

K. Louis Luangkesorn

Lead Data Scientist
Highmark Health
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SUMMARY OF QUALIFICATIONS

- PhD in Industrial Engineering from Northwestern University.
- Worked on a range of use cases with Generative AI (Google Gemini) with the intent of evaluating Generative AI capabilities and limitations across a range of domains. Worked with writers, business transformation, finance, and provider relations clients in developing applications utilizing Generative AI.
- Developed doctrine, predictive models, and planning tools as an advance operational planner/National Planner for American Red Cross disaster response.
- Worked in deployed settings in joint operations on behalf of the Joint IED Defeat Organization (JIEDDO, US DOD) and disaster response deployments for the American Red Cross.
- Oversaw 10-15 Industrial Engineering and Health Systems Engineering industry sponsored capstone projects per semester. Worked with companies to design projects, guided students in problem formulation and solutions, obtained industrial feedback.
- Active in development of professional practice for analytics through professional society committees and service.

WORK EXPERIENCE

Highmark Health

Senior Data Scientist June 2020-September 2022

Lead Data Scientist September 2022-Present

Machine learning, generative AI, mathematical models used for projects supporting healthcare clients. Projects informed efforts for retention, provider relations, and healthcare operations. Clients include Human Resources, General Counsel, provider relations, and AHN (healthcare providers). Represented Highmark Health through professional society activities.

University of Pittsburgh – Department of Industrial Engineering

Visiting Assistant Professor – June 2020 – June 2023

Assistant Professor of Industrial Engineering, September 2016 – May 2020

Assistant Professor Clinical and Translational Science, September 2017 – May 2020

Research Assistant Professor – September 2010 – August 2016 - Full-time

Visiting Assistant Professor – January 2009 – September 2010 - Part-time

Projects

- Baltimore Fire Department. Expansion of EMS Mobile Intensive Health – Minor Definitive Care Now (MIH-MDCN) program. Predict additional demand that could result from expanding the MIH-MDCN program with additional crews, additional shifts,

or expansion of the program catchment area. With Jessica Starck (g) and Alex Fergelec (g)

- Pitt Athletics Strength & Conditioning. Develop database and analytical tools to work with SPARTA force plate and strength and conditioning to identify risk of injuries.
- Houston Methodist Hospital Volunteer Services. Volunteer onboarding and retention. Identify metrics for volunteer onboarding and retention across departments. Developed procedure for interpreting metrics and developed a Jupyter Notebook based dashboard for use by the Department of Volunteer Services. With Dr. Rachel Chung.
- Children's Hospital of Pittsburgh – Emergency Department flow, Ambulatory Care Access. Simulation analysis for ED management. Analytics for managing ambulatory care resource requirements. With Dr. Jay Rajgopal and Dr. Bryan Norman.
- UPMC Clinical and Translational Science Institute (CTSI) – Improving processes for supporting investigators obtaining institutional approval. Improved matching of a research subject pool with research projects.
- Predictive modeling to predict mass care resource requirements in natural disasters. Apply machine learning methods to data on historical flood impacts and demographic indicators to predict the requirements for mass care food and sheltering for a disaster response. In partnership with staff at the American Red Cross. With Sanjeev Goyal PhD (post-doc).
- Developing multi-variate statistical process control (SPC) methods to modern Computer Network Control (CNC) manufacturing. Develop ways of applying multivariate SPC methods using dimension measurement data collected automatically by next-generation CNC machines. Work is in partnership with L&S Machining of Latrobe, PA. With Xiaoshi Guo (g).
- Consulting – Bayesian methods to predict win probability in competitive contests – Explored the application of Bayesian methods to supplement machine learning models in calculating probability of winning in multiplayer competitive contests.
- Jewish Healthcare Foundation (JHF) Human Papillomavirus (HPV) Vaccine initiative Pittsburgh MSA analysis – Data analysis and predictive modeling of HPV vaccination resistance in western Pennsylvania based on U.S. Census data and the National Immunization Survey (NIS-Teen) with Brittany Green(g) and Joshua Haupt (u)
- University of Pittsburgh Library System – Two projects on analysis of library resource usage and contributions to research and academic outcomes based on computer generated records of library resource use and electronic text records. Analysis of library periodical holdings compared to periodical use by University Researchers. Evaluation of relationship between library electronic resource usage and undergraduate academic outcomes. With Dr. Berenika Webster, Shi Tang (g), Ziyi Yang (g), Fan Zhang (g), and Yunjie Zhang (g).
- Children's Community Pediatrics – Effect of HPV vaccination promotion campaigns. Evaluate the impact of HPV promotion efforts in a multi-location pediatrics practice based on EPIC data on pediatrics visits and vaccinations.
- Intensive Care Unit modeling and Operating Room scheduling for the Department of Veterans Affairs Pittsburgh Health Service (VAPHS) Veterans Engineering Resource

Center (VERC) with Dr. Andrew Schaefer, Dr. Jayant Rajgopal, and Dr. Oleg Prokopyev.

- Development of Statistical Methods to More Effectively Inform Policy Analysis Using Agent Based Simulation Models of Infectious Disease at the MIDAS National Center of Excellence with Dr. Jagpreet Chhatwal. MIDAS Grant 5U54GM088491-03.
- UPMC Clinical and Translational Research Center scheduling with Dr. Bryan Norman. Examined scheduling and access issues to evaluate client and staff scheduling to improve center throughput.

Student Projects Supervised

- Over 100 industry sponsored BS Industrial Engineering and MHA Health Systems Engineering capstone projects.
- Predicting Disease Incidence using Predictive Modeling with Michael Urzillo (u), Devon Devers (u), and Cheng Ren (g) – 2nd place at 2019 IISE Northeast Conference Paper Competition, Pittsburgh, PA
- Early prediction of emergency room surge events with Jack Rossi (u) (2017)
- Analysis of incoming calls and walkins at a large pediatrics practice with Diana Hoang and Lindsey Jones (u), with Children's Community Practice. (2015)
- The Chronicles of Gateway Health, by Kush Banerjee (g) (2015) (MHA project – reader)
- Predictive model of cash flow of a Software as a Service company during start-up phase by Jason Yablinsky (g) (2014) (MBA-MSIE project)
- Mentor to Akshay Oka (g) and Prathmesh Kocheta (g), 2nd Place Fall 2014 Simio Student Simulation Competition.
- Impact of availability of walk-in hours on rate of patient encounters at pediatrics practices with Xin Jin (g), Ran Bi (g), Saurabh Jha (g) (2014)
- Investigating the relationships between tutoring and mentoring activities and outcomes at Homewood Children's Village with Ran Bi (g) and Xin Jin (g), Yiyang Shi (HCV), Bryan Stephany (HCV), and Dr. Shannah Tharp Gilliam (HCV). (2014) (MS Project)
- Assessing the Variability of Embryonic Stem Cell Pluripotency and Differentiation via an Integrated Experimental and Computational Approach with Keith Task (g), Dr. Ipsita Banerjee, and Zhibo Zeng.(2014) (MS Project)
- Text mining of legal statutes for non-governmental organizations in Public Health and Emergency Response Statutes with Melany Hazeley. (2014) (MS Project)
- Strategies for non-profits to Increase Volunteer Retention Among Young Adults Age 18 - 25 in Western PA with MonaLisa Leong (u). (2014) (University of Pittsburgh Community Based Research Fellowship)

TEACHING EXPERIENCE

(u - Undergraduate, g – Graduate)

University of Pittsburgh

- IE 1086/2086 Decision Models (u/g) 2019, 2015, 2014, 2013, 2012
- IE 2088 Discrete-event Simulation Modeling and Analysis (g) 2019, 2018, 2017, 2014, 2013, 2011
- IE 2064 Data Science (g) 2020, 2019, 2018, 2017, 2016, 2015, 2014
- IE 0015 Information Systems Engineering (u) 2018, 2017, 2016, 2015
- IE 1090 Senior Projects (u) 2020, 2019, 2018, 2017, 2016, 2013
- IE 2100 Supply Chain Analysis (g) 2018, 2017, 2015
- ENGR 0020 Probability and Statistics (u) 2016, 2015
- IE 1079/2079 Facility Location (u/g) 2014, 2013, 2009
- IE 2073 Design of Experiments (g) 2010
- IE 1081 Operations Research (u) 2009
- IE 2996 Homeland Security Modeling (g) 2009
- IE 1014/2004 Database Design (u/g) 2009

Carnegie Mellon University

- Guest Lecturer, Executive Education at Tepper School of Business, *Business Analytics: Data-Informed Decision Making*, on *Where should analysts live: Organizing analytics in the Enterprise*, Dr. Willem-Jan Van Hoeve, November 21, 2025.

SOURCES OF SUPPORT

- Pitt Innovation Institute 2019
- Children's Hospital of Pittsburgh – 2017 - Present
- UPMC Clinical and Translational Studies Institute (CTSI) – 2017-Present
- L&S Machining - 2016
- Hillman Foundation – 2014 -2016 Business of Humanity
- II-VI Foundation – 2013 - 2014
- Department of Veteran's Affairs (VA) Pittsburgh Healthcare System (VAPHS) Engineering Resource Center (VERC) – 2009 - 2013.
- University of Pittsburgh Medical Center (UPMC) Clinical and Translational Research Center (CTRC) – 2012.
- Pennsylvania Department of Corrections - Correctional Industries (PCI) – 2012.

RAND Corporation

Associate Operations Researcher January 2004 – May 2008 - Full-time

Adjunct researcher June 2008 – December 2011 - Part-time

- Assessment of the Preparedness of Local and State Health Departments. Developed model of Public Health Laboratory capability for the APHL and CDC.
- Deployed Joint Improvised Explosive Device Defeat Organization (JIEDDO) Analyst to Afghanistan.

- Project Air Force Resource Management.

Integrated Systems Control

Logistics Analyst August 1995 - August 1997 Full-time

Provided Integrated Logistics Support for the Navy Information Systems Security (INFOSEC) Office, Space and Naval Warfare Systems Command (SPAWARSSYSCOM). Supported Technical and Operational Evaluation of INFOSEC systems, training for naval communications personnel, preparing lesson materials, and developing databases for training courses.

Institute for Water Resources - U.S. Army Corps of Engineers

Research Assistant May 1994 - July 1995 Part-time

Performed cost analysis of navigation projects. Duties included obtaining information, financial analysis, and database management. Additional tasks included statistical analysis; assistance in using linear programming for policy analysis; and establishment of an elementary Geographical Information System (GIS) (ArcView) for use in water supply and wetlands conservation studies.

EDUCATION

Northwestern University Evanston, IL - September 2004

PhD Industrial Engineering and Management Science

Dissertation: The Use of Hybrid Produce-to-Order/Produce-to-Stock Systems in Multi-Echelon Supply Chains

Advisors: Dr. Seyed Iravani, Dr. David Simchi-Levi

The George Washington University Washington, DC – May 1995

MA Science, Technology and Public Policy

University of Illinois at Urbana-Champaign Urbana, IL - May 1993

BS General Engineering (Management Science), BA Political Science

Google Generative AI Leaders Certification, 2025.

<https://www.credly.com/badges/7a917150-cc67-4d31-a9d4-e50c876e3e9d>

Professional Scrum Master, scrum.org, 2026

https://www.credly.com/badges/def00b95-3311-4413-8d24-c838bb3e4234/public_url

PUBLICATIONS

* PhD Student supervised

** Post-doctoral fellow supervised

*** Student (non-PhD) supervised

Book Chapter

- Luangkesorn, L, (2024) “Data Science and Analytics in Healthcare”, *Health Informatics: An Interprofessional Approach*, 3rd ed, ed. L. R. Hardy, Elsevier, ISBN: 978-0-323-71196-8.

Academic Journals

- In preparation: Luangkesorn, L., Svirko, A., Rajgopal, J., and Saladino, R. (in preparation), *Reducing wait time in a children's hospital emergency department through staffing and surge plans informed by simulation and predictive modeling*.
- Gaku, R., L. Luangkesorn, and S. Takakuwa, (2021), *Life Cycle Assessment for Long-Term Production Operation* in DAAAM International Scientific Book 2021, Chapter 11, pp. 131-138, doi: 10.2507/daaam.scibook.2021.11
- Worrell, C* K. L. Luangkesorn, J. Haight, T. Congedo, (2019), *Machine Learning of Fire Hazard Model Simulations for use in Probabilistic Safety Assessments at Nuclear Power Plants*, Reliability Engineering & System Safety, vol 183, pp. 128-142, doi:10.1016/j.ress.2018.11.014
- Luangkesorn, K. L., G. Klein***, and B. Bidanda, (2016), *Analysis of Production Systems with potential for severe disruptions*. International Journal of Production Economics, special issue for the 22nd International Conference on Production Research, vol. 171. pp. 478-486, doi:10.1016/j.ijpe.2015.09.014.
- Luangkesorn, K. L., Z. Eren-Doğu*, (2015), *Markov Chain Monte Carlo methods for estimating surgery duration*. Journal of Statistical Computation and Simulation, Vol 86(2), doi:10.1080/00949655.2015.1004065
- Luangkesorn, K. L., F. Ghiasabadi***, J. Chhatwal, (2013), *A Sequential Experimental Design Method to Evaluate a Combination of School Closure and Vaccination Policies to Control an H1N1-Like Pandemic*, Journal of Public Health Management and Practice, Vol. 19, S. 5, pp. S37-41, PMID: 23903393.
- Wang, Yu.*, L. Luangkesorn, and L. Shuman, (2012), "Modeling Emergency Medical Response to a Mass Casualty Incident using Agent Based Simulation", *Socio-Economic Planning Sciences*, Vol. 46, No. 4, pp. 281-290, doi:10.1016/j.seps.2012.07.002.
- Luangkesorn, K. L., B. A. Norman, Y. Zhuang***, M. Falbo, and J. Sysko, (2012), "Practice Summaries: Designing Disease Prevention and Screening Centers in Abu Dhabi." *Interfaces* Vol. 42, No. 4, pp. 406–409, doi:10.1287/inte.1110.0617.
- Iravani, S.M.R., T. Liu, K. L. Luangkesorn, and D. Simchi-Levi, (2007), "Produce-to-Stock Systems with Advance Demand Information and Secondary Customers", in *Naval Research Logistics*, Vol. 54, No. 3, pp. 331-345.
- Iravani, S.M.R., K. L. Luangkesorn, and D. Simchi-Levi, (2004), "A general decomposition algorithm for parallel queues with correlated arrivals." *Queueing Systems* Vol. 47, No. 4. pp. 313-344.
- Iravani, S.M.R., K. L. Luangkesorn, and D. Simchi-Levi (2003), "On assemble-to-order systems with flexible customers", *IIE Transactions* Vol. 35, No. 5. pp. 389-403.

Proceedings, reports, and other articles

- Luangkesorn, L., (2026), “Improving Response Through Advance Operational Planning and Academic Collaboration”, in *OR/MS Today*, March 10, 2026, doi: [10.1287/orms.2026.01.10](https://doi.org/10.1287/orms.2026.01.10).
- Gaku, R., L. Luangkesorn, H. Saito, and S. Takakuwa, (2022), "Data-Driven Economic Analysis of Poultry Data Used in Complex Long-Term Egg Production Systems Combining Simulation and Machine Learning," in *Proceedings of the 2022 Winter Simulation Conference*, Singapore, 2022, pp. 736-747, doi: 10.1109/WSC57314.2022.10015442.
- Luangkesorn, K. L., S. Nabors, T. Bountourelis**, T., G. Clermont, A. Schaefer, (2012), “The Case Against Utilization: Deceptive Performance Measures in In-patient Care Capacity Models”, *Proceedings of the 2012 Winter Simulation Conference*, eds. C. Laroque, J. Himmelspace, R. Pasupathy, O. Rose, and A. M. Uhrmacher.
- Bountourelis, T., D. Eckman ***, K. L. Luangkesorn, A. Schaefer, S. Nabors, G. Clermont, (2012), “Sensitivity Analysis of an ICU Simulation Model”, *Proceedings of the 2012 Winter Simulation Conference*, eds. C. Laroque, J. Himmelspace, R. Pasupathy, O. Rose, and A. M. Uhrmacher.
- Shylo, O.**, L. Luangkesorn, O. Prokopyev, and A. Schaefer, (2011), “Managing Patient Backlog in a Surgical Suite that Uses a Block-Booking Scheduling System”, *Proceedings of the 2011 Winter Simulation Conference*, eds. S. Jain, R. R. Creasey, J. Himmelspace, K. P. White, and M. Fu.
- Bountourelis, T.**, L. Luangkesorn, S. G. Nabors, G. Clermont, A. Schaefer, and L. Mailart, (2011) “Development and Validation of a Large Scale ICU Simulation Model with Blocking”, *Proceedings of the 2011 Winter Simulation Conference*, eds. S. Jain, R. R. Creasey, J. Himmelspace, K. P. White, and M. Fu.
- Wang, Y.*, L. Luangkesorn, and L. Shuman, (2011), “Best Subset Selection Procedure”, *Proceedings of the 2011 Winter Simulation Conference*, eds. S. Jain, R. R. Creasey, J. Himmelspace, K. P. White, and M. Fu.
- Zimmerman, B., L. Luangkesorn, B. Kuhlman, D. Nawn, C. Balaban, B. Bidanda, Y. Wang*, K. Sochats, and L. Shuman, (2010), “Dynamic Model Generation for Agent-based Emergency Response Simulation”, in *2010 ESRI International User Conference Proceedings*.
- Luangkesorn, K. L., (2009) “Using the Stochastic Simulation in Java Library from Jython” in *The Python Papers*, Vol. 4, No. 1.
- Olmstead, S. S., E. Eiseman, L. H. Hilborne, L. Luangkesorn, K. A. Ricci, P. R. Sama, and J. Wasserman, (2008) PM-3129-HHS *A Framework for Developing Measures, Standards and Benchmarks for the Laboratory Response Network (LRN)*, RAND Corporation.
- McGarvey, R., J. M. Masters, L. Luangkesorn, S. Sheehy, J. G. Drew, R. Kerchner, B. D. Van Roo, and C. R. Roll, Jr. (2008) MG-418-AF, *Supporting Air and Space Expeditionary Forces: Analysis of CONUS Centralized Intermediate Repair Facilities*, RAND Corporation.
- Lynch, K., J. G. Drew, S. Sleeper, W. Williams, J. Masters, L. Luangkesorn, R. Tripp, D. Lichter, and C. R. Roll, (2007) MG-539-AF *Supporting the Future Total Force: A*

Methodology for Evaluating Potential Air National Guard Mission Assignments, RAND Corporation.

- Amouzegar, M., R. McGarvey, R. Tripp, L. Luangkesorn, T. Lang, and C. Roll, (2006) *MG-421-AF Evaluation of Options for Overseas Combat Support Basing*, RAND Corporation.
- Luangkesorn, K. L., T. Costy, L. Truss, and J. Tew, (1999) *Simulation Analysis of Forecasting Policy and Service Levels on a Supply Chain*, GM Research Report, ESL-16.

Presentations, invited talks, and Panels

- Panelist:
 - INFORMS 2026 Annual Conference, *Panel: AI in the ORMS Workforce: Threat, Tool, or Career Accelerator?*, San Francisco, CA, November 2, 2026
 - INFORMS 2026 Annual Conference Doctoral Student Colloquium, *Industry Career Paths Panel*, San Francisco, CA, October 31, 2026
 - INFORMS-Pittsburgh, *Mentoring in Analytics*, Pittsburgh, PA, November 20, 2025.
 - INFORMS 2025 Annual Conference, *Panel on AI and Optimization for Smarter Healthcare Systems*, Atlanta, GA, October 28, 2025.
 - INFORMS 2024 Annual Conference, *Panel on Artificial Intelligence and Generative AI in Analytics Practice*, Seattle, WA, October 21, 2024.
 - INFORMS Analytics 2024, *Rising Analytics Career Panel*, Los Angeles, CA, April 14, 2024.
 - INFORMS 2023 Annual Conference, *Successfully entering the data profession*, October 17, 2023.
 - INFORMS 2019 Annual Conference, *Pro Bono Analytics – Providing Analytics Support to Nonprofit Organizations*. October 22, 2019.
- Luangkesorn, L., (2026), *Generative AI Workshop*, Masamu (Southern Africa Mathematical Science Association) June 25, 2026.
- Luangkesorn, L., (2026), *Where should the analysts live: Organizing analytics within the enterprise*, Guest Lecture in Healthcare Analytics, Dr. Saied Samiedaluie, Alberta School of Business, University of Alberta, May 25, 2026.
- Luangkesorn, L., (2026), *Development and deployment of advance operational planning for disaster response for the American Red Cross*, Guest lecture in Operations Research for Public Policy, Dr. Eric Stratman, Columbia University, IEOR department, March 9, 2026.
- Luangkesorn, L., (March), *Introduction to Generative AI as an analytics aide*, Highmark Health Big Data, Little Data series, February 23, 2026.
- Luangkesorn, (2026), *Using Generative AI in analytics: demonstration, pitfalls, and practices*, INFORMS Webinar, February 2026. Repeat at INFORMS Analytics+ 2026. <https://www.youtube.com/watch?v=EuYbWP-5IIM>
- Luangkesorn, L., (2025), *Does Generative AI know statistics?* PyCon USA, Pittsburgh, PA, May 21, 2025.

- Luangkesorn, L., (2025), *Generative AI: How it works, mistakes it makes, and how to teach it relevant information*, at Highmark Health Enterprise Analytics meeting, May 5, 2025.
- Luangkesorn, L., (2025), *Where should analysts live: Organizing analytics within the enterprise*, INFORMS-Pittsburgh, Pittsburgh, PA, February 24, 2025. INFORMS Analytics+ Indianapolis, IN,
- Luangkesorn, L., and A. Calderon-Vergara, (2024), *Generative AI – Promises and Limits*, INFORMS-Pittsburgh, Pittsburgh, PA November 13, 2024.
- Arnette, A., C.W. Zobel, M. Whitehead, L. Luangkesorn, (2024), *Analyzing Social Vulnerability as a Proxy for Damage in a Natural Disaster*, POMS 2024, Minneapolis, MN, April 25-29, 2024.
- Luangkesorn, L., (2024), *Information during a disaster: The development of advanced operational planning tools and models*. Guest lecture in 94-465 Data Analytics for Decision Making, Professor Barrios, Carnegie Mellon University, Heinz College of Information Systems and Public Policy, April 5, 2024
- Luangkesorn, L., (2023) *The development of Advanced Operational Planning for national disaster response at the American Red Cross*. Guest lecture in IE 1171 Data for the Public Good, Professor Rahimian, University of Pittsburgh, September 17, 2023.
- Arnette, A., Zobel, C., Whitehead, M., Luangkesorn, L, (2023), *Creating Resilient Logistic Networks for Natural Disaster Relief*, Production and Operations Management Society (POMS) Annual Conference, May 25, 2023.
- Luangkesorn, L. (2023), *Tech Talk: Solving the two population SIR model to project COVID-19 wave*, invited talk at ChristianaCare Institute for Research in Equity and Community Health (iREACH)/Delaware-CTR, January 5, 2023.
<https://www.youtube.com/watch?v=O12vTuCYVzo>
- Luangkesorn, L., (2022), *Solving the Two Population Sir Model to Provide Early Estimates of Peak and Duration of a Covid-19 Wave*, INFORMS 2022, Indianapolis, IN, October 17, 2022.
- Luangkesorn, L., (2022), *COVID-19 compartmental models with vaccinations and immune evasive variants using insurance data*, Highmark Health COVID-19 Journal Club, June 17, 2022.
- K.L. Luangkesorn and Chris Hackett, (2021), *Evaluating Specialist Staffing for Telestroke Consult Support for Regional Hospital Emergency Departments*, INFORMS 2021, Virtual/Anaheim, CA, October 25, 2021.
- Luangkesorn, K. L., Y. V. Tian***, Y. Wang***, T. Amirthalingam***, (2019), *Predicting Injuries Through the Use of Force Plate and Strength and Conditioning History*, INFORMS Annual Meeting, Seattle, WA, October 22, 2019.
- R. Gaku, S. Takakuwa, K. L. Luangkesorn, M. Gakuin (2019), *A Case Study Of Demand Forecasting With Data Mining Methods For New Short-life-cycle Products*, INFORMS Annual Meeting, Seattle, WA, October 21, 2019.

- Urzillo, Michael, L. Luangkesorn, C. Ren, D. Devors, (2018), *Predicting disease incidence using predictive models and socio-economic data*, IISE Annual Meeting, Orlando, FL, May 21, 2019.
- Chung, Rachel, K. L. Luangkesorn, A. Nguyen***, (2018), *Human Resources Analytics Dashboard for Healthcare Volunteer Retention*, Pre Association for Information Systems (AIS) International Conference on Information Systems (Pre-ICIS) Special Interest Group on Decision Support and Analytics (SIGDSA) Symposium, San Francisco, CA, December 12, 2018.
- Wen, Q.***, K. L. Luangkesorn, (2018) *Analyzing Alternative Doctor to Room Ratios in an Outpatient Care Clinic*, INFORMS Annual Meeting, Phoenix, AZ, November 6, 2018.
- He, T.***, K. L. Luangkesorn, P. Mohanty***, (2018), *Impact of Imputing Missing Values for Predicting Room Needs in an Outpatient Clinic*, INFORMS Annual Meeting, Phoenix, AZ, November 6, 2018.
- Luangkesorn, K. L. (2018), *Improving Emergency Department Physician Staffing Using Predictive Models and Simulation*, Tianjin University, College of Management and Economics, Department of Industrial Engineering, June 2018.
- Luangkesorn, K. L., Q. Wen***, A. Svirsko*, (2018), *Simulation of Outpatient Physician Room Use to Examine Overbooking Policies*, IISE Annual Meeting, Orlando, FL, May 21, 2018.
- Luangkesorn, K. L., J. Rossi***, A. Svirsko*, (2018), *Improving Emergency Department Physician Staffing Using Predictive Models and Simulation*, IISE Annual Meeting, Orlando, FL, May 20, 2018.
- Luangkesorn, K. L., P. Mohanty***, K. Dickinson***, Y. Huang***, A. Svirsko*, J. Rajgopal, (2018), *Predicting Room Needs for Room Allocation in a Multi-specialty Outpatient Care Clinic*, IISE Annual Meeting, Orlando, FL, May 20, 2018.
- Luangkesorn, K. L., A. Svirsko*, B. A. Norman, J. Rajgopal, J. Rossi***, (2017), *Establishing Staffing Levels and Surge Planning for the Emergency Department of the Children's Hospital of Pittsburgh Using Simulation*, INFORMS Annual Meeting, Houston, TX, October 22, 2017.
- Luangkesorn, K. L., S. Goyal**, and S. Grover (2017), *Early Forecasting of Flood Response Requirements for American Red Cross Mass Care Services*, INFORMS Annual Meeting, Houston, TX, October 24, 2017.
- Luangkesorn, K. L., and S. Goyal** (2017), *Rapid forecasting of mass care resource requirements after major floods in the United States.*, IISE 2017, Pittsburgh, PA, May 23, 2017.
- Guo, Xiaoshi*** and Luangkesorn, K. L. (2017), *Using multivariate statistical process control methods in computer numerical control (CNC) machining with embedded sensors*, IISE 2017, Pittsburgh, PA, May 22, 2017.
- Luangkesorn, K. L. (2017), *Compartmental models for infectious disease control*, Chulalongkorn University College of Public Health Sciences, Bangkok, Thailand, February 10, 2017.
- Luangkesorn, K. L. (2016), *Workshop on Bayesian MCMC methods and Stan*, Kasetsart University, Bangkok, Thailand, December 21, 2016.

- Luangkesorn, K. L. and T. Pil, (2016), *The impact of reminder calls in a pediatrics practice*, INFORMS 2016, Nashville, TN, November 16, 2016
- Zhang, F.***, Y. Zhang***, Kang, Z.***, S. Tang ***, K. L. Luangkesorn, B. Webster, (2015) *Impact of Library Online Resource use on Students Academic Outcome*, INFORMS 2015, Philadelphia, PA, November 3, 2015.
- Jha, S.***, K. L. Luangkesorn, B. Webster, F. Zhang***, Y. Zhang***, (2015) *Predicting the Effect of Introducing Walk in Hours on Staff Workload at a Pediatrics Practice*, INFORMS 2015, Philadelphia, PA, November 3, 2015.
- K. L. Luangkesorn, Z. F. Eren-Dogu*, (2015) *Using Markov Chain Monte Carlo for Input Models of Surgery Duration in a Multi-specialty Department*, INFORMS 2015, Philadelphia, PA, November 2, 2015.
- Green, B.***, K. L. Luangkesorn, J. Haupt***, (2015) *Predicting Areas of Low HPV Vaccination Coverage to Target Vaccination Promotion Efforts*, INFORMS 2015, Philadelphia, PA, November 2, 2015.
- Kang, Z.***, S. Tang ***, K. L. Luangkesorn, B. Webster, F. Zhang***, Y. Zhang***, (2015) *Identifying Shortfalls in Library Holdings Through Analysis of References in Faculty Publications*, INFORMS 2015, Philadelphia, PA, November 1, 2015.
- Luangkesorn, K. L., (2015), *Bayesian Methods in Python*, Pittsburgh Python User Group, May 27, 2015.
- Luangkesorn, K. L., L. Jones***, and D. Hoang***, (2015), *Evaluating the effect of adding walk-in hours on staff workload in pediatrics clinics*, Children's Community Pediatrics, Pittsburgh, PA, April 17, 2015.
- Luangkesorn, K. L., B. Bidanda, J. Gong***, (2014), *Design of a Production and Distribution System with Production Disruptions*, INFORMS 2014, San Francisco, CA, November 11, 2014.
- Luangkesorn, K. L., (2014), *Using natural language processing and machine learning to look for patterns in free text narratives*, Pittsburgh Python User Group, October 22, 2014.
- Hazeley, M. *** , K. L. Luangkesorn, (2014), *Data Analysis for Public Health System Emergency Preparedness & Response Law Database*, National Society of Black Engineers, March 29, 2014.
- Luangkesorn, K. L., M. Kilnic*, Y. Ulukus*, G. Clermont (2013), *Evaluating a Proposed Discharge Unit using a Simulation Based on Clinical Length of Stay*, INFORMS 2013, Minneapolis, MN, October 9, 2013.
- Luangkesorn, K. L., T. Bountourelis**, G. Clermont, S. Nabors, A. Schaefer(2013), *Design and Evaluation of an In-Patient Flow Modeling Framework for Hospital Bed Capacity Decisions*, INFORMS Health 2013, Chicago, IL, June 24, 2013.
- Luangkesorn, K. L., (2012), *Evaluating a Combination of School Closure and Vaccination Policies Using Best Subset Selection*, Dynamics of Preparedness Conference, October 2012, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA.
- Luangkesorn, K. L., T. Bountourelis**, G. Clermont, M. Kabiri*, S. Nabors, A. Schaefer (2012), *The Masking Effect of Averages for Healthcare Capacity Modeling*, 2012 INFORMS Annual Meeting, October 2012, Phoenix, AZ.

- Luangkesorn, K. L., T. Bountourelis**, S. Nabors, G. Clermont, A. Schaefer, (2012), *Development of a multi-level in-patient care simulation with blocking*, POMS 2012, Chicago, IL April 20, 2012.
- Luangkesorn, L. (2011) *Identifying Sites for Community Evacuation Center Teams and Equipment in Southwestern Pennsylvania*, INFORMS 2011, Charlotte, NC, November 15, 2011.
- Bountourelis, T.***, G. Clermont, L. Luangkesorn, S. Nabors, and A. Schaefer, (2011) *A Large Scale ICU Simulation Model with Blocking*, INFORMS 2011, Charlotte, NC, November 16, 2011.
- Luangkesorn, L. and Z. F. Eren Doğu* (2011) *Using Markov Chain Monte Carlo Methods to Characterize Surgery Procedure Duration*, INFORMS Healthcare 2011, Montreal, QC, June 22, 2011.
- Luangkesorn, L. and Z. F. Eren Doğu* (2010) *Using Bayesian methods to parameterize distributions for surgical procedure durations*, INFORMS 2010, Austin, TX, November 9, 2010.
- Wang, Y.* and L. Luangkesorn (2010), *Developing agent based simulations of emergency response from GIS data*, INFORMS 2010, Austin, TX November 8, 2010.
- Luangkesorn, L. (2010), *Exploring the effects of social distancing in epidemics using compartmental models*, presented at University of Pittsburgh – Johnstown, February 22, 2010.
- Luangkesorn, L. (2009), *Determining Resource Requirements and Staging Areas for Food Distribution in Disaster Response*, INFORMS Fall 2009, San Diego, CA, October 12, 2009.
- Luangkesorn, L. and S. Olmsted (2008), *Modeling Public Health Laboratory Surge Capacity*, presented to Association for Public Health Laboratories (APHL) Laboratory Response Network (LRN) Reference Lab Working Group, San Antonio, TX, April 12, 2008.

STUDENTS ADVISED

Ph D students advised

Yu Wang - Best-subset Selection for Complex Operation Systems using Agent-based Simulation – November 2011 – Co-advised with Larry Shuman – Current position: Principle Data Scientist, Walmart, Bentonville, AR.

Ph D Committee

Keith Task – Assessing the Variability of Embryonic Stem Cell Pluripotency and Differentiation via an Integrated Experimental and Computational Approach.

Department of Chemical Engineering. Advisor: Dr. Ipsita Banerjee. Completion - July 2014.

Post-doctoral fellows supervised

Sanjeev Goyal, PhD – October 2016 – October 2017. On India University Grants Commission post-doctoral fellowship. Assistant Professor in Mechanical Engineering at YMCA University of Science & Technology, Faridabad INDIA

Theologos Bountarelis – September 2009 – September 2011 - Co-supervised with Andrew Schaefer. Current position: Altsource LLC.

Oleg Shylo – September 2009 – September 2011 - Co-supervised with Andrew Schaefer, Oleg Prokopyev, and Jayant Rajgopal. Current position: Assistant Professor, University of Tennessee.

Other Students supervised

Qing Wen (BS) – April 2019 – MS program in data science at the University of California – Berkeley, Current position, ByteDance

Clarence Worrell (MS) – April 2018, Westinghouse Electricity. PhD Student at University of Pittsburgh, Current position, Software Engineering Institute

Chase Barilar (BS) – April 2018, Deloitte Consulting

Yuefan Huang (MS) – December 2017 – PhD Student at University of Texas School of Public Health

Kim Dickenson (BS) –December 2017, current position, Childrens Hospital of Philadelphia

Jack Rossi (BS) – April 2017. MS Program in Data Science at Cornell

Matt Abbot (BS) – April 2017. Deloitte Consulting

Xiaoshi Guo (MS) –April 2017 – PhD Student at Iowa State University

Anita Jain (BS) – December 2016 – MS student in engineering management, New York University

Sijia Hu (BS) –December 2016 –MS student in engineering management, Tufts University

Jason Yablinksy (MS/MBA) – April 2016, Current position: CEO at Subcentral.io

Shitang Tang (MS) – April 2016, Current position: LendingClub

Fan Zhang (MS) – April 2016, Current position: John Deere

Ziyi Kang (MS) – April 2016, Current position: VA Pittsburgh Healthcare System

Yunjie Zhang (MS) – December 2016, Current position: Deccan International

Saurabh Jha (MS) 2015, Current position: Facebook

Kush Bannerjee (MHA) April 2015 – Master's essay reviewer

Joshua Heicht (BS) – April 2016, Current position: FedEx Ground

Jue Gong (MS) – April 2015, Current position: PhD program at the University of Washington

Ran Bi (MS) – December 2014, Current position: Amazon.com

Xin Jin (MS) – December 2014, Current position: WitSpring

Zhibo Zeng (MS) – September 2013 – April 2014, Current position: Celtic Healthcare

Melaney Hazeley (MS) – April 2014, Current position: Accenture

Haoxian He (MS) – December 2014 – Current position: Telmate

MonaLisa Leong (BA) – (Community Based Research Fellowship) 2014 - Current

Position: MPH student at University of Pittsburgh Graduate School of Public Health

Zeynep Eren Doğu (PhD) - September 2009 – December 2010 – Current position: Assistant Professor Mugla Sitki Kocman University.

PROFESSIONAL AFFILIATIONS AND SERVICE

- INFORMS-Pittsburgh, Vice President 2025, President 2026.

- INFORMS Practice Strategy Committee 2025-2026. CAP Job Task Analysis Review Committee 2024, AI Integration Committee 2026.
- Reviewer for INFORMS Journal of Applied Analytics (2022) Journal of Healthcare Quality (2019), U.S. Department of Energy Office of Science (2019), Applied Mathematical Modeling (2018), U.S. Department of Energy – Office of Nuclear Energy Consolidated Innovative Nuclear Research FOA (2018), Annals of Operations Research (2018), The Python Papers (2015, 2018), Institute for Industrial Engineers Transactions on Health Systems Engineering (2017), European Journal of Operational Research (2017), INFORMS Journal of Computing (2011, 2017), IIE Annual Meeting (2017), Simulation Modeling Practice and Theory (2016), PLOS ONE (2015), International Journal of Computational Materials Science and Surface Engineering (IJCMSSE) (2015), Sustainability (2014), Journal of Healthcare Engineering (2014), Transportation Research E (2014), IEEE Transactions on Automation Science and Engineering (2014), International Journal of Production Engineering (2014), IIE Transactions (2009, 2013), Artificial Intelligence in Medicine (2012), Winter Simulation Conference (2012), Omega (2010 Best Reviewer Award), Multi-Echelon Conference, Manufacturing and Service Operations Management (MSOM) Society (2006), and International Journal of Simulation and Process Modeling (2004)
- Reviewer, Simio Student Simulation Competition (2019), CRC Press (2015, 2019), Manning Press (2015-Present), Alpha Foundation for the Improvement of Mine Safety and Health (2014).
- Institute for Industrial and Systems Engineering (IIE) Pritsker Dissertation Award Committee (best Health Systems Engineering Dissertation), 2023
- Session Chair INFORMS National Conference 2017, 2013, 2012, 2009, 2005. IIE 2018, 2017

COMMUNITY SERVICE

- American Red Cross Disaster Services Volunteer. 2002 – Present, Disaster Action Team member, Disaster Assessment committee member, Government Liaison, National Planner
 - National Planner – Developed predictive models for predicting demand for Red Cross services following disasters (Inland riverine flooding, hurricane). Developed tools and concept of operations for using tools including predictive models by national planners to develop demand estimates and estimated timelines to be provided to Red Cross national leadership and federal and state partners during early days of a disaster response. Served as National Planner during hurricane events. Served as disaster response operation (DRO) Advance Operational Planner working with DRO leadership in early days of disaster to make initial development of the local response organization, response strategies, and initial allocation of resources across the disaster region.
 - Faculty advisor for University of Pittsburgh Red Cross Club. Advising student organization. Advocate for students in identifying service and training opportunities with the Red Cross Chapter and partner organizations. Hands only CPR presenter.

- Government liaison – Act as a liaison to other responding agencies during a disaster response to coordinate Red Cross operations. Assignments have included Allegheny County Emergency Operations Center (EOC); Pennsylvania Commonwealth Response Coordination Center (CCRC); Texas District Disaster Committee (DDC) 1B – Tyler, TX; Louisiana State EOC – Baton Rouge, LA; Federal Joint Field Office (JFO) – Baton Rouge, LA.
- Disaster Assessment. Participated in updating of procedures and plans for initial disaster assessment and preliminary disaster assessment for the SWPA Red Cross. Participated in committee developing GIS capability for Red Cross region. Managed local disaster assessment for June 2009 Flooding in Allegheny County, PA.
- Disaster Action Team Leader - Respond to local disaster incidents as part of the Disaster Action Team. Performed initial disaster and needs assessment for disaster victims. Provided for immediate food, clothing, and shelter needs. Documented needs and benefits provided for use by Red Cross and partner case workers. Participated in assessments of Regional Red Cross disaster response.
- Planned and participated in government disaster exercises including TOPOFF 2 (Chicago, IL, 2003), Beaver Valley Nuclear Power Plant (Beaver County, PA, 2006, 2008, 2010, 2012, 2014, 2018, 2022), Exercise Toxic Tower (West Newton, PA, 2008), as well as local and regional Red Cross run exercises as planner, evaluator, and participant.
- Consortium for Mathematics and its Applications (COMAP) Interdisciplinary Contest in Modeling (ICM) Triage Judge, 2026.
- Intel International Science and Engineering Fair (ISEF) Judge - Mathematics, Pittsburgh, 2021 (virtual), 2020 (virtual), 2018.
- Pittsburgh Symphony Orchestra, Audience member weblog 2006-2015 seasons.

OPEN SOURCE PROJECTS

- Luangkesorn, L., (2015) “[R package for using the GNU Linear Programming Toolkit \(GLPK\) using MathProg or the API](http://cran.r-project.org/web/packages/glpkAPI/index.html)”, usage vignette for the R glpkAPI package at <http://cran.r-project.org/web/packages/glpkAPI/index.html>
- Contributed examples to JuMP, Julia for Mathematical Programming (2015)
- Luangkesorn, L., (2008) “Chapter 6.5, Simulation Analysis” in *The Gnumeric Manual*, v. 1.8, Custer A. et. al. <http://www.gnome.org/projects/gnumeric/doc/gnumeric.shtml>.
- Contributed to unit tests for the statistics package found in Scipy <http://www.scipy.org> (2002)
- Minor contributions to various projects at Github: <https://github.com/lluang>

HONORS AND AWARDS

- Technical.ly RealLIST 2025 Innovators Award-Pittsburgh.
- II-VI Foundation grant 2013-2014.
- University of Pittsburgh MIDAS Center of Excellence Pilot Grant MIDAS Grant 5U54GM088491-03, 2011-2012.

- Omega: The International Journal of Management Science Best Reviewer Certificate, 2010.
- Northwestern University Transportation Center PhD Dissertation Year Fellowship, 2003.
- Walter P. Murphy Fellowship, Department of Industrial Engineering and Management Sciences, Northwestern University, 1997-1998,
- Science, Technology and Public Policy Fellowship, Elliott School of International Affairs, George Washington University, 1993-1995.
- Gamma Epsilon, General Engineering Honors Society, Department of General Engineering, University of Illinois at Urbana-Champaign 1993.

SOFTWARE PROGRAMMING PROFICIENCY

- Proficient: Python (NumPy-SciPy), R
- Familiar: Julia, Matlab, Java, Clojure, C/C++, Fortran, Visual Basic for Applications, NetLogo, SQL, Apache Spark
- Tools: Git, Dataiku, Google Cloud, Simio (Simulation), Arena (Simulation), Eclipse, Linux, MS Office, SQLite