

DATE: FEBRUARY, 2019

SHARON Y. IRVING, PhD, RN, CRNP, FCCM, FAAN

BUSINESS ADDRESS:

University of Pennsylvania
School of Nursing, Claire M. Fagin Hall
418 Curie Boulevard, Room 427
Philadelphia, PA 19104
(215) 746-2741
ysha@nursing.upenn.edu

EDUCATION

PhD	2011	University of Pennsylvania Philadelphia, Pennsylvania
MSN	1993	University of Pennsylvania Philadelphia, Pennsylvania
BSN	1980	Marquette University Milwaukee, Wisconsin

POSTGRADUATE TRAINING & FELLOWSHIP APPOINTMENTS

2014-2015	Post-Doctoral Clinical Traineeship, Nutrition Department of Gastroenterology, Hepatology and Nutrition The Children's Hospital of Philadelphia
2016 - 2018	Penn Pathways Leadership Program University of Pennsylvania

PROFESSIONAL EXPERIENCE

ACADEMIC POSITIONS

2012 – Present	Assistant Professor, Pediatric Nursing University of Pennsylvania School of Nursing Philadelphia, PA
2010 – 2012	Lecturer University of Pennsylvania School of Nursing Philadelphia, PA

2003 – 2004	Assistant Professor, Pediatric Clinical Faculty Baylor College of Medicine Houston, TX
1996 – 1999	Adjunct Faculty University of Pennsylvania School of Nursing Philadelphia, PA
1994 – 1995	Lecturer University of Pennsylvania School of Nursing Philadelphia, PA
1991 – 1994	Lecturer Georgetown University Neonatal Nurse Practitioner Program Washington, DC

CLINICAL & ADMINISTRATIVE POSITIONS

2004 – Present	Pediatric Nurse Practitioner, Critical Care Children's Hospital of Philadelphia Department of Nursing, Respiratory Care & Neurodiagnostic Services Philadelphia, PA
2009 – 2010	Co-Project Manager & Pediatric Nurse Practitioner University of Pennsylvania School of Nursing & The Children's Hospital of Philadelphia Study to Explore Early Development (SEED) Philadelphia, PA
2004 – 2009	Project Manager & Pediatric Nurse Practitioner University of Pennsylvania School of Nursing Feeding Behaviors and Energy Balance in Infants with Congenital Heart Disease Philadelphia, PA
2003 – 2004	Director, Clinical Pediatric Critical Care Nurse Practitioner Program Baylor College of Medicine/Texas Children's Hospital Houston, TX
2001 – 2003	<i>Breathmobile</i> ® Program Coordinator & Pediatric Nurse Practitioner University of Maryland Hospital for Children Baltimore, MD

1997 – 2001	Pediatric Nurse Practitioner University of Maryland Hospital for Children Critical Care Medicine / Nursing Baltimore, MD
1993 – 1997	Pediatric Nurse Practitioner Sinai Hospital of Baltimore Critical Care Medicine / Nursing Baltimore, MD
1993 – 1993	Staff Nurse, Pediatric Intensive Care Unit Georgetown University Hospital Washington, DC
1989 – 1993	Assistant Nurse Coordinator, Pediatric Intensive Care Unit Georgetown University Hospital Washington, DC
1988 – 1989	Staff Nurse II, Pediatric Intensive Care Stanford University Hospital Stanford, CA
1988 – 1988	Nursing Services Administrator Intravenous Home Care, Inc. The Woodlands, TX
1986 – 1988	Program Manager, Pediatrics CURAFLEX Health Services, Inc. Houston, TX
1986 – 1987	Patient Care Coordinator, Pediatrics CURAFLEX Health Services, Inc. Houston, TX
1985 – 1986	Unit Educator, Pediatric Intensive Care Texas Children's Hospital Houston, TX
1984 – 1985	Staff Nurse, Pediatric Intensive Care Texas Children's Hospital Houston, TX

1982 – 1984	Staff Nurse, Neonatal Intensive Care Texas Children’s Hospital Houston, TX
1980 – 1982	Staff Nurse, Neonatal Intensive Care Columbia-Presbyterian Medical Center New York, NY

CERTIFICATION/LICENSURE

Specialty Certification

2012 - 2015	Pediatric Fundamentals of Critical Care Support Society of Critical Care Medicine
2010 - Present	Advanced Cardiac Life Support American Heart Association
2003 – 2005	Pediatric Critical Care Nurse Practitioner #461757 Texas (Inactive)
1998 - 2015	Pediatric Advanced Life Support, Instructor American Heart Association
1998 - Present	Pediatric Advanced Life Support, Provider American Heart Association
1995 - Present	Pediatric Nurse Practitioner #0240800 American Nurses Credentialing Center
1993 - Present	Certified Registered Nurse Practitioner #SP-002292-O Commonwealth of Pennsylvania
1992 - Present	Basic Life Support – Healthcare Provider American Heart Association

Licensure

1993 - Present	Registered Nurse #RN334222L Commonwealth of Pennsylvania
1993 – 2004	Registered Nurse #R119562 Maryland (Inactive)
1989 – 1993	Registered Nurse #760055564 District of Columbia (Inactive)

1989 – 1990	Registered Nurse #I-426910 California (Inactive)
1982 – 1989	Registered Nurse #4-61757 Texas (Inactive)
1980 – 1983	Registered Nurse #335182 New York (Inactive)

HONORS/AWARDS/MEMBERSHIPS IN HONORARY SOCIETIES

2019	Distinguished Nutrition Support Nurse Service American Society for Parenteral and Enteral Nutrition
2016	Fellow of the American Academy of Nursing American Nurses Association
2014	Fellow of the American College of Critical Care Medicine Society of Critical Care Medicine
2014	Top 25 Pediatric Nursing Professors http://www.nursepractitionerschools.com/blog/top-pediatric-nursing-professors
2013	Dean's Award for Exemplary Professional Practice University of Pennsylvania, School of Nursing
2013	Distinguished Alumna in Service to Nursing Marquette University, College of Nursing
2011	University of Pennsylvania, Candidate School of Nursing NIH Director's Early Investigator Award University of Pennsylvania
2010	John S. Shropshire Graduate Scholarship Pennsylvania Black Conference on Higher Education
2005	Nursing Research Award 8 th Annual Update on Pediatric Cardiovascular Disease The Children's Hospital of Philadelphia

RESEARCH

Doctoral Dissertation

Patterns of weight change in postsurgical infants with congenital heart disease over the first year of life: Potential predictors of growth failure.

Chair: Barbara Medoff-Cooper, RN, PhD, FAAN, DAI# 7003449420.

Program/Practice Grants

Abbreviated survey to identify moderate/severe asthma in an inner city school population.

2002 – 2003. Role: Co-Investigator, internal support. Carol Blaisdell, MD, Principal Investigator, Sponsor: University of Maryland Hospital for Children; University of Maryland Medical System. Total Direct Cost: \$2,500.

Characterization of Baltimore city school children with asthma evaluated on the Breathmobile®.

2002 – 2002. Role: Co-investigator, internal support. Carol Blaisdell, MD, Principle Investigator Sponsor: *Breathmobile®* Program Grant, University of Maryland Hospital for Children; University of Maryland Medical System. Total Direct Cost: \$10,000.

Research Activity

C*ontinuous versus B*O*lous nasogastric feeding in mechanically ventilated pediatric patients 2 (COBO 2).* 2016 – 2018. Role: Site Principal Investigator. Study Principal Investigator: Ann-Marie Brown, PhD, CRNP, Akron Children's Hospital. Sponsor: American Nurses Foundation, \$15,000 and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Evaluation of Practice Change to Improve Patient Safety for Use of Temporary Enteral Access Devices (tEAD) in Pediatric Patients at The Children's Hospital of Philadelphia (CHOP)

2015 – 2017. Role: Team Lead. Internal support. \$2,650. Sponsor: Center for Nursing Research and Evidence-Based Practice, Children's Hospital of Philadelphia. March 2016 – 2018.

Tube Feeding Improvement Project for Trauma Patients. 2017 – Present. Role: Co - Team Lead. Internal Support, Office of Safety Medical Operations, Department of Pediatric Surgery, Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Decreasing Length of Stay in the Intensive Care Unit among Children with Severe Acute Kidney Injury. 2016 - 2018. Role: Co-Team Lead. Internal Support, Office of Quality Improvement and Safety, and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Improving Delivery of Enteral Nutrition in the Pediatric ICU. Role: Co-Team Lead. Internal Support, Office of Quality Improvement and Safety, Children's Hospital of Philadelphia. June - December 2014.

Research Activity - Other

Pediatric International Nutrition Study-3 (PINS-3). 2017 – 2018. Role: Site Principal Investigator. Study Principal Investigator: Nilesh Mehta, MD, Boston Children's Hospital. Sponsor: Boston Children's Hospital and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Nutrition Practices and Outcomes for Children on Non-Invasive Ventilation (NPO-NIV). 2017 – 2018. Role: Site Co-Investigator. Study Principal Investigator: Katri Typpo, MD, University of Arizona. Sponsor: Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Supplemental Parenteral Nutrition in Pediatric Respiratory Failure: A randomized trial of early versus late parenteral nutrition during pediatric critical illness (SuPPeR). 2015 – 2018. Role: Co-Investigator. Study Principal Investigator: Katri Typpo, MD, University of Arizona. Sponsor: University of Arizona and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Prevalence of nasogastric feeding tube use in US pediatric hospitals. 2014 – 2015. Role: Site Principal Investigator. Study Principal Investigator: Beth Lyman, MSN, RN. Sponsor: American Society for Parenteral and Enteral Nutrition (ASPEN), Center for Nursing Research and Evidence-Based Practice, Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Feasibility and reliability of resting energy expenditure (REE) measurement by indirect calorimetry in children ventilated via tracheostomy. 2012 – 2015. Role: Co-Investigator. Study Principal Investigator: Virginia A. Stallings, MD. Sponsor: Division of Gastroenterology, Hepatology and Nutrition, Clinical and Translational Research Center, Division Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Evaluation of efficacy of use of TubeClear® to restore patency to occluded enteral access devices in pediatric patients. 2014 - Present. Role: Co-Investigator. Principal Investigator: Vijay Srinivasan, MD. Sponsor: Actuated Medical, Inc., and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

Pediatric Intensive Care Nutrition in Critical Illness (PICNIC II). 2010 –2011. Role: Site Co-Investigator. Study Principal Investigator: Nilesh Mehta, MD, Boston Children's Hospital. Sponsor: Boston Children's Hospital and Division of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia.

PUBLICATIONS

Journal Articles: Research, Peer reviewed, Data-based

- Irving, S.Y.**, Daly B., Verger, J., Typpo, K.V., Brown, AM., Hanlon, A., Weiss, SL., Fitzgerald, J.C., Nadkarni, V.M., Thomas, N.J., Srinivasan, V., Sepsis Prevalence, Outcomes, and Therapies (SPROUT) Study Investigators and Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) Network. The association of nutrition status expressed as body mass index z-score with outcomes in children with sepsis: A secondary analysis from the sepsis prevalence, outcomes and therapies (SPROUT) study. *Critical Care Medicine*, 46(11):e1029-e1039. doi: 10.1097/CCM.00000000000003351. Epub 2018 Aug 7.
- Srinivasan,V., Seiple, S., Nagle, M., Falk, S., Kubis, S., Lee, H., Sisko, M., Mascarenhas, M., **Irving, S.Y.** (2017). Improving the performance of anthropometry measurements in the pediatric intensive care unit. *Pediatric Quality and Safety*; e022; doi: 10.1097/pq9.0000000000000022. Epub 2017 May 10.
- Northington, L., Lyman, B., Guenter, P., **Irving, S.Y.**, Duesing, L. (2017). Current practices in home management of nasogastric tube placement in pediatric patients: A survey of parents and homecare providers. *Journal of Pediatric Nursing*, 33: 46-53. doi:10.1016/j.pedn.2017.01.005. Epub 2017 Feb 7.
- Karsch, E., **Irving, S.Y.**, Aylward, B.S., Mahle, W.T. (2017). The prevalence and effects of aspiration among neonates at time of discharge. *Cardiology in the Young*. [Epub ahead of print] 2017 Feb 6. doi: 10.1017/S104795111600278X.
- Medoff-Cooper, B., **Irving, S.Y.**, Hanlon, A.L., Golfenshtein, N., Radcliffe, J., Stallings, V.A., Marino, B.S., Ravishankar C. (2016). The Association between Feeding Mode, Growth and Developmental Outcomes in Infants with Complex Congenital Heart Disease at 6 and 12 Months of Age. *The Journal of Pediatrics*, 169:154-9.e1. doi: 10.1016/j.jpeds.2015.10.017. Epub 2015 Nov 11.
- Irving, S.Y.**, Seiple, S., Nagle, M., Falk, S., Mascarenhas, M., Srinivasan, V. (2015). Perceived barriers to anthropometry measurements in critically ill children. *American Journal of Critical Care*, 24(6): e99-e107. doi: 10.4037/ajcc2015807.
- Trabulsi, J.C., **Irving, S.Y.**, Papas, M.A., Hollowell, C., Ravishankar, C., Marino, B.S., Medoff-Cooper, B., Schall, J.I., Stallings, V.A. (2015). Total energy expenditure of infants with congenital heart disease who have undergone surgical intervention. *Pediatric Cardiology*, 36(8): 1670-1679. doi: 10.1007/s00246-015-1216-3. Epub 2015 Jun 21.
- Lyman, B., Kemper, C., Northington, L., Yaworski, J.A., Wilder, K., Moore, C., Duesing, L.A., **Irving, S.Y.** (2015). Use of Temporary Enteral Access Devices in Hospitalized Neonatal and Pediatric Patients in the US. *JPEN Journal of Parenteral and Enteral Nutrition*, 40(4): 574-80. doi: 10.1177/0148607114567712. Epub 7 Jan 2015.

Irving, S.Y., Medoff-Cooper, B., Stouffer, N.O., Schall, J.I., Ravishankar, C., Compher, C.W., & Stallings, V.A. (2013). Resting energy expenditure at 3-months of age in infants following neonatal surgery for congenital heart disease. *Congenital Heart Disease*, 8(4): 343-35. PMID: 23360096.

Meaney, P.A., Sutton, R.M., Tsimba, B., Steenhoff, A.P., Shilkofski, N., Boulet, J.J., Davis, A., Kestler, A.M., Church, K.K., Niles, D.E., **Irving, S.Y.**, Mazhani, L., & Nadkarni, V.M. (2012). Training hospital providers in basic CPR skills in Botswana: Acquisition, retention and impact of novel training techniques. *Resuscitation*, 83(12): 1484-90. PMID: 22561463.

Anderson, J.B., Marino, B.S., **Irving, S.Y.**, Garcia-Espana, J.F., Ravishankar, C., Stallings, V.A., & Medoff-Cooper, B. (2011). Poor post-operative growth in two-ventricle physiology. *Cardiology in the Young*, 21(4), 421-29. PMID: 21385513.

Medoff-Cooper, B., **Irving, S.Y.**, Marino, B.S., Garcia-Espana, J.F., Ravishankar, C., Bird, G.L., & Stallings, V.A. (2010). Weight change in infants with a functionally univentricular heart: From surgical intervention to hospital discharge. *Cardiology in the Young*, 21(2), 136-44. PMID: 21070691.

Torowicz, D., **Irving, S.Y.**, Hanlon, A.L., Sumpter, D.F., & Medoff-Cooper, B. (2010). Infant temperament and parental stress in 3-month-old infants after surgery for complex congenital heart disease. *Journal of Developmental and Behavioral Pediatrics*, 31(3), 202-08. PMID: 20375737.

Journal Articles: Research, Peer Reviewed, Reviews

Matula, S.T., Polomano, R., **Irving, S.Y.** (2018). The state of the science in pediatric pain management practices in low-middle income countries (LMIC): An integrative review. *International Journal of Nursing Practice*. Epub 2018 Sep 26. Doi: 10.1111/ijn.12695.

Kachmar, A.G., **Irving, S.Y.**, Connolly, C.A., Curley, M.A.Q. (2018). A systematic review of risk factors associated with cognitive impairment after pediatric critical illness. *Pediatric Critical Care Medicine*, 19(3):e164-e171. doi: 10.1097/PCC.0000000000001430.

Brown, A.M., Carpenter, D., Keller, G., Morgan, S., **Irving, S.Y.** (2015). Enteral nutrition in the PICU: Current status and ongoing challenges. *Journal of Pediatric Intensive Care*, 4(2): 111-120. doi.org/10.1055/s-0035-1559806.

Irving, S.Y., Lyman, B., Northington, L., Bartlett, J., Kemper, C. and the NOVEL Project Workgroup. Nasogastric Tube Placement and Verification in Children: Review of the Current Literature. (2014). *Nutrition in Clinical Practice*, 29(3):267-76. PMID: 24737681.

Note: Dual publication.

Critical Care Nurse, 34(3):67-78. PMID: 24735587.

Orioles, A., **Irving, S.Y.**, & Srinivasan V. (2013). Critical appraisal of: Nutritional practices and their relationship to clinical outcomes in critically ill children – An international multicenter cohort study. *Critical Care Medicine*, 2012, 40(7), 2204-2211. In the PedsCCM Evidence-Based Journal Club.

Journal Articles: Clinical, Peer Reviewed

Irving, S.Y., Guenter, P., Mehta, N.M. (2019). Incorporating the 2017 Pediatric Nutrition Guidelines into Clinical Practice. *Nursing 2019 Critical Care*, 14(1): 13-19. doi: 10.1097/01.CCN.0000549629.44430.26.

Irving, S.Y., Rempel, G., Lyman, B., Sevilla, W.M., Northington, L., Guenter, P., The American Society for Parenteral and Enteral Nutrition. (2018). Pediatric Nasogastric Tube Placement and Verification: Best practice recommendations from the NOVEL project. *Nutrition in Clinical Practice*, 33(6):921-927. doi: 10.1002/ncp.10189. Epub 2018 Sep 6.

Mehta, N.M., Skillman, H.E., **Irving, S.Y.**, Coss-Bu, J., Vermilyea, S., Farrington, E.A., McKeever, L., Hall, A.M., Goday, P.S., Braunschweig, C. (2017). Guidelines for the provision and assessment of nutrition support therapy in the pediatric critically ill patient: Society of Critical Care Medicine and American Society for Parenteral and Enteral Nutrition. *Pediatric Critical Care Medicine*, 18(7): 675-715. doi: 10.1097/PCC.0000000000001134.

Note: Dual publication.

JPEN Journal of Parenteral and Enteral Nutrition. (2017). Jul; 41(5):706-742. doi: 10.1177/0148607117711387. Epub 2 Jun 2017.

Lyman, B., Guenter P, Northington L., Kemper C., **Irving, S.Y.**, Wilder, K., Duesing, L., Yaworski, J.A., Rempel, G., Sevilla, W.M., Visscher, D. (2015). Verifying NG tube placement in children. *Nursing 2015*, 45(10): 8-9. doi: 10.1097/01.NURSE.0000471417.42130.7c.

Medoff-Cooper, B., & **Irving, S.Y.** (2009). Innovative strategies for feeding and nutrition in infants with congenitally malformed hearts. *Cardiology in the Young*, 19(Suppl 2), 90-95. PMID: 19857355.

Irving, S.Y. & Curley, M.A.Q. (2008). Challenges to conducting multicenter clinical research: Ten points to consider. *AACN Advanced Critical Care*, 19(2): 164-69. PMID: 18560285.

Lieder, H.S., **Irving, S.Y.**, Maurico, R., & Graff, J.M. (2005). Munchausen syndrome by proxy: A case report. *AACN Clinical Issues*, 16(2), 178-84. PMID: 15876886.

Irving, S.Y., Simone, S.D., Hicks, F.W., & Verger, J.T. (2000). Nutrition for the critically ill child: Enteral and parenteral support. *AACN Clinical Issues*, 11(4), 541-58.

PMID: 11288418.

Derengowski, S.L., **Irving, S.Y.**, Koogle, P.V., & Englander, R.M. (2000). Defining the role of the pediatric critical care nurse practitioner in a tertiary care center. *Critical Care Medicine*, 28(7), 2626-30. PMID: 10921606.

Abstracts: Peer reviewed, Data-based

Srinivasan, V., Hasbani, N., Asaro, L., Mehta, N., **Irving, S.**, Kandil., S., Allen, C., Typpo, T., Cvijanovich, N., Faustino, E.V., Wypij, D., Agus., M., Nadkarni, V. (2018). Timing of nutrition initiation and clinical outcomes in critically ill children with hyperglycemia. 47th Society of Critical Care Medicine Congress. San Antonio, TX, (February 2018). *Critical Care Medicine*, 46(1): 180.

Kaplan, S., Flowers C., **Irving, S.**, Crawford, J., Lin, R., Schleelein, L., Johnson, A., Anupindi, S., White, A., Zhu, X. (2018). Reduced-dose Radiography Protocol for Focused Assessment of Feeding Tube Position. *Pediatric Radiology*, 48(Suppl 1), #088.

Ginsburg, S., Kapavarapu, P., **Irving, S.**, Marsillio, L., Mascarenhas, M., Srinivasan, V. (2015). Imbalances in energy delivery and outcomes in critically ill children with bloodstream infections. *Critical Care Medicine*, 43(12, Suppl), #274.

Irving, S. Y., Crawford, J. E., Goldberg, E., Mohan, A., Ford, N., Davis, D. H. (2015). Practice change for patients with nasogastric/orogastric enteral tubes: Safety improvement initiative. 26th International Nursing Research Congress, Honor Society of Nursing, Sigma Theta Tau International, San Juan, PR. Retrieved from: <http://www.nursinglibrary.org/vhl/handle/10755/601934>

Irving, S. Y., Mascarenhas, M. R., Srinivasan, V., Seiple, S., Perkel, M. M., Falk, S. E., & Nagle, M. L. (2013). Comparison of nurse versus ordering provider perceived barriers to anthropometry measurements in critically ill children. 42nd Biennial Convention of the Honor Society of Nursing, Sigma Theta Tau International, Indianapolis, IN. Retrieved from: <http://www.nursinglibrary.org/vhl/handle/10755/308637>

Groleau, V., **Irving, S.**, Napolitano, N., Bolton, J., Schall, J., Lin, R., Stallings, V., Srinivasan, V. (2013). Safety and feasibility of resting energy expenditure measurement in chronically ventilated children. *Critical Care Medicine*, 41(12, Suppl), #741.

Seiple, S., Nagle, M., Falk, S., **Irving, S.Y.**, Verger, J., Perkel, M., Mascarenhas, M., Srinivasan, V. (2012). Survey of perception of barriers to anthropometry measurements in pediatric intensive care. *Critical Care Medicine*, 40(12, Suppl), #323.

Thompson, A., **Irving, S.Y.**, Nishisaki, A., Hales, R., Nadkarni, V., & Berg, R. (2011). Airway management skills for pediatric critical care nurse practitioners: A simulation-based training program. (2011). *Critical Care Medicine*, 39(12 Suppl), 478.

Meaney, P.A., Tsimas, B., Sutton, R., Steenhoff, A., Kestler, A., **Irving, S.Y.**, Church, K., Niles, D., Mazhani, L., & Nadkarni, V.M. (2011). Novel training improves acquisition and retention of life support skills in resource limited settings. *Critical Care Medicine*, 39(12 Suppl), 478.

Abstracts: Oral Presentations, Peer reviewed, Data-based

Kaplan, S., **Irving, S.**, Flowers, C., White, A., Srinivasan, V., Zhu, X. Reduced radiation technique for radiographic evaluation of temporary feeding tube position. (2019). The European Society of Paediatric Radiology. 55th Annual Meeting. Helsinki, Finland (May 2019).

Brown, AM., Singleton, M., Madsen, E., Leonard, C., Srinivasan, V., Allen, C., Mikhailov, T., **Irving, S.**, Brown, M., Forbes, M. (2019). Continuous vs Bolus NG Feeding in Intubated Pediatric Patients (COBO2) – Results of A Multi-Center Clinical Trial. (2019). ASPEN Nutrition Science & Practice Conference, Phoenix, AZ, (March 2019).

Irving, S.Y., Flowers, C., Crawford, J.E., Lin, R., Srinivasan, V., Schleelein, L., White, A., Zhu, X., Kaplan, S.L. (2019). A reduced radiation dose protocol is feasible for assessment of enteral feeding tube location in children. ASPEN Nutrition Science & Practice Conference, Phoenix, AZ, (March 2019).

Srinivasan, V., Hasbani, N., Asaro, L., Mehta, N., **Irving, S.**, Kandil, S., Allen, C., Typpo, K., Cvijanovich, N., Faustino, E.V., Wypij, D., Agus, M., Nadkarni, V. (2018). Timing of nutrition initiation and clinical outcomes in critically ill children with hyperglycemia. ASPEN Nutrition Science & Practice Conference, Las Vegas, NV, (January 2018).

Kaplan, S., Flowers, C., **Irving, S.**, Crawford, J., Lin, R., Schleelein, L., Anupindi, S., Johnson, A., White, A., Zhu, X. (2018). Reduced-dose Radiography Protocol for focused assessment of feeding tube position. Society for Pediatric Radiology Annual Meeting, Nashville, TN, (May 2018).

Medoff-Cooper, B., **Irving, S.Y.**, Shall, J., Stallings, V.A., Ravishankar, C. (2017). Growth failure in infants with complex CHD over the first year of life. 4th International Conference on Nutrition & Growth. Amsterdam, Netherlands, (March 2017).

Abstracts: Posters, Peer reviewed, Data-based

Kubis, S., **Irving, S.**, Rooney, D., Li, R., Srinivasan, V. (2016). Use of a critical care nutrition pathway to improve early initiation of enteral nutrition in the pediatric intensive care unit. 8th World Congress on Pediatric Intensive and Critical Care, Toronto, Canada, (June 2016).

Irving, S.Y., Ravishankar, C., Chittams, J., Miller, M., Schall, J.I., Stallings, V.A., Medoff-Cooper, B. (2016). Use of mid-upper arm circumference and skinfold measurements to

evaluate muscle and fat stores in infants with congenital heart disease. 3rd International Conference on Nutrition and Growth. Vienna, Austria, March 2016.

Nagle, M., Seiple, S., Falk, S., Kubis, S., Srinivasan, V., Mascarenhas, M., Hewlett, J., Sisko, M., Li, R., Kraus, B., **Irving, S.Y.** (2015). PICU/PCU Nutrition Initiation and Advancement Pathway. American Society for Parenteral and Enteral Nutrition, Clinical Nutrition Week 16. Austin, TX, January 2016.

Anderson, H., Crawford, J.E., Goldberg, E., **Irving, S.** (2015). Preliminary evaluation of practice change related to use of temporary enteral access device (tEAD). 12th Annual Regional Pediatric Nursing Conference, Nursing of Children Network. Wilmington, DE, October 2015. Research Award.

Gibson, B., Sisko, M., Brodecki, D., **Irving, S.** (2015). Assessment of PICU/PCU Nutrition Pathway. 12th Annual Regional Pediatric Nursing Conference, Nursing of Children Network. Wilmington, DE, October 2015.

Seiple S., Nagle M., Falk S., **Irving S.Y.**, Verger J., Hewlett J., Conner B., Mascarenhas M., Srinivasan V. (2015). Process to improve anthropometry measurements following admission to the pediatric intensive care unit. American Society for Parenteral and Enteral Nutrition, Clinical Nutrition Week 15. Long Beach, CA, February, 2015. Abstract of Distinction.

Seiple, S., Nagle, M., Falk, S., **Irving, S.Y.**, Verger, J., Perkel, M., Mascarenhas, M., Srinivasan, V. (2014). Improving Anthropometric Measurements in the Pediatric Intensive Care Unit. Children's Hospital of Philadelphia 3rd Annual Quality and Patient Safety Day. May, 2014.

Crawford J., Goldberg B., Ford N., Mohan A., Davis D., **Irving S.Y.** (2014). "Practice Changes to Improve Safety for Patients with a Nasogastric/Orogastric Enteral Tube". Association of Pediatric Gastroenterology and Nutrition Nurses (APGNN) Annual Meeting. Atlanta, GA, Poster of Distinction. October, 2014.

Kumaran, S, **Irving S.Y.**, Connelly J., Srinivasan, V, Kilbaugh T, Blinman T. (2013). "ECMO Calorimetry". 29th Annual Children's National Medical Center Symposium: ECMO & the Advanced Therapies for Respiratory Failure, Keystone, CO. February, 2013.

Medoff-Cooper, B., **Irving, S.Y.**, Stallings, V., Hanlon, A.L., & Ravishanka, C. (2012). "Predictors of Developmental Outcomes in Infants with Complex Congenital Heart Disease." 1st International Conference on Nutrition and Growth, Paris, France. March, 2012.

Chapters in Books or Monographs

Goodwin, M., & **Irving, S.Y.** (2015). Cerebral Salt Wasting. In A. Kline-Tilford, C. Haut (Eds.), *Pediatric Acute Care Certification Review (200 – 201)*. Burlington, MA: Jones & Barlett Learning.

Irving, S.Y. & Mascarenhas, M.R. (2012). Nutritional deficiencies in pediatric critical illness. In J. Stockwell, C, Preissig (Eds.), *Comprehensive Critical Care: Pediatric* (949 – 960). Mount Prospect: The Society of Critical Care Medicine.

Guest Editorial, Book Reviews, Other publications

Irving, S.Y. (2012). Collaborative practice in the PICU: The Nurse Practitioner role complementing delivery of care. *Australian Critical Care*, 25(4), 210-211. PMID: 22999300.

Lyman, B., Guenter, P., Northington, L., Kemper, C., **Irving, S.**, Wilder, K., Duesing, L., Yaworski, JA., Rempel, G., Sevilla, WM., Visscher, D. (2015). Verifying NG tube placement in children. [Letter to the Editor]. *Nursing* 2015, 45(10): 8-9.

Alternative Media

Irving, S.Y., Srinivasan, V., Mascarenhas, M., Seiple, S., Nagle, M., Falk, S., Sisko, M. (Revised, 2017, April). *PICU/PCU Inpatient Pathway for Initiation and Advancement of Nutrition*. Webpage retrieved from: <http://www.chop.edu/clinical-pathway/nutrition-picu-pcu-initiation-and-advancement-clinical-pathway>.

Lisanti, A.J., Savoca, M., Chen, J., Costarino, D., Drabouski, K., Natarajan, S., Lessen, R., Burnham, N., Connock, M., Welc, MA., Rim, J., Proffitt, K., DiFusco, L., Seelhorst, A., Meldrum, H., Sorvello, A., Mathews, A., Ravishankar, C., Montenegro, L., **Irving, S.**, Mascarenhas, M.R., Medoff-Cooper, B., Perri, A., Gaynor, J.W. (2016, April). *Nutrition Pathway for Neonates after Surgery for Congenital Heart Disease*. <http://www.chop.edu/clinical-pathway/nutrition-in-neonates-after-surgery-for-congenital-heart-disease-clinical-pathway>.

Lyman, B., **Irving, S.Y.**, Wilder, K. (2015, March 25). *Temporary Enteral Access Placement Verification in Pediatric Patients: A Continuing Conundrum*. Webinar. Sponsor: American Society for Parenteral and Enteral Nutrition.

Irving, S.Y., Srinivasan, V., Mascarenhas, M., Seiple, S., Nagle, M., Falk, S., Hewlett, J., Sisko, M., Verger, J., Perkel, M., Connor, B. (2014, December). *PICU/PCU Inpatient Pathway for Initiation and Advancement of Nutrition*. Webpage retrieved from: <http://www.chop.edu/clinical-pathway/nutrition-picu-initiation-and-advancement-clinical-pathway-inpatient>.

Irving S.Y. (2013, December 23). Medscape (Producer). CHOP Expert Commentary. *The Nurse Practitioner in Acute and Specialty Care*. Podcast retrieved from: <http://www.medscape.com/viewarticle/817995>.

Irving S.Y., Kemper C. (2014, April 22). Nutrition in Clinical Practice (Producer). Dr Jeanette Hasse, Editor-In-Chief (Director). *Nasogastric Tube Placement and Verification in Children*. Podcast retrieved from: <http://ncp.sagepub.com/content/29/3/267/suppl/DC2>.

CONSULTATION: RESEARCH/EDUCATIONAL/CLINICAL

International

Irving, S.Y. – Consultant (2017 – Present). A feasibility study of no routine gastric residual volume (GRV) measurement in mechanically ventilated infants and children: The GASTRIC study. £343 123.82 NIHR HTA Principle Investigator: Lyvonne Tume, RN, MSc, PhD. Associate Professor, University of the West of England.

RECENT LECTURES/PRESENTATIONS BY INVITATION

International

How to Optimize Nutrition in the PICU. Panel presentation and discussion – Chair. 8th World Congress on Pediatric Intensive and Critical Care. Toronto, Canada. June 2016.

Using practice change to spark institutional culture change. International Invited Faculty. World Federation Critical Care Nurses 12th Congress. Brisbane, Australia. April, 2016.

What is emotional intelligence and how it effects ICU nurses. International Invited Faculty. World Federation Critical Care Nurses 12th Congress. Brisbane, Australia. April, 2016.

Educating the 21st century PICU nurse: Bridging the gap using electronic resources. International Invited Faculty, Keynote. World Federation Critical Care Nurses 12th Congress. Brisbane, Australia. April, 2016.

Association between feeding mode, growth and developmental outcomes in infants with complex congenital heart disease. 3rd International Conference on Nutrition and Growth. Vienna, Austria. March 2016.

Practice change for patients with nasogastric/orogastric enteral tubes: Safety improvement initiative. Honor Society of Nursing, Sigma Theta Tau. 26th International Nursing Research Congress. San Juan, PR. July 2015.

Collaborative practice in the PICU: The nurse practitioner role complementing delivery of care. International Invited Nurse Lecturer, Australian & New Zealand Intensive Care Society/Australian College of Critical Care Nurses (ANZICS/ACCCN) Intensive Care Annual Scientific Meeting. Brisbane, Australia. October, 2011

Diversity in the Pediatric Nurse Practitioner role. International Invited Nurse Lecturer, Australian & New Zealand Intensive Care Society/Australian College of Critical Care Nurses (ANZICS/ACCCN) Intensive Care Annual Scientific Meeting. Brisbane, Australia. October, 2011.

Patterns of weight change in infants with congenital heart disease following neonatal surgery: Potential predictors of growth failure. International Invited Nurse Lecturer. The Australian and New Zealand Intensive Care Society/Australian College of Critical Care Nurses (ANZICS/ACCCN) Intensive Care Annual Scientific Meeting. Brisbane, Australia, October, 2011.

National

Using pH to Confirm NG/OG Gastric Placement in the NICU. Breakfast Symposium. National Association of Neonatal Nurses. Providence, RI. October 2017.

Protein Requirement in Critically Ill Children. Clinical Nutrition Week 2017, American Society for Parenteral and Enteral Nutrition. Orlando, FL. February 2017.

Delivery of nutrition support to the critically ill child. Society of Critical Care Medicine, 46th Critical Care Congress. Honolulu, HI. January 2017.

Challenges to measuring energy expenditure in pediatric critical care. Society of Critical Care Medicine, 44th Critical Care Congress. Phoenix, AZ. January, 2015.

The journey to here. Youth Enrichment Institute, 42nd Annual National Black Nurses Association Meeting, University of Pennsylvania School of Nursing. Philadelphia, PA. August, 2014.

Comparison of nurse versus ordering provider perceived barriers to anthropometry measurements in critically ill children. Sigma Theta Tau International 42nd Biennial Convention. Indianapolis, IN. November, 2013.

Regional

Multi-disciplinary approach to management of pediatric feeding tube placement/verification and medication considerations. Philadelphia Area Society for Parenteral and Enteral Nutrition Fall Conference. Philadelphia, PA, November 2015.

Nutrition support for the critically ill child. 12th Annual Regional Pediatric Nursing Conference, Nursing of Children Network. Wilmington, DE, October 2015.

Research 'and' or 'in' clinical practice: The power of the question. Invited Keynote. Lehigh Valley Health Network Annual Nursing Research Day. Allentown, PA. October, 2014.

The road to here...~~The~~ My research journey. Lehigh Valley Health Network Annual Nursing Research Day. Allentown, PA. October, 2014.

Clinical practice and research – Do they mix? Lehigh Valley Health Network Annual Nursing Research Day. Allentown, PA. October, 2014.

The new opportunities for verification of enteral tube location (NOVEL) project. 11th Annual Regional Pediatric Nursing Conference, Nursing of Children Network. Wilmington, DE, October 2014.

Nutrition in critical illness. 14th Annual Pediatric Nursing Conference, Touching the Future of Children. Penn State Hershey Children's Hospital. Harrisburg, PA, November, 2013.

Local – University of Pennsylvania

Building a program of study: Intensive Care Unit – Pediatric Nutrition Team (ICU-PNuT).
The 5th Annual Penn Medicine Nursing Research Conference. Hospital of the University of Pennsylvania. December 2016.

Local – Children’s Hospital of Philadelphia

Nutrition in Pediatric Critical Illness. Leadership and Education for Advanced Practitioners: LEAP into Critical Care at Children’s Hospital of Philadelphia. 2-day program for recruitment of potential pediatric critical care nurse practitioner candidates. November 2018.

Discovery Day, My Science Story – Nurse Scientist. Outreach program from Children’s Hospital of Philadelphia to local high schools for science and research exposure to underrepresented groups. October 2018.

MEMBERSHIPS IN PROFESSIONAL & SCIENTIFIC SOCIETIES & OFFICES HELD

2016 - Present	American Nurses Association
2016 - Present	Pennsylvania Nurses Association
2012 - 2015	American Association of Nurse Practitioners
2011 - Present	American Society of Parenteral and Enteral Nutrition (A.S.P.E.N.)
2008 - Present	Sigma Theta Tau International Honor Society of Nursing
1994 - Present	Society of Critical Care Medicine (SCCM)
1990 - Present	American Association of Critical Care Nurses (AACN)

SELECTED PROFESSIONAL ACTIVITIES

National Committee Work (by section)

2018	Member: Current Concepts in Pediatric Critical Care Planning Committee, 2019 – 2022.
2016 – Present	Member: Workgroup Pediatric Organ Dysfunction Information Update Mandate (PODIUM); GI Dysfunction / Nutrition
2017 - Present	Member: A.S.P.E.N. Writing Committee: Nasogastric Tube Safety in Pediatric Patients (subgroup – NOVEL Project)
2015 – 2017	Member: A.S.P.E.N. Guideline Writing Committee: Guidelines for Nutritional Support of the Pediatric Critically Ill Patient
2013 – Present	Member: A.S.P.E.N. New Opportunities for Verification of Enteral Tube Location (NOVEL) Project Committee
1996 – Present	Member, SCCM Pediatric APN Committee

Editorial Activities

Manuscript Reviewer	<i>Biological Research for Nursing</i> <i>Open British Medical Journal</i>
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Nutrition in Clinical Practice
Journal for Specialists in Pediatric Nursing
Australian Journal of Critical Care
AACN Clinical Issues: Advanced Practice in Acute and Critical Care

2004 –2006 Editorial Board
AACN Clinical Issues: Advanced Practice in Acute and Critical Care

UNIVERSITY OF PENNSYLVANIA SERVICE ACTIVITIES

School of Nursing Committees

2018 – Present Undergraduate Course Directors
2017 – Present PhD Admissions
2016 – 2017 Search Committee, Ruth M. Colket Endowed Chair in Pediatric Nursing
2015 - Present Practice Committee
2012 - Present Faculty Awards Taskforce
2011- 2012 Pediatric Content across the New Nursing Curriculum

Doctoral Students

2016 – Present Chair, Dissertation Committee: Samuel Matula
2016 Chair, Qualifying Exam: Samuel Matula
2018 Member, Qualifying Exam: Jesse Wool

University Committees

2018 – Present University Steering Committee Council
2017 – Present Senate Executive Committee
2013 – 2018 University Faculty Senate Committee on Students and Educational Policy
2013 Penn Equity & Access
 Summer Mentorship Plus (SMPLUS) Program

CLINICAL AGENCY ACTIVITIES

Children’s Hospital of Philadelphia

2013 – 2014 Member, Nursing Policy Standard & Practice
 Nasogastric/Orogastric Feeding Tube Placement Committee
2012 – Present Member, Clinical Nutrition Committee
2011 – 2013 Member, PICU Intranet Website Task Force
2009 – Present Founder, Co-Chair, ICU-Pediatric Nutrition Team (PNuT)
2008 – 2011 Member, APN, Professional Practice Model - Research Council
2006 – 2016 Member, Critical Care Research Committee

Texas Children’s Hospital

2003 – 2004 Member, Advanced Practice Nursing Committee

University of Maryland Medical System

2001 – 2002 Member, *Breathmobile*® Steering Committee
1999 – 2003 Member, Hospital-wide Advanced Practice Nursing

OTHER SERVICE ACTIVITIES

2015 - Present Member, West Oak Lane Charter School
Executive Advisory Board

2012 – Present Member, Beacon of Hope, Primary School
United States Advisory Board
Sekenani, Kenya
<http://www.beaconofhopeworld.org/>
Director: Jennifer Myles, RN, MS

2012 – 2017 Mentor, Macy's Undergraduate Leadership Fellows Program
Drexel University, College of Health Sciences
Director: Roberta Waite, EdD, APRN