guide (Project PI: Helfand); AHRQ: Scientific Resource Center II. The Scientific Resource Center (SRC) supports the activities of the Effective Health Care Program in many ways. The current project involves rewriting methods guidelines: Methods Guide for Conducting Comparative Effectiveness Reviews (\$11,418,702).
- 2017-2018 K12 HD043488-12; Role: **Research Director** (Project PI: Guise); Oregon BIRCWH: Scholars in Women's Health Research Across the Lifespan. This renewal is focused on: 1) providing scholars with the knowledge, skills, and encouragement to become leaders in academics/research organizations as well as science, 2) entrepreneurship, 3) a focus on infrastructure and activities that promote interdisciplinary team science including state and national cross-institutional research pilots in interdisciplinary women's health, and 4) BIRCWH alumni program (\$2,680,425).
- 2017-2018 OHSU SON Innovations Grant; Role: **PI (Project PI: Lee)**; Strategic Inquiry into Systemic Pro-inflammation and Hyper-volumetric Stress in Heart Failure (SISYPHUS-HF). The goal of the proposed study is to develop a new method of quantifying LVAD response that integrates robust biological (i.e. biomarkers) and behavioral (i.e. symptoms) metrics (\$18,000).
- 2016-2018 OHSU SON Innovations Grant; Role: **PI (Project PIs: Lee/Winters)**; Exercise and Cardiovascular Pathogenesis in Women Treated for cancer. The goal of this study is compare changes in cardiovascular biomarkers in response to three different exercise programs among women recovering from breast cancer (\$28,938).
- 2016-2017 OHSU Hartford Center; Role: **Co-I** (Project PI: Song, M); Healthy Grandparents, Healthy Grandchild: This study examines whether, or to what degree, grandparent participation and success in a weight-management program (Weight Watchers)

affects weight-related health outcomes for their grandchildren living in the same household (\$25,000).

- 2015-2017 OHSU SON Innovations Grant; Role: **Co-I** (Project PI: Song, M); Healthy Parents, Healthy Families: This study examines whether, or to what degree, parent participation and success in a weight-management program (Weight Watchers) affects weight-related health outcomes for their children living in the same household (\$30,000).
- 2015-2017 OHSU Hartford Center; Role: **Co-I** (Project PI: Ross); The Influence of Age on Norepinephrine Sensitivity and Lymphocyte Clonal Expansion in Acute Ischemic Stroke. The goal of this study is to gain insight into the role of accelerated biological aging as a determinant of outcomes in acute ischemic stroke (\$25,000).
- 2016 (NCE) OHSU SON Innovations Grant; Role: **Co-I** (Project PI: Ross); The Role of Immune Senescence in Stroke-induced Immunodeficiency. The goal of this study is to gain insight into gender-specific influences of biological aging on stroke outcomes (\$30,000).
- 2010-2011 Leonard Davis Institute; Role: **Co-I** (Project PI: Lake); Nursing Hospital Resource Configurations and Labor Market Contexts: The purpose of this study is to identify common configurations of hospital nursing resources using latent mixture modeling and to develop a database about the labor markets of over 800 hospitals in four states (\$10,000).
- 2010 NHCGNE/Frank Morgan Jones Fund; Role: **Co-I** (Project PI: Buck); The relationship between self-care and health related quality of life in older adults with moderate to advanced heart failure. The goal of this project was to describe the relationships between heart failure self-care and health related quality of life in older adults using advanced methodology (\$5,000).
- 2013-2014 Neuroscience Nurses Foundation; Role: **Co-I** (Project PI: Ross); Description and identification of the peripheral immune response trajectories over time in first time and recurrent stroke/TIA. The purpose of this study was to employ growth mixture modeling to identify common trajectories of change and age and gender differences in the peripheral inflammatory response to stroke (\$10,000).
- 2014-2016 NHCGNE Claire M. Fagin Post-Doc Fellow; Role: **Sponsor** (Project PI: Nagel); Using Machine Learning to Develop Comprehensive Predictive Models of Disability among Older Adults. The goals of this study are to employ machine-learning strategies to predict disability among older adults using data from the Health and Retirement and the National Health and Aging Trends Studies (\$200,000).
- 2015-2017 NIH/NINR F31NR015936; Role: **Sponsor** (Project PI: Denfeld); Symptom Biology and Accelerated Aging in Heart Failure. The goal of this study is to understand the biological underpinning of heart failure symptoms associated with physical frailty and metrics of metabolic and replicative senescence (\$85,862).
- 2013-2016 NIH/NINR F31NR014760; Role: **Sponsor** (Project PI: Bidwell); Mechanical Circulatory Support in Patient-Caregiver Dyads: A Longitudinal Study. The goal of this study is to identify patient- and caregiver-level determinants of worse patient

clinical and patient-oriented outcomes among adults undergoing left ventricular assist device implantation for advanced heart failure (\$119,005).

- 2014-2016 NIH/NINR **F31NR015195**; Role: **Sponsor** (Project PI: Miller); Preparing for future dementia care: A study of hospitalized patient-family dyads. The goal of this study is to understand the magnitude of incongruence in perceptions of care values in the acute care setting between persons with dementia and their informal caregivers (\$85,352).
- 2013-2014 STT International; Role: **Sponsor** (Project PI: Franklin); A Randomized Control Trial of Expert Modeling to Increase Novice Nurses' Competence and Self-Efficacy. The project also involved an extensive psychometric evaluation of measures used to determine novice nurses' self-efficacy in simulation and an exhaustive meta-analysis of all RCTs involving simulation interventions to enhance novice nurses' self-efficacy (\$10,000).
- 2013-2015 NHCGNE Patricia G. Archbold Scholar; Role: **Sponsor** (Project PI: Denfeld); Profiling the Frailty Phenotype among Older Adults with Heart Failure. The goals of this study are to quantify the added values of frailty measures among adults admitted for heart failure in explaining patient-oriented and clinical outcomes (\$100,000).
- 2013-2015 NHCGNE Patricia G. Archbold Scholar; Role: **Sponsor** (Project PI: Bidwell); Mechanical circulatory support in patient-caregiver dyads. The goal of this study is to identify patient- and caregiver-level determinants of worse patient clinical and patient-oriented outcomes among adults undergoing left ventricular assist device implantation for advanced heart failure (\$100,000).
- 2015-2018 NIH/ORWH **K12HD043488**; Role: **Sponsor** (Project PI: Tilden); Comparative effectiveness of group prenatal care vs. standard prenatal care. The goals of this study are to compare the effectiveness of group prenatal care vs. standard prenatal care on maternal and newborn outcomes (\$200,000).
- 2016-2018 NIH/NINR **F31NR016660**; Role: **Sponsor** (Project PI: Auld); The goals of this study a to determine the association of pulmonary congestion that is detected by devices used in the clinical management of HF with physical symptoms of HF and HRQOL and to examine the role of self-management in moderating the relationship between congestion, symptoms and quality of life (\$87,060).
- 2015-2017 NIH/NINR **F31NR016895**; Role: **Consultant** (Project PI: Alonso, W); Identifying Disparities: Rural-Urban Comparison in Mechanical Circulatory Support. The goal of this project is to compare clinical and patient-oriented outcomes of mechanical circulatory support between rural and urban adults with advanced heart failure (\$80,652).
- 2012-2014 NIH/NINR **F31NR014086**; Role: **Consultant** (Project PI: Creber); Profiling the Heterogeneous Response of Exercise Therapy in Heart Failure Patients. The goal of this research was to use growth mixture and parallel process modeling to gain insight into heterogeneous responses to exercise therapy using intermediary biomarker data from the HF-ACTION trial (\$126,696).
- 2017-2019 NIH/NINR **F32NR017322**; Role: **Mentor** (Project PI: Butts); Symptoms and Skeletal Muscle in Persons with Heart Failure with Preserved Ejection Fraction. The overall goal of this mentored training grant is to evaluate the link between

metrics of skeletal muscle function and symptoms among adults with heart failure with preserved ejection fraction.

INVITED PRESENTATIONS

National:

- 2018 **NINR Director's Lecture** "Integrative Symptom Biology," National Institutes of Health, November, 2018, Bethesda, MD.
- 2017 "Integrative symptom biology in mechanical circulatory support." Invited Podium Presentation; 2017 Scientific Sessions of the American Heart Association, November, Los Angeles, CA.
- 2017 "Prevention of Heart Failure. Invited Podium Presentation;" 2017 HFSA Future Leaders in Heart Failure, May, Miami, FL.
- 2016 "Evidence Saves Lives: Efficacious Nursing Interventions in Heart Failure;" Mayo Clinic, November, Phoenix, AZ.
- 2016 "Interpreting Statistics as Part of a Logical Argument in Nursing Science;" Mayo Clinic, November, Phoenix, AZ.
- 2016 "Hemodynamic and Symptom Mismatch." Invited Podium Presentation; Heart Failure Society of America Scientific Meeting 2016, September, Orlando, FL.
- 2016 "How Understanding Trajectories of Patient Adherence Can Help Clinicians Improve Adherence." Invited Podium Presentation; Heart Failure Society of America Scientific Meeting 2016, September, Orlando, FL.
- 2016 Opening Plenary: HF Disease Management through Family Partnerships: "A guided intervention for Patient/Family centered Care." American Association of Heart Failure Nurses, May, Scottsdale, AZ.
- 2016 "Building a program of biobehavioral research in heart failure." Council of the National Institute for Nursing Research, May, Bethesda, MD.
https://www.youtube.com/watch?v=3tDFpJ_PvXU&t=11s
- 2016 "What is heart failure self-care and how do we optimize it?" 13th Annual Oregon Chapter of the American College of Cardiology Cardiovascular Symposium, May, Portland, OR.
- 2015 "Team management of heart failure." Invited Podium Presentation; 2015 Scientific Sessions of the American Heart Association, November, Orlando, FL.
- 2015 "Early career nursing leadership in heart failure." Invited Podium Presentation; 2015 Scientific Meeting of the Heart Failure Society of America, September, Washington, DC.
- 2014 "Profiling Behavioral Responses to Mechanical Support in Advanced Heart Failure." Invited Podium Presentation; Scientific Sessions of the American Heart Association, November, Chicago, IL.
- 2014 "Gender Differences in the Self-Management of Cardiovascular Disease." Invited Podium Presentation; Scientific Sessions of the American Heart Association, November, Chicago, IL.
- 2014 "Managing Cardiovascular Symptoms in the Cognitively Impaired." Invited Podium Presentation; Scientific Sessions of the American Heart Association, November, Chicago, IL.
- 2014 "Patterns of Heart Failure Symptom Management Behaviors Time." Invited Podium Presentation; Scientific Sessions of the American Heart Association, November, Chicago, IL.
- 2014 "Learning When to Lead and When to Follow," National Hartford Center of Gerontological Nursing Excellence Fourteenth Annual Academic Leadership Conference, November, Washington, DC.

- 2013 **John and Nora Darby Endowed Lecture:** “Understanding the Mind-Body Link in Heart Failure” November, Ashland, OR.
- 2013 “Making An Impact” 13th Annual Leadership Conference, National Hartford Centers of Gerontological Nursing Excellence, New Orleans, LA.
- 2013 “Emerging Gender Science in Cardiovascular Disease” Western Institute of Nursing, Anaheim, CA.
- 2012 “Synthesizing Knowledge: Meta-Analysis and Meta-Regression” Translational Medicine in Arizona: Networks, Partnerships, and Initiatives, Flagstaff, AZ.
- 2012 “Biobehavioral Profiling in Advanced Heart Failure” University of Michigan School of Nursing, Ann Arbor, MI.
- 2012 “What Happens to Ventricular Function with Heart Failure Self-Care” Heart Failure Society of America Scientific Sessions, Seattle, WA.
- 2012 “Biobehavioral Profiling in Chronic Cardiovascular Disease” University of Chicago School of Nursing, Chicago, IL.
- 2012 “Advanced Quantitative Approaches in Nursing Science Part II: Latent Class and Growth Mixture Modeling” Western Institute of Nursing, Portland, OR
- 2012 “Intensive Workshop on Meta-Analysis and Meta-Regression” University of Arizona, Tucson, AZ.
- 2011 Profiles of Heart Failure Self-Care Behavior Predict 6-Month Event-Free Survival. 2011 Scientific Sessions of the American Heart Association, November, Orlando, FL.
- 2011 “Advanced Effectiveness Methodology” Center for Health Outcomes and Policy Research, University of Pennsylvania, Philadelphia, PA.
- 2010 “Contemporary Heart Failure Research: Self-Care, Symptoms, Systems, and Survival” November Scholar, OHSU School of Nursing, Portland, OR.
- 2009 “Relationships Between Heart Failure Self-Care and Health Outcomes and Cardiac Performance: The Why, What, How, and Where.” The University of Kentucky College of Nursing, April, Lexington, KY.

International Collaborations:

UNIVERSITY OF ROME, ROME, ITALY: I have an established and ongoing collaboration with Ercole Vellone, PhD, RN, FESC, Assistant Professor in Nursing Science, Department of Biomedicine and Prevention, and his team at the University of Rome. With his network of emerging nurse scientists and my group’s advanced quantitative methods (hierarchical linear modeling of dyadic data and latent class/growth mixture modeling), we have disseminated several new insights into patient and caregiver dyads in heart failure and stroke. This collaboration also has fostered great opportunities for PhD students to have access to larger cohort data, and for international team science and dissemination. Emerging prospects include a planned visiting professorship to the University of Rome, and ample opportunities for personal, colleague and student collaboration. Key examples (*several others and more in review*) of this collaboration include:

- **Lee, C. S., Vellone, E.,** Lyons, K. S., Cocchieri, A., Bidwell, J. T., D’Agostino, F., . . . Riegel, B. (2015). Patterns and predictors of patient and caregiver engagement in heart failure care: a multi-level dyadic study. *Int J Nurs Stud*, 52(2), 588-597.
- Lyons, K. S., **Vellone, E., Lee, C. S.,** Cocchieri, A., Bidwell, J. T., D’Agostino, F., . . . Riegel, B. (2015). A Dyadic Approach to Managing Heart Failure With Confidence. *J Cardiovasc Nurs*, 30(4 Suppl 1), S64-71.
- Bidwell, J. T., **Vellone, E.,** Lyons, K. S., D’Agostino, F., Riegel, B., Juarez-Vela, R., . . . **Lee, C. S.** (2015). Determinants of Heart Failure Self-Care Maintenance and Management in Patients and Caregivers: A Dyadic Analysis. *Res Nurs Health*, 38(5), 392-402.
- Pucciarelli, G., **Vellone, E.,** Savini, S., Simeone, S., Ausili, D., Alvaro, R., **Lee, C.S.** & Lyons, K. S. (2017). Roles of Changing Physical Function and Caregiver Burden on Quality of Life in Stroke: A Longitudinal Dyadic Analysis. *Stroke*, 48(3), 733-739.

LINKÖPING UNIVERSITY, LINKÖPING, SWEDEN: I have an established and ongoing collaboration with Tiny Jaarsma PhD, RN NFESC FAHA FAAN, Professor in the Department of Social and Welfare Studies at the University of Linköping, Sweden. In addition to being involved with an evidence-based review of self-care of heart failure with Dr. Jaarsma (*see citation below*) and the American Association of Heart Failure Nurses Position Statement on the Future of Heart Failure Research, I have collaborated with her on the psychometric testing of her European Heart Failure Self-care Behavior Scale among adults from the United States (*see citation below*). Most recently, Dr. Jaarsma and I have collaborated with a larger international team on the development and testing of the Left Ventricular Assist Device (LVAD) self-care behavior scale; this is an emerging partnership that will likely lead to multiple future opportunities for international collaboration, research and dissemination. Dr. Jaarsma and I also have collaborated on several other research projects involving the intersection of self-care, caregiver contributions to care, and clinical event-risk in heart failure along with PhD students and Dr. Vellone (above) that are currently under review.

- Moser, D. K., Dickson, V., **Jaarsma, T., Lee, C.**, Stromberg, A., & Riegel, B. (2012). Role of self-care in the patient with heart failure. *Curr Cardiol Rep*, 14(3), 265-275.
- **Lee, C. S.**, Lyons, K. S., Gelow, J. M., Mudd, J. O., Hiatt, S. O., Nguyen, T., & **Jaarsma, T.** (2013). Validity and reliability of the European Heart Failure Self-care Behavior Scale among adults from the United States with symptomatic heart failure. *Eur J Cardiovasc Nurs*, 12(2), 214-218.

HERHEART, MELBOURNE, AUSTRALIA: I began my collaboration with Dr. Linda Worrall-Carter when she was still a Professor at Australian Catholic University and St Vincent's Centre for Nursing Research. In that early collaboration, we focused on the role of gender in heart failure self-care internationally using data from patients from the United States, Thailand and Australia (*see citation below*). Later, we had the opportunity to collaborate on another project on self-care and quality of life in heart failure (*see citation below*). Most recently, Dr. Worrall-Carter left academics to start a foundation focused on raising awareness of heart disease among women worldwide (Her Heart <http://www.herheart.org>). I met with Dr. Worrall-Carter and other key members of Her Heart as a visiting professor in April, 2017 to establish a formal relationship with the foundation and develop a strategy for further international work. Hence, this is a refreshed and emerging partnership with a high likelihood of providing many opportunities for collaboration.

- **Lee, C. S.**, Riegel, B., Driscoll, A., Suwanno, J., Moser, D. K., Lennie, T. A., . . . **Worrall-Carter, L.** (2009). Gender differences in heart failure self-care: a multinational cross-sectional study. *Int J Nurs Stud*, 46(11), 1485-1495.
- Buck, H. G., **Lee, C. S.**, Moser, D. K., Albert, N. M., Lennie, T., Bentley, B., . . . **Worrall-Carter, L.**, Riegel, B. (2012). Relationship between self-care and health-related quality of life in older adults with moderate to advanced heart failure. *J Cardiovasc Nurs*, 27(1), 8-15.

PHARMACOEPIDEMIOLOGICAL CONSULTING: As a research scientist with Matrix45, I developed an extensive skillset in working with international and interdisciplinary teams. My specific role as a consulting research scientist entailed scientific writing on early projects (*PREVIEW study, citation below*), performing all statistical analysis and scientific communication (including being corresponding author) on later projects (*PERSIST study, citation below*), and in the development of the study design and protocol as well as performing all statistical analysis and scientific communication (including senior authorship) on even later projects (*DRIVER study, citation below*). Each project required extensive electronic communication, telephone and videoconferencing, as well as in-person meetings (Vilvoorde, Belgium) with the larger research team. The scientific directors of Matrix45 (Drs. Ivo Abraham and Karen MacDonald) are both nurse scientists and entrepreneurs. Thus, this international research consulting experience also exposed me to industry-sponsored science that was largely nurse-led, and also the integration of PhD students into industry-sponsored science. Moreover, this experience is where I learned

the most about scientific strategy and advanced analytic methods in general and multilevel modeling in particular.

- Van der Niepen, P., Woestenburg, A., Brie, H., Vancayzeele, S., MacDonald, K., Denhaerynck, K., **Lee, C.S.**, . . . Abraham, I. (2009). Effectiveness of valsartan for treatment of hypertension: patient profiling and hierarchical modeling of determinants and outcomes (the PREVIEW study). *Ann Pharmacother*, 43(5), 849-861.
- Brusselle, G., Michils, A., Louis, R., Dupont, L., Van de Maele, B., Delobbe, A., Pilette, C., **Lee, C.S.**. . . Abraham, I. (2009). "Real-life" effectiveness of omalizumab in patients with severe persistent allergic asthma: The PERSIST study. *Respir Med*, 103(11), 1633-1642.
- Verpooten, G. A., Aerts, A., Coen, N., Vancayzeele, S., Hermans, C., Bowles, J., . . . **Lee, C.S.** (2011). Antihypertensive effectiveness of aliskiren for the 'real-world' management of hypertension: multilevel modelling of 180-day blood pressure outcomes (the Belgian DRIVER Study). *Int J Clin Pract*, 65(1), 54-63.

TEACHING ACTIVITIES:

BRIEF STATEMENT OF TEACHING EFFECTIVENESS: Over my 7 years at OHSU, I had near-perfect student evaluations of teaching effectiveness (weighted average = 6.00±0.01 (range 1 (worst) to 6 (best)), and have mentored my PhD students to secure more than \$800,000 in competitive external research support.

Oregon Health & Science University School of Nursing

Courses Taught

2017	NURS	629*	Applied Statistics II: GLM
2016	NURS	633	PhD Pro-seminar
2016	NURS	629*	Applied Statistics II: GLM
2015	NURS	624	Integrative Seminar on Nursing Research
2015	NURS	629*	Applied Statistics II: GLM
2014	NURS	629*	Applied Statistics II: GLM
2013	NURS	631	Nursing Science Focus Area
2013	NURS	629*	Applied Statistics II: GLM
2012	NURS	631	Nursing Science Focus Area
2012	NURS	605	Heart Failure Pathophysiology (R&C)
2012	NURS	605*	Advanced Quantitative Research (R&C)
2012	NURS	605	Scientific Writing (R&C)
2011	NURS	617B*	Applied Statistics II: GLM
2011	NURS	605	Growth Mixture Modeling (R&C)
2011	NURS	607DB	Dissertation Seminar: Quantitative
2011	NURS	607DB	Dissertation Seminar: Quantitative
2010	NURS	607DB	Dissertation Seminar: Quantitative
2010	NURS	610A	Conceptualization in Nursing Research

* **NB:** These courses focus on applied advanced statistical approaches to “bigger data” and other complex data problems. Specific methods include meta-analysis and meta-regression, multi-level modeling, latent and growth mixture modeling, generalized linear modeling of complex non-normal distributions, and generalized linear mixed modeling. All assignments involve nationally-representative databases including the Medical Expenditure Panel Survey, Nationwide Inpatient Sample and the Behavioral Risk Factor Surveillance Survey so that students also learn how to effectively apply analytic weights to account for complex sampling designs and begin learning how to address questions using bigger data.

University of Arizona College of Pharmacy

Courses Taught

2018	3-Day Intensive Training Program in Meta-Analysis †
2017	3-Day Intensive Training Program in Meta-Analysis †
2016	3-Day Intensive Training Program in Meta-Analysis †
2015	3-Day Intensive Training Program in Meta-Analysis †
2014	3-Day Intensive Workshop on Meta-Analysis and Meta-Regression in the Health Sciences †
2012	2-Day Intensive Workshop on Meta-Analysis and Meta-Regression in the Health Sciences †

† **NB:** *In an era of information overload and increasing accountability, the goal of many aspects of research in healthcare has moved from understanding treatment effects within a single study to synthesizing effectiveness across multiple studies. This course is a multiday hands-on training program for personnel in healthcare decision-making and industry and academic research, or graduate training programs wanting to evaluate results across multiple studies. In addition to directing the entire course, I teach and lead exercises related to estimating within- and between-study effects and variability, conducting fixed effect and random effects meta-analyses, quantifying and interpreting heterogeneity, examining bias, meta-analysis of diagnostic accuracy and subgroup analysis and meta-regression. These meta-analytic and meta-regressive techniques are important to overcome challenges of merging data from multiple sources and other “bigger data” problems.*

University of Pennsylvania School of Nursing

Courses Taught

2008	NURS 607	Advanced Physiology and Pathophysiology
2008	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2007	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2007	NURS 767	Acute Care Nurse Practitioner: Clinical Practicum II & III
2007	NURS 607	Advanced Physiology and Pathophysiology
2007	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2007	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2006	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2006	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2006	NURS 607	Advanced Physiology and Pathophysiology
2006	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2005	NURS 607	Advanced Physiology and Pathophysiology
2005	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2005	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2005	NURS SYBIM	Instructional Technology Center, Senior Year Modules
2004	NURS SYBIM	Instructional Technology Center, Senior Year Modules

RESEARCH MENTORING

Oregon Health & Science University except where noted.

Name	Role	Current Benchmark	Current Institution
<u>DNP Clinical Inquiry Projects</u>			
Frederick McNeil	Committee Member	Completed May, 2011: Economic, Clinical and Humanistic Outcomes in Patients Implanted with the HeartMate II LVAS	HeartWare®
Deidre Goldberg	Committee Member	Completed May, 2014: Access to Care and Quality of Life Among Rural Adults with Heart Failure	HeartClinic, Southern Oregon
<u>PhD Dissertations</u>			
Corey Nagel	Committee Member	Defended May 2012: Neighborhood Built Environment and Lower Extremity Function Among Older Women	Assistant Professor, Oregon Health & Science University Schools of Nursing and Public Health
Ashley Franklin	Chair	Defended May, 2014: Quantifying the Influence of Expert Modeling on Nursing Student Learning	Assistant Professor, Texas Christian University School of Nursing
Donald W. Mitchell	Committee Member	Defended September, 2014: Measuring Parent Satisfaction with Symptom Management in Pediatric ED	Post-Doctoral Fellow, University of California San Francisco
Ruth Masterson Creber (UPenn)	Committee Member/F31 Consultant	Defended August, 2014: Profiling Biobehavioral Responses to Exercise Therapy in Heart Failure	Assistant Professor, Columbia University School of Nursing
Ellen Tilden	Committee Member	Defended May, 2015: Effectiveness of Group Prenatal Care on Mothers and Neonatal Outcomes	Assistant Professor, Oregon Health & Science University School of Nursing
Quin Denfeld	Chair/F31 Sponsor	Defended June, 2016: Symptom biology and accelerated aging in heart failure	Assistant Professor, Oregon Health & Science
Julie Bidwell	Chair/F31 Sponsor	Defended August, 2016: Patient-Caregiver Dyadic Dynamics in Heart Failure and Ventricular Assist Device Therapy	Post-Doctoral Fellow, Emory University School of Nursing
Mark Lockwood	Chair	Defended May, 2016: Mitigating Barriers and Inequities to the Pre-kidney	Assistant Professor, University of Illinois College of Nursing

Lyndsey Miller	Committee Member/F31 Co-Sponsor	Transplant Evaluation Defended, May, 2016: Planning for Dementia Care Together: A Study of Hospitalized Patient-Family Caregiver Dyads	Post-Doctoral Fellow, University of Utah College of Nursing
Windy Alonso <i>(Penn State)</i>	F31 Consultant	Identifying Disparities: Rural-Urban Comparison in Mechanical Circulatory Support	Pre-Doctoral Fellow: The Penn State University School of Nursing
Jonathan Auld	Chair/F31 Sponsor	Monitoring of Pulmonary Congestion in Heart Failure	Pre-Doctoral Fellow: Oregon Health & Science University

Post-Doctoral/Early Career Fellowships

Corey Nagel	Sponsor, Fagin Fellowship	Completed 2016: Using Machine Learning to Develop Comprehensive Predictive Models of Disability among Older Adults	Assistant Professor, Oregon Health & Science University Schools of Nursing and Public Health
Christopher Chien	Sponsor, Human Investigators Program	Completed 2016: Hemodynamics of Patients on Durable Mechanical Circulatory Support	Clinical Assistant Professor of Medicine/ Advanced Heart Failure and Transplantation Medical Director, UNC REX Heart Failure Clinic Assistant Professor, Oregon Health & Science University School of Nursing
Ellen Tilden	Sponsor, K12	Current: Comparative Effectiveness of Group Prenatal Care vs. Usual Care on Maternal and Neonatal Outcomes	Assistant Professor, Oregon Health & Science University School of Nursing
Ruth Masterson Creber	Consultant, K99/R00	Current: Advancing heart failure symptom science and fostering self-management using novel mHealth applications	Assistant Professor, Columbia University School of Nursing

Equity/EXITO Scholars

Ellen Holt	Sponsor	2015 Summer Equity Program	Research Associate, Oregon Health & Science University School of Medicine
Trevor Soucey	Sponsor	2016 Summer Equity Program	Senior, Reed College
Cassie Martinez	Sponsor	2016 EXITO Scholars Program	Junior, Portland State University

PROFESSIONAL ACTIVITIES AND SERVICE:

Academic Major Committee Assignments:

University Committees

OHSU School of Nursing

2016-2018	Mid-Career Research Scientist Search Committee (Co-Chair)
2013-2015	Associate Dean for Research Search Committee (Chair)
2013-2015	Men in Nursing (Faculty Advisor)
2011-2013	PhD Admissions and Progressions Committee (Elected)
2010-2016	Research Council (Elected for a 2 nd term in 2013)

OHSU Campus-Wide

2017-2018	OCTRI KL2 International Advisory Committee
2016-2018	PCOR K12 Internal Advisory Committee
2015-2018	Collaborative Research Leadership Task Force
2014-2018	NWCCU Accreditation Steering Committee
2013-2018	Emergency Medicine K12 Internal Advisory Committee
2011-2013	Hospital Nursing Research Council

Major Research Service:

State/National/International

2018-	Member, American Heart Association Council on Cardiovascular and Stroke Nursing Leadership Committee
2017-2018	Member, Nursing Research Committee, Oregon Center for Nursing
2016-	Member, American Association of Heart Failure Nurses Research Consortium
2016-	Member, American Heart Association Scientific Writing Workgroup “ <i>Self Care for Prevention & Management of Cardiovascular Disease and Stroke</i> ”
2015-	Member, American Heart Association Scientific Writing Workgroup “ <i>The Role of Government in Promoting Cardiovascular Health</i> ”
2013	Member, NINR Innovative Questions Initiative : Symptom Science: Promoting Personalized Health Strategies
2013-	Member, Biobehavioral Research Center External Advisory Committee , University of Pennsylvania School of Nursing
2008-2009	Member, American Heart Association Scientific Writing Workgroup “ <i>State of the Science: Promoting Self-Care in Persons with Heart Failure</i> ”

Major Advocacy Service:

State/National/International

2017-	Member, Heart Failure Society of America Nominating Committee
2016-	Speaker, American Heart Association Spotlight Series “ <i>The Management of Heart Failure: A Practical but Guideline-Directed Approach</i> ”
2015-	Speaker, American Heart Association Spotlight Series “ <i>Evidence-Based Approach to Heart Failure Readmission</i> ”
2015-	Member, American Heart Association Research Mentoring Committee

2014-2016	Member, National Advisory Council , American Academy of Nursing Institute for Nursing Leadership
2014-2016	Member, American Heart Association Council Operations Committee
2012-2014	Chair, American Heart Association CVSN Early Career Committee
2012-2014	Member, Heart Failure Society of America Scientific Programming Committee
2011-2012	Champion, Heart Failure Society of America/American Association of Heart Failure Nurses Writing Group “ <i>HFSA and AAHFN joint position statement: advocating for a full scope of nursing practice and leadership in heart failure</i> ”
2011-2017	Member, Heart Failure Society of America Interdisciplinary Advocacy Committee
2010-2012	Founder, American Heart Association CVSN Early Career Committee
2010-2014	Member, American Heart Association QCOR Young Clinicians and Investigators Committee
2003-2009	American Association of Critical Care Nurses, AACN/CCRN Ambassador

Grant Review Activities:

2017	Member, Quantum (U01) Grant Special Emphasis Panel, National Institute of Biomedical Imaging and Bioengineering
2013-2016	Standing Member, NIH Center for Scientific Review, Nursing and Related Clinical Sciences (NRCS) Study Section
2013	Member, NIH Center for Scientific Review, Nursing and Related Clinical Sciences (NRCS-V) Overflow Study Section
2011-	Member, American Heart Association Outcomes & Qualitative Research-Therapeutic Clinical Trials Grant Peer Review Committee

Consultation:

INDUSTRY/ACADEMIC CONSULTATIONS AS AN EFFECTIVENESS METHODOLOGIST:

2016	University of Kentucky College of Nursing, RICH Heart Program, (Instructor) Quantitative Bootcamp: In-depth instruction and hands-on practice with: <ul style="list-style-type: none">• Generalized linear modeling• Model covariate selection• Multilevel modeling• Latent class and growth mixture modeling
2016	Oregon Center for Nursing (Consulting Research Scientist) Oregon Survey of Nurse Employers and Workforce Projections <ul style="list-style-type: none">• Analyze data from nurse employers survey• Interpret and re-analyze HRSA workforce projection data• Complete all statistical analysis and generate detailed report on cumulative findings.• Disseminate salient finding to multiple stakeholders.
2015	Oregon Center for Nursing (Consulting Research Scientist) New Nursing Graduate Study <ul style="list-style-type: none">• Design online survey to collect data on job acquisition and satisfaction among newly-licensed nurses in Oregon.• Liaise with advisory committee and incorporate important recommendations.

- 2015-2016 Sandoz GmbH (Consulting Investigator with Matrix45)
Systematic review and meta-analysis of the effectiveness of the erythropoietin stimulating agent biosimilar Binocrit among patients with chemotherapy induced anemia.

 - Complete all statistical analysis and generate detailed report on cumulative findings.
 - Disseminate salient finding to multiple stakeholders.
- 2015-2016 University of Arizona College of Pharmacy Center for Health Outcomes and PharmacoEconomics (Consulting Meta-Analyst)
Meta-analysis of the real-world effectiveness of same day vs. next day Neulasta on absolute neutrophil count and febrile neutropenia.

 - Integrate and synthesize all published and unpublished studies on Binocrit effectiveness.
 - Completed meta-analysis and meta-regression of all possible outcomes and time-points (primarily change in hemoglobin).
 - Completed detailed clinical study report and manuscript for publication.
- 2015-2016 University of Arizona College of Pharmacy Center for Health Outcomes and PharmacoEconomics (Consulting Meta-Analyst)
Systematic review and meta-analysis of the effectiveness of omalizumab in the real-world treatment of severe persistent asthma.

 - Integrate and synthesize all published and unpublished studies on same day vs. next day Neulasta.
 - Complete meta-analysis with subgroup comparisons between same day vs. next day treatment.
 - Complete detailed clinical study report and manuscript for publication.
- 2015 Oregon Center for Nursing (Consulting Analyst)
Oregon Health Authority-requested report on the mental health/psychiatry healthcare workforce.

 - Integrate and synthesize all published and unpublished studies on omalizumab effectiveness (including new studies published since Novartis-sponsored meta-analysis).
 - Complete meta-analysis and meta-regression of all possible outcomes and time-points.
 - Complete detailed clinical study report and manuscript for publication.
- 2013 University of Kentucky College of Nursing (Consulting Analyst)
Trajectories of affective symptoms among adults with heart failure.

 - Synthesized nursing (advanced practice and registered nurse) data reported to the Oregon State Board of Nursing.
 - Generated detailed report on the characteristics of nurses with a specialty in mental health/psychiatry including distribution by state, county and region, estimated FTE equivalents, and projected deficiencies due to age and/or plans for retirement.
- 2013 University of Kentucky College of Nursing (Consulting Analyst)
Trajectories of affective symptoms among adults with heart failure.

 - Performed growth, growth mixture, parallel process, and growth mixture modeling with multiple latent variables indicating various patterns of change in symptoms of anxiety and depression over time.

- Generated detailed report linking trajectories of depression and anxiety with differential patient-oriented (quality of life) and clinical outcome (major adverse cardiac events (MACE)).
- 2012-2013 Novartis Global (Principal Consulting Investigator)
Systematic review and meta-analysis of the effectiveness of omalizumab in the real-world treatment of severe persistent asthma.
- Integrated and synthesized all published and unpublished studies on omalizumab effectiveness.
 - Completed meta-analysis and meta-regression of all possible outcomes and time-points.
 - Completed detailed clinical study report and manuscript for publication.
- 2009-2012 Novartis Cardiovascular and Metabolism (Principal Consulting Investigator)
EUFORIA: Earlier Use Of Direct Renin Inhibition with Aliskiren: A prospective, observational, open-label, multi-center, pharmaco-epidemiologic study of practice patterns, lifestyle behaviors, and clinical outcomes in patients with arterial hypertension receiving Rasilez® (aliskiren) or Rasilez HCT® (aliskiren/hydrochlorothiazide).
- Developed protocol, data model and statistical analysis plan.
 - Completed all statistical analysis (multilevel modeling) and preliminary data reports.
 - Completed detailed clinical study report and manuscript for publication.
- 2007-2010 Novartis Cardiovascular and Metabolism (Principal Consulting Investigator)
DRIVER: A prospective, observational, open-label, multi-center, pharmaco-epidemiologic study of predictors, practice patterns and clinical outcomes in patients with arterial hypertension receiving Rasilez® (aliskiren).
- Developed protocol, data model and statistical analysis plan.
 - Completed all statistical analysis (multilevel modeling) and preliminary data reports.
 - Strategic positioning of global cardiovascular risk reduction as an intermediary outcome.
- 2007-2009 Novartis Respiratory (Principal Consulting Investigator)
PERSIST: A prospective, observational, open-label, multicenter, pharmacoepidemiologic, pharmacovigilance, and pharmaco-economic study of predictors, practice patterns, and effectiveness and safety outcomes in patients with severe persistent allergic asthma being treated with add-on Xolair® (omalizumab) therapy.
- Completed all statistical analysis involving clinical and patient-oriented outcomes.
 - Completed detailed clinical study report and manuscript for publication.
 - Liaised with internal health economist for computation of omalizumab cost-effectiveness.
- 2009-2012 Novartis Respiratory (Principal Consulting Investigator)
PRESTIGE: An epidemiological study of variation in serum total IgE levels in naturalistic post-hoc IgE cohorts of patients with severe asthma.
- Protocol, data model and statistical analysis plan development.

- Completed all statistical analysis.
 - Completed detailed clinical study report and products for dissemination.
- 2009-2012 Novartis Respiratory (Principal Consulting Investigator)
R-PIXEL: A follow-on, retrospective, multicenter, pharmaco-epidemiologic study of the prevalence and predictors of persistence in patients with prior uncontrolled persistent severe allergic asthma who were previously treated with add-on omalizumab (Xolair®) for 52 weeks when enrolled in the PERSIST study.
- Protocol, data model and statistical analysis plan development.
 - Completed all statistical analysis.
 - Completed detailed clinical study report and products for dissemination.
- 2009-2013 Novartis Respiratory (Principal Consulting Investigator)
P-PIXEL: A prospective, observational, multicenter, pharmaco-epidemiologic study of the prevalence and predictors of persistence and adherence in patients with uncontrolled persistent severe allergic asthma treated de novo with omalizumab.
- Protocol, data model and statistical analysis plan development.
 - Completed all statistical analysis.
 - Completed detailed clinical study report and products for dissemination.
- 2009-2011 Novartis Cardiovascular and Metabolism (Principal Consulting Investigator)
CONTRAST: RAAS combinations to control and comply: A survey of the use of RAAS-blocking therapies in hypertension.
- Protocol, data model and statistical analysis plan development.
 - Completed all statistical analysis.
 - Completed detailed clinical study report and products for dissemination.
- 2007-2009 Novartis Cardiovascular and Metabolism (Consulting Research Scientist)
B-SCORE - A prospective, observational, open-label, multi-center, pharmaco-epidemiologic study of predictors, practice patterns, global cardiovascular risk and clinical outcomes in patients with arterial hypertension receiving valsartan.
- Strategic consultation on global cardiovascular risk/residual risk computation.
 - Key input on manuscript for publication.
- 2007-2009 Novartis Cardiovascular and Metabolism (Consulting Research Scientist)
EXCELLENT - A prospective, observational, open-label, multi-center, pharmaco-epidemiologic study of predictors, practice patterns, and clinical outcomes in patients with arterial hypertension receiving a fixed dose combination of amlodipine and valsartan (Exforge®).
- Strategic consultation on global cardiovascular risk/residual risk computation.
 - Key input on manuscript for publication.
- 2009-2013 Sandoz GmbH (Consulting Investigator)
MONITOR-GCSF: An international, prospective, open-label, multicenter, pharmaco-epidemiological study to determine predictors of clinical outcomes in chemotherapy-treated cancer patients at risk for febrile neutropenia and treated prophylactically with filgrastim biosimilar.

- Monitoring of compliance with phase IV/V pharmacovigilance requests.
- Protocol, data model and statistical analysis plan development.
- Contributions to background and design manuscripts.

2009-2013 Sandoz GmbH (Consulting Investigator)
MONITOR-CKD5: A pharmacoepidemiological study of the multi-level determinants, predictors, and clinical outcomes of biosimilar epoetin alfa for renal anaemia in haemodialysis patients.

- Monitoring of compliance with phase IV/V pharmacovigilance requests.
- Protocol, data model and statistical analysis plan development.
- Contributions to background and design manuscripts.

2009-2011 Novartis Cardiovascular and Metabolism (Consulting Investigator)
EXAGON: Examining concordance between the guidelines on arterial hypertension and physicians' practice patterns focused on combination therapy and cardiovascular risk factors.

- Completion of all meta-analysis of complex survey data
- Key input on products for dissemination.

Editorial Activities:

2019-present Member, Editorial Board, Heart & Lung
2013-present Member, Editorial Board, Research in Gerontological Nursing
2010-present Member, Editorial Board, Journal of Cardiovascular Nursing

Ad Hoc Reviewer Journal of Cardiovascular Nursing, 9 years
Heart & Lung, 6 years
European Journal of Cardiovascular Nursing, 5 years
Nursing Research, 5 years
Journal of Cardiac Failure, 5 years
Research in Nursing & Health, 4 years
Circulation: Heart Failure, 4 years