

## **Personal Information**

- **Lukasz Mazur**
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## **Education**

- Ph.D. 2008    Industrial Engineering, Montana State University  
Dissertation Title: The Study of Errors, Expectations, and Skills for Medication Delivery Improvement  
Research Area: Healthcare Engineering Management (advisors: Dr. Shi-Jie (Gary) Chen & Dr. Edward Mooney)
- M.S. 2005    Industrial & Management Engineering, Montana State University  
M.S. Thesis: Project Task-Member Assignment Using Design Structure Matrix (DSM) and Genetic Algorithm (GA) in Concurrent Engineering Project Management  
Research Area: Project Management (advisors: Dr. Shi-Jie (Gary) Chen & Dr. Edward Mooney)
- B.S. 2003    Industrial & Management Engineering, Montana State University

## **Professional Experience**

- 2018-present    Associate Professor  
Director of Healthcare Engineering Division  
(focus on Quality and Patient Safety)  
Department of Radiation Oncology  
School of Medicine  
University of North Carolina
- 2017-present    Adjunct Assistant Professor  
School of Information and Library Science (SILS)  
University of North Carolina
- 2016-present    Adjunct Assistant Professor  
Carolina Health Informatics Program (CHIP)  
University of North Carolina
- 2015-present    Adjunct Assistant Professor  
Department of Biomedical Engineering  
University of North Carolina & North Carolina State University

- 2014-present Assistant Professor  
 Director of Healthcare Engineering Division  
 (focus on Quality and Patient Safety)  
 Department of Radiation Oncology  
 School of Medicine  
 University of North Carolina
- 2013-present Adjunct Assistant Professor  
 Department of Health Policy and Management  
 School of Public Health  
 University of North Carolina
- 2011-2014 Research Assistant Professor  
 Department of Radiation Oncology  
 School of Medicine  
 University of North Carolina
- 2010-2011 Assistant Professor & Assistant Director of Applied Research  
 Industry Expansion Solutions \*  
 North Carolina State University
- 2009-2010 Senior Extension Improvement Engineer  
 Industry Expansion Solutions \*  
 North Carolina State University
- 2008-2009 Extension Improvement Specialist  
 Industry Expansion Solutions \*  
 North Carolina State University
- 2005-2008 Process Improvement Engineer  
 Bozeman Deaconess Hospital \*\*  
 Bozeman, Montana

\* Industry Expansion Solutions (formerly known as Industrial Extension Service) is the US ‘oldest’ (founded in 1955) and first of its kind engineering-based unit in the US focused on partnerships with business, industry, education and government to provide cutting-edge expertise, research, and technology. Industry Expansion Solutions is the designated state agency for the federal National Institute of Standards and Technology (NIST) and Manufacturing Extension Partnership (MEP). The Industrial Extension Service does not offer a tenure track.

\*\* Bozeman Deaconess Hospital is now part of Bozeman Health with services that extend throughout southwestern Montana. The health system is comprised of two hospitals, several specialty treatment centers, a network of physician and urgent care clinics, outpatient treatment facilities, retirement and assisted living facilities, all staffed by hundreds of doctors, nurses, medical assistants, technologists, specialists, experts of many varieties and dedicated professionals.

## **Honors and Awards**

### Invited Keynote Speaker:

- 2020 ASRHM Risk Management Annual Meeting, San Antonio, TX.
- 2020 IHI Patient Safety Congress, Virtual Conference.
- 2019 AHRQ National Web Conference on Patient Safety Culture.
- 2019 AMA Annual Physician Wellbeing Conference, Charlotte, NC.
- 2018 Engineering Lean Six-Sigma Conference, Atlanta, GA.
- 2018 AHRQ National Web Conference Reducing Provider Burden through Better-Health IT Design.

### Manuscript Awards:

- 2015 Best of ASTRO: Mazur LM, Mosaly P, Tracton G, Taylor K, Johnson K, Comitz E, Adams R, Chera B, Marks L. Quantitative assessment of the utility of safety barriers. American Society for Therapeutic Radiology and Oncology (ASTRO), 57th Annual Conference.
- 2012 Best Paper of the Year from the American Society of Engineering Management: Mazur LM, McCreery J, Rothenberg L. Facilitating lean learning and behaviors in hospitals during the early stages of lean implementation. *Engineering Management Journal*. 24(1):11-22, 2012.

### University of North Carolina at Chapel Hill:

- 2015 Junior Faculty Development Award, Office of the Executive Vice Chancellor and Provost, funds provided from IBM and R.J. Reynolds Industries, Inc. (\$7.5K)
- 2013 Innovation Pilot Award Recipient, School of Medicine Center for Innovation (\$50K).

### North Carolina State University:

- 2012 Induction into the Academy of Outstanding Faculty Engaged in Extension (Only winners of the college-level Outstanding Extension Service Award are eligible for membership into the Academy of Outstanding Faculty Engaged in Extension (AOFEE). Only two faculty may be nominated from Corporate Extension Service. Eight new members can be selected annually from the pool of 25 college- and unit-level extension outstanding service nominees, based on thematically driven categories, which reflect issues and concerns of critical interest to the citizens of the state).
- 2012 Outstanding Extension Service Award Recipient (Recognizes outstanding extension, engagement, and economic development activities. They are directly parallel in intent to the University's Outstanding Teaching Awards. They are not intended to recognize personal activities unrelated to the individual's work area or University sponsored programs).
- 2011 Alumni Outstanding Extension and Outreach Award

(Honors faculty who excel in extension and outreach. The funding support for these awards comes from the North Carolina license plate program, \$4K).

Montana State University:

- 2018 Induction into the Hall of Fame, Athletics – Tennis Team (Assistant Coach)  
2011 Induction into the Hall of Fame, Athletics – Tennis Team (Player)

## **Bibliography**

### **Books**

1. Marks LM and **Mazur LM**, with contributions from Chera B and Adams R. *Engineering Patient Safety in Radiation Oncology*, in CRC Press: Taylor and Francis Group. 2015.

### **Book Chapters**

1. **Mazur LM**, Marks LB, Das S, McGurk R, Adapa K, Amos A, Gu D, Shultz B, and Chera B. *Patient Safety*, In: Wolters Kluwer Health: 5th Edition of Khan's Treatment Planning in Radiation Oncology. Chapter 1, pp. 1-25, 2021.
2. **Mazur LM**, Keefe M, and Adams R. *Culture of Safety*, In: Washington and Leaver: Principles and Practice of Radiation Therapy. 4th edition. Chapter 18, pp. 350-365, 2014.
3. **Mazur LM**, McCreery J, Helmlinger TR, Kumar D, and Hofmann D. Engaging Hospital Employees in Continuous Quality Improvement Efforts: Development of Theoretical Model, In: Oczkowska R, and Mikula B. Knowledge, Economy, and Society: Challenges of the Contemporary World, Cracow University of Economics, Poland, Chapter 18, pp. 623-636, 2011.
4. Chera B, **Mazur LM**, Mosaly P, Marks LM. *Error Avoidance*, In: Perez & Brady's Principles and Practice of Radiation Oncology. 7th edition. 2018. Chapter 102, 44 pages.

### **Referred Articles (\* indicates my supervisory role of the leading author):**

1. \*Kratzke I, Woods L, Adapa K, Kapadia MR, **Mazur L**. The Sociotechnical Factors Associated with Burnout in General Surgery Residents: A Qualitative Systematic Review. Accepted to *Journal of Surgical Education*.
2. Mosaly PR, Adams R, Gregg T, Dooley J, Adapa K, Nuamah JK, Marks LB, **Mazur LM**. Impact of Workspace Design on Radiation Therapist Technicians' Physical Stressors, Mental Workload, Situational Awareness and Performance. *Practical Radiation Oncology*. 11(1):e3-e10. 2021. <https://doi.org/10.1016/j.prro.2020.07.002>

3. Cambell A, Mattoni M, Yefimov, MN, Adapa K, **Mazur LM**. Improving Cognitive Workload in Radiation Therapists: A Pilot EEG Neurofeedback Study. *Frontiers in Psychology*. 11:3246, 2020. [doi.org/10.3389/fpsyg.2020.571739](https://doi.org/10.3389/fpsyg.2020.571739)
4. **Mazur LM**, Adams R, Mosaly P, Stiegler M, Nuamah J, Adapa K, Chera B, Marks LB. Impact of Simulation-based Training on Radiation Therapy Therapists Workload, Situation Awareness, and Performance. *Advances in Radiation Oncology*. 5(6):1106-1114. 2020. <https://doi.org/10.1016/j.adro.2020.09.008>
5. \*Nuamah JK, Mosaly PR, Adams R, Adapa K, Chera BS, Marks LM, **Mazur LM**. Assessment of Radiation Therapy Technologist's Workload and Situation Awareness: Monitoring Two vs. Three Collocated Display Monitors. *Advances in Radiation Oncology*. 6(1): 100572. 2021. doi: [10.1016/j.adro.2020.09.012](https://doi.org/10.1016/j.adro.2020.09.012)
6. Nuamah JK, Adapa K, **Mazur LM**. Electronic health records (EHR) simulation-based training: a scoping review protocol. *BMJ Open*, 10:e036884. 2020. [doi:10.1136/bmjopen-2020-036884](https://doi.org/10.1136/bmjopen-2020-036884)
7. \*Mullins B, **Mazur LM**, Amos A, Schreiber E, Marks L, Chen R, Shen C, Lawrence M, Dance M, Chera B. Common Error Pathways in Cyberknife Radiation Therapy. *Frontiers in Oncology*. 10:1077. 2020. doi: [10.3389/fonc.2020.01077](https://doi.org/10.3389/fonc.2020.01077)
8. \*Judy G, Lindsay D, Mullins T, Mosaly P, Chera B, **Mazur LM**. Incorporating Human-Factors and Classification System (HFACS) into Analysis of Reported Near-misses and Incidents in Radiation Oncology. *Practical Radiation Oncology*. September 14, 2019 [published on-line ahead of print]. [doi.org/10.1016/j.prro.2019.09.005](https://doi.org/10.1016/j.prro.2019.09.005)
9. \*Mullins B, McGurk R, Ronald W, McLeod R, Amos An PhD3; Gu D, Chera S, Marks L, Das S, **Mazur LM**. Human Error Bowtie Analysis to Enhance Patient Safety in Radiation Oncology. *Practical Radiation Oncology*. 9(6):465-478, 2019. [doi.org/10.1016/j.prro.2019.06.022](https://doi.org/10.1016/j.prro.2019.06.022)
10. **Mazur LM**, Stokes S, McCreery J. Lean-Thinking: Implementation and Measurement in Healthcare Settings. *Engineering Management Journal*. 31(3):193-206, 2019. [doi:10.1080/10429247.2019.1605957](https://doi.org/10.1080/10429247.2019.1605957)
11. Pillai M, Adapa K, Das K, **Mazur L**, Dooley J, Marks L, Thompson R, Chera B. Utilizing AI to Improve Quality and Safety of Radiation Therapy. *Journal of the American College of Radiology*. 16(9):1267-1272, 2019.
12. Walburn T, Wang K, Sud S, Zakrzewski A, Roehm R, Sutton S, Tan X, Adams R, **Mazur LM**, Marks LB, Chera BS. A Prospective Analysis of Radiation Oncologist Compliance With Early Peer Review Recommendations. *Int J Radiat Oncol Biol Phys*. 104(3):494-500, 2019. [doi: 10.1016/j.ijrobp.2019.02.036](https://doi.org/10.1016/j.ijrobp.2019.02.036)

13. \*Howell C , Tracton G, Amos A, Chera C, Marks LB, **Mazur LM**. Predicting Radiation Therapy Process Reliability Using Voluntary Incident Learning System Data. *Practical Radiation Oncology*. 9:e210-e217, 2019. [doi.org/10.1016/j.prro.2018.11.012](https://doi.org/10.1016/j.prro.2018.11.012)
14. \*Mosaly R, Guo H, **Mazur LM**. Toward Better Understanding of Task Difficulty during Physicians' Interaction with Electronic Health Record System (EHRs). *International Journal of Human-Computer Interaction*. 35(20):1883-1891, 2019. [doi.org/10.1080/10447318.2019.1575081](https://doi.org/10.1080/10447318.2019.1575081)
15. **Mazur LM**, Mosaly PR, Moore C, Marks L. Association of the Usability of Electronic Health Records With Cognitive Workload and Performance Levels Among Physicians. *JAMA Netw Open*. 2(4):e191709, 2019. [doi:10.1001/jamanetworkopen.2019.1709](https://doi.org/10.1001/jamanetworkopen.2019.1709)
16. \*Tracton G, **Mazur LM**, Mosaly P, Marks L, Chera B, Adams R, Das S. Developing and Assessing Electronic Checklists for Safety Mindfulness, workload, and performance. *Practical Radiation Oncology*. 3(2):197-204, 2018. [doi.org/10.1016/j.prro.2018.05.001](https://doi.org/10.1016/j.prro.2018.05.001)
17. **Mazur LM**, Marks L, McLeod R, Karwowski W, Mosaly P, Tracton G, Adams R, Hoyle L, Das S, Chera B. Promoting Safety Mindfulness: Recommendations for the Design and Use of Simulation-based Training in Radiation Therapy. *Advances in Radiation Oncology*. 3(2):197-204, 2018 [doi.org/10.1016/j.adro.2018.01.002](https://doi.org/10.1016/j.adro.2018.01.002)
18. \*Mosaly P, **Mazur LM**, Fei Y, Guo H, Merck D, Moore C, Marks L, Mostafa J. Relating Task Demand, Mental Effort and Task Difficulty with Physicians' Performance during Interactions with Electronic Health Records (EHRs). *International Journal of Human-Computer Interaction*. 34(5):467-475, 2018. [doi.org/10.1080/10447318.2017.1365459](https://doi.org/10.1080/10447318.2017.1365459)
19. \*Judy G, Mosaly P, **Mazur LM**, Tracton G, Marks L, Chera B. Identifying Factors and Root Causes Associated with Near Miss or Safety Incidents in Patients Treated with Radiotherapy: A Case-control Analysis. *Journal of Oncology Practice*. 13(8):e683-693, 2017. [doi.org/10.1200/JOP.2017.021121](https://doi.org/10.1200/JOP.2017.021121)
20. **Mazur LM**, Mosaly P, Chera B, Tracton G, Stiegler M, Marks L. Improving Radiation Oncology Providers' Workload and Performance: Can Simulation-based Training Help? *Practical Radiation Oncology*. 7(5):e309-e316, 2017. [doi.org/10.1016/j.prro.2017.02.005](https://doi.org/10.1016/j.prro.2017.02.005)
21. \*Mosaly P, **Mazur LM**, Marks L. Quantification of Baseline Pupillary Response and Task-Evoked Pupillary Response During Constant and Incremental Task Load. *Ergonomics*. 60(10):1369-1375, 2017. [doi.org/10.1080/00140139.2017.1288930](https://doi.org/10.1080/00140139.2017.1288930)
22. **Mazur LM**, Johnson K, Pooya P, Chadwick J, McCreery J. Incorporating Lean Exploration Loops into Healthcare Facility Design: Programming Phase. *Health Environments Research & Design Journal*. 10(3):116-130, 2017. [doi.org/10.1177/1937586716680063](https://doi.org/10.1177/1937586716680063)

23. \*Johnson K, **Mazur LM**, Chadwick J, Pooya P, Amos A, McCreery J. Incorporating Lean Exploration Loops into Healthcare Facility Design: Schematic Phase. *Health Environments Research & Design Journal*. 10(3):131-141, 2017. [doi.org/10.1177/1937586716673830](https://doi.org/10.1177/1937586716673830)
24. **Mazur LM**, Campbell A, Planting D, Scott B, Lowen S, Mosaly P, Belger A, McCreery J, Chera B, Marks L. Positive Effects of Neurofeedback Intervention on Radiation Oncology Physicians' Workload during Go/No-Go Performance Test. *Travail Humain*. 80(1):113-132, 2017. [doi.org/10.3917/th.801.0113](https://doi.org/10.3917/th.801.0113)
25. **Mazur LM**, Mosaly P, Moore C, Comitz E, Yu F, Falchook A, Eblan M, Hoyle, L, Tracton G, Chera B, Marks LB. Towards a Better Understanding of Workload and Performance during Physician-Computer Interactions. *Journal of American Medical Informatics Association*. 23(6):1113-1120, 2016. [doi.org/10.1093/jamia/ocw016](https://doi.org/10.1093/jamia/ocw016)
26. **Mazur LM**, Chera B, Mosaly P, Taylor K, Tracton G, Johnson K, Comitz E, Adams R, Pooya P, Ivy J, Rockwell J, Marks M. The Association between Event Learning and Continuous Quality Improvement Programs and Culture of Patient Safety. *Practical Radiation Oncology*. 5(5):286-294, 2015. [doi.org/10.1016/j.prro.2015.04.010](https://doi.org/10.1016/j.prro.2015.04.010)
27. \*Mosaly P, **Mazur LM**, Burkhardt K, Miller S, Eblan M, Falchook A, Goldin G, Burkhardt K, LaChapelle D, Adams R, Chera B, Marks L. Application of Human Factors and Classification System (HFACS) Model to Event Analysis in Radiation Oncology. *Practical Radiation Oncology*. 5(2):113-119, 2014. [doi.org/10.1016/j.prro.2014.05.010](https://doi.org/10.1016/j.prro.2014.05.010)
28. \*Gebicki M, Mooney E, Chen S, **Mazur LM**. Evaluation of Hospital Medication Inventory Policies. *Health Care Management Science*. 17(3):215-229, 2014. [doi.org/10.1007/s10729-013-9251-1](https://doi.org/10.1007/s10729-013-9251-1)
29. **Mazur LM**, Mosaly P, Hoyle L, Jones E, Chera B, Marks LB. Relating Physician's Workload with Errors during Radiotherapy Planning. *Practical Radiation Oncology*. 4(2):71-75, 2013. [doi.org/10.1016/j.prro.2013.05.010](https://doi.org/10.1016/j.prro.2013.05.010)
30. \*Chera B, **Mazur LM**, Jackson M, Taylor K, Mosaly P, Rockwell J, Adams R, Chang S, Deschesne K, Marks LB. Quantification of the Impact of Multifaceted Initiatives Intended to Improve Operational Efficiency and the Safety Culture: A Case Study from an Academic Medical Center Radiation Oncology Department. *Practical Radiation Oncology*. 4(2):e101-e108, 2013. [doi.org/10.1016/j.prro.2013.05.007](https://doi.org/10.1016/j.prro.2013.05.007)
31. \*Mosaly PR, **Mazur LM**, Jones EL, Hoyle LM, Zagar T, Chera B, Marks LB. Quantifying the Impact of Cross Coverage on Physician's Workload and Performance in Radiation Oncology. *Practical Radiation Oncology*. 3(4):e179-186, 2013. [doi.org/10.1016/j.prro.2013.02.007](https://doi.org/10.1016/j.prro.2013.02.007)
32. **Mazur LM**, Mosaly P, Hoyle LM, Jones EL, Marks LB. Subjective and Objective Quantification of Physician's Workload and Performance During Radiation Therapy

Planning Tasks. *Practical Radiation Oncology*. 3(4):e171-177, 2013.  
[doi.org/10.1016/j.prro.2013.01.001](https://doi.org/10.1016/j.prro.2013.01.001)

33. Chen S, **Mazur LM**, Sasiadek M. Project Task Flow Optimization and Departmental Flow Analysis Using Design Structure Matrix and Genetic Algorithm. *International Journal of Logistics Systems and Management*. 15(1):68-92, 2013. [doi.org/10.1504/IJLSM.2013.053239](https://doi.org/10.1504/IJLSM.2013.053239)
34. \*Venkitasubramanian A, Yannayon J, Kim B, Donahue D, Koromia GA, Doshi N, Venkateswaran A, Arellano C, **Mazur LM**. Q-Tip: Empirical Evaluation of Hand Hygiene Compliance. *American Journal of Medical Quality (AMJQ)*. 28(1):81, 2013.  
[doi.org/10.1177/1062860612464733](https://doi.org/10.1177/1062860612464733); *Selected as first publication of the combined efforts between AJMQ and Institute for Healthcare Improvement (IHI) Open School to disseminate student projects (Role: Lead faculty advisor for students)*.
35. **Mazur LM**, McCreery J, Chen S. Quality Improvement in Hospitals: What Triggers Behavioral Change? *Journal of Healthcare Engineering*. 4(4):621-648, 2012.  
[doi.org/10.1260/2040-2295.3.4.621](https://doi.org/10.1260/2040-2295.3.4.621)
36. **Mazur LM**, Mosaly P, Jackson M, Chang S, Burkhardt K, Adams R, Jones E, Hoyle L, Xu J, Rockwell J, Marks L. Quantitative Assessment of Workload and Stressors in Clinical Radiation Oncology. *International Journal of Radiation Oncology Biology and Physics*. 1:83(5):e571-6, 2012. [doi.org/10.1016/j.ijrobp.2012.01.063](https://doi.org/10.1016/j.ijrobp.2012.01.063)
37. **Mazur LM**, McCreery J, Rothenberg L. Facilitating Lean Learning and Behaviors in Hospitals during the Early Stages of Lean Implementation. *Engineering Management Journal*. 24(1):11-22, 2012. [doi.org/10.1080/10429247.2012.11431925](https://doi.org/10.1080/10429247.2012.11431925)
38. **Mazur LM** and Chen S. A Task-Member Assignment Model for Complex Engineering Projects. *International Journal of Industrial and Systems Engineering*. 7(1):1-25, 2011.  
[doi.org/10.1504/IJISE.2011.037240](https://doi.org/10.1504/IJISE.2011.037240)
39. **Mazur LM** and Chen S. Evaluation of Industrial Engineering Students' Competencies for Process Improvement in Hospitals. *Journal of Industrial Engineering and Management*. 3(3):603-628, 2010. [doi.org/10.3926/jiem.2010.v3n3.p603-628](https://doi.org/10.3926/jiem.2010.v3n3.p603-628)
40. **Mazur LM**, Chen S. An Empirical Study for Medication Delivery Improvement Based on Healthcare Professionals Perceptions of Medication Delivery System. *Health Care Management Science*. 12(1):56-66, 2009. [doi.org/10.1007/s10729-008-9076-5](https://doi.org/10.1007/s10729-008-9076-5)
41. **Mazur LM**, Chen S. Understanding and Reducing the Medication Delivery Waste via Systems Mapping and Analysis. *Health Care Management Science*. 11(1):55-65, 2008.  
[doi.org/10.1007/s10729-007-9024-9](https://doi.org/10.1007/s10729-007-9024-9)
42. **Mazur LM**, Chen S, Prescott B. Pragmatic Evaluating of Toyota Production System (TPS) Analysis Procedure for Problem Solving with Entry-Level Nurses. *Journal of Industrial*



**In Press/Submitted/Under-construction Referred Articles**

\*Adapa K, SJain J, Kanwar R, Zaman T, Taneja T, Walker J, **Mazur LM**. Augmented Reality in Patient Education and Health Literacy: A Scoping Review Protocol. *BMJ Open*

\*Adapa K, SJain J, Kanwar R, Zaman T, Taneja T, Walker J, **Mazur LM**. Augmented Reality in Patient Education and Health Literacy: Results from Scoping Review Protocol. *BMJ Open*

\*Nuamah JK, Adapa K, **Mazur LM**. Electronic Health Records (EHR) Simulation-Based Training: Results from Scoping Review Protocol. Submitted to *Journal of Healthcare Informatics*.

Malvika Pilla, John Shumway, John Dooley, Karthik Adapa, Shiva Das, Lukasz Mazur Bhisham Chera: Utilizing machine learning approaches to improve the prioritization and effectiveness of pre-treatment physics chart checks –submitted manuscript to *Red Journal*.

\*Amy Cole, Karthik Adapa, Daniel Richardson, Amro, Lukasz Mazur: Co-design approaches involving older adults in the development of electronic healthcare tools: Systematic review.

**Mazur LM**, Karthik Adapa, Waldemar Karwowski. *Polish Journal*.

**Editorials, Commentaries, Special Communications, and White Papers (peer-reviewed):**

1. Marks L, **Mazur LM**, Hertz C, Chera B. Personalized Medicine vs. Quality: Contradictory or Mutually Dependent? *International Journal of Radiation Oncology Biology and Physics*. 2018. 2 pages. [doi.org/10.1016/j.ijrobp.2017.05.041](https://doi.org/10.1016/j.ijrobp.2017.05.041)
2. Hubert YP, **Mazur LM**, Martin NE, Mayo CS, Santanam L, Pawlicki T, Marks LB, Smith BD. Radiation Oncology Health Information Technology: Is it Working For or Against Us? *International Journal of Radiation Oncology Biology and Physics*. 98(2):259-262, 2017. [doi.org/10.1016/j.ijrobp.2017.02.018](https://doi.org/10.1016/j.ijrobp.2017.02.018)
3. Chera B, **Mazur LM**, Adams R, Kim HJ, Milowsky M, and Marks M. Creating a Culture of Safety within an Institution: “Walking the Walk”. *Journal of Oncology Practice*. 12(10):880-883, 2016. [doi:10.1200/JOP.2016.012864](https://doi.org/10.1200/JOP.2016.012864)
4. Chera B, **Mazur LM**, Adams R, Marks L. The Promise and Burden of Peer Review in Radiation Oncology. *Journal of Oncology Practice*. 12(3):196-198, 2016. [doi:10.1200/JOP.2015.008961](https://doi.org/10.1200/JOP.2015.008961)
5. Chera B, **Mazur LM**, Buchanan, I, Kim HJ, Rockwell J, Milowsky M, Marks L. Improving Patient Safety in Clinical Oncology: Lessons from High Reliability Industries. *The Journal of*

*American Medical Association (JAMA) Oncology*. 1(2):e1-e7, 2015.  
[doi:10.1001/jamaoncol.2015.0891](https://doi.org/10.1001/jamaoncol.2015.0891)

6. Chera B, **Mazur LM**, Marks M. Applying Normal Accident Theory to Radiation Oncology: Failures are Normal but Patient Harm can be Prevented. *Practical Radiation Oncology*. 5(5):325-327, 2015. [doi:10.1016/j.prro.2015.07.005](https://doi.org/10.1016/j.prro.2015.07.005)
7. Marks LB, Jackson M, Xie L, Chang S, Burkhardt KD, **Mazur LM**, Jones E, Saponaro P, LaChapelle D, Baynes DC, Adams RD. The Challenge of Maximizing Safety in Radiation Oncology. *Practical Radiation Oncology*. 1(1):1-14, 2011. [doi:10.1016/j.prro.2010.10.001](https://doi.org/10.1016/j.prro.2010.10.001)

#### **Editorials, Commentaries, Special Communications, and White Papers (editor-reviewed):**

1. Shultz B, Dangerfield C, Burgess B, Ivester I, Adapa K, **Mazur LM**. Using Gemba Walks to Support Implementation of Tiered Huddle System – University of North Carolina (UNC) Medical Center Journey Towards High Reliability. *Industrial Engineer Magazine*. accepted for publication. To appear in January, 2022.
2. **Mazur LM**, Shultz B, Dangerfield C, Adapa K, Burgess E, Ivester T. Implementing a tiered huddle system during the COVID-19 pandemic in a large academic healthcare system. *Industrial Engineer Magazine*. 53(7), 2021.  
<https://www.iise.org/ISEMagazine/Details.aspx?id=52000>
3. Stokes S, Kanwar R, Jain S, Adapa K, Meltzer-Brody S, **Mazur LM**. Hospitalist burnout and sociotechnical factors contributing to workplace stress. *Industrial Engineer Magazine*. 53(2), 2021. <https://www.iise.org/isemagazine/details.aspx?id=51417>
4. Chera BC, Amos A, **Mazur LM**, Marks L. Safety is All About Culture. *ASTRO News*, Spring 2020.
5. **Mazur LM**, Campbell A, Mosaly P, Adapa K, Kratzke I, Marks LB, Samantha Meltzer-Brody S, Farrell, TM. Reducing Residents’ Burnout Using Neurofeedback. *Industrial and Systems Engineering Magazine*. 51(9):33-17, 2019.
6. Ming-Chien C, ..., **Mazur LM**. Healthcare Engineering Defined: A White Paper. *Journal of Healthcare Engineering*. 6(4):635-648, 2016. [doi:10.1260/2040-2295.6.4.635](https://doi.org/10.1260/2040-2295.6.4.635).
7. **Mazur LM**, McCreery J, Vaughan M, Lefteris C. Making Hospital Form Follow Function. *Industrial Engineer Magazine*. 45(5), 2013.  
<https://www.iise.org/IEMagazine/Details.aspx?id=34371>
8. Chera BS, Jackson M, **Mazur LM**, Adams R, Chang S, Deschesne K, Cullip T, Marks LB, Improving Quality of Patient Care by Improving Daily Practice in Radiation Oncology. *Seminars of Radiation Oncology*. 22(1):77-85, 2012. [doi:10.1016/j.semradonc.2011.09.002](https://doi.org/10.1016/j.semradonc.2011.09.002).

#### **Refereed Conference Proceedings Articles (full length manuscripts; oral presentations):**

1. Foster F, Adapa K, Soloway A, Francki J, **Mazur LM**. Evaluating Usability of Workplace Violence Tools, Cognitive Workload and Performance of Healthcare Professionals. *International Medical Informatics Association's Med Info 2021 Virtual Conference*. September 2021.
2. Pillai M, Adapa K, Shumway J, Dooley J, Das S, **Mazur LM**. Feature Engineering for Interpretable Machine Learning for Quality Assurance in Radiation Oncology. *International Medical Informatics Association's Med Info Virtual Conference*. September 2021.
3. Adapa K, Pillai P, Mosaly P, Das S, **Mazur LM**. Exploring machine learning approaches to predict objective performance using NASA-TLX dimensions. *International Medical Informatics Association's Med Info Virtual Conference*. September 2021.
4. Adapa K, Mosaly P, Yu F, Moore C, Das S, **Mazur LM**. Exploring Association between Perceived Usability of Dosimetry Quality Assurance Checklist and Perceived Cognitive Workload of Dosimetrists in Clinical Settings. *Human Factors and Ergonomics Annual Conference*. Baltimore, 2021.
5. Abrantas A, Comitz E, Mosaly P, **Mazur LM**. Classification of EEG Features for Prediction of Working Memory Load. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016.
6. Amos A, Taylor K, Johnson K, **Mazur LM**. Assessing the Quality of the A3 Thinking Tool for Problem Solving. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016.
7. Mosaly P, **Mazur LM**. Physiological evaluation and Quantification of physician's cognitive workload during interaction with computer based clinical system. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016.
8. Mosaly P, **Mazur LM**, Marks L. Usability Evaluation of Electronic Health Record System (EHRs) using Subjective and Objective Measures. ACM SIGIR Conference on Human Information Interaction and Retrieval (CHIIR). Chapel Hill, NC, March 2016.
9. Pooya P, Ivy J, **Mazur LM**, Deschesne K, Mosaly P, Tracton G, Singh N. Assessing the Reliability of the Radiation Therapy Care Delivery Process Using Discrete Event Simulation. Proceedings of the 2014 Winter Simulation Conference.
10. Mosaly P, **Mazur LM**, Chera B, Marks LB. Assessing Cognitive Effort using Task Evoked Pupillary Response during Physicians' Interaction with Electronic Medical Records. Human Factors and Ergonomics Society, 2014 International Annual Meeting.
11. **Mazur LM**, Rothenberg L, McCreery J. Measuring and Understanding Change Recipients' Buy-In during Lean Transformation Program. IIE Annual Conference and Expo, Reno, May, 2011.

12. **Mazur LM**, McCreery J, Rothenberg L. Exploring the Power of Social Networks and Leadership Styles during Lean Program Implementation in Hospitals. IIE Annual Conference and Expo, Reno, May 2011.
13. Jackson M and **Mazur LM**. Exploring Lean Transformation using Theory of Planned Behavior. IIE Annual Conference and Expo, Reno, May 2011.
14. **Mazur LM**, McCreery J, Rothenberg L. Research and Evaluation of Engineering Management Approaches for Continuous Improvement in Rural Hospitals. IIE Annual Conference and Expo, Cancun, Mexico, June 2010. *Selected as one of the 5 best papers in Engineering Management Track.*
15. Poole T, **Mazur LM**. Assessing Readiness for Lean Change in Emergency Department. IIE Annual Conference and Expo, Cancun, Mexico, June 2010.
16. Mosley P, Jackson M, Taylor K, Xu J, **Mazur LM**. Assessment of Mental and Physical Workload of Nursing Staff in High Dosage Radiation Treatment Room. IIE Annual Conference and Expo, Cancun, Mexico, June 2010.
17. Gebicki M, Andrikopoulos A, Hume M, **Mazur LM**, Chen S-J. Methods and Skills for Effective Health Care Processes Improvement: A Lean Engineering Approach. IIE Annual Conference and Expo, Miami, Florida, May 2009.
18. **Mazur LM** and Chen S-J. Implementation of Departmental Flow Analysis for Project Task Coordination. IIE Annual Conference and Expo, Miami, Florida, May 2009.
19. **Mazur LM** and Chen S-J. Recommendations for Effective Management of Medication Errors. IIE Annual Conference and Expo, Miami, Florida, May 2009.
20. Chen S-J and **Mazur LM**. Task-Member Assignments Using Genetic Algorithm. Proceedings of 4th International Conference on Project Management, Anchorage, Alaska, September 2008.

#### **Refereed Conference Proceedings Abstracts:**

1. Adapa K, Kanwar R, Stokes s, Kratzke I, Meltzer-Brody S, Mazur LM. Identifying Factors Contributing to Primary Care Practitioners' (PCPs) Burnout and Prioritizing Improvement Efforts to Mitigate PCPs' Burnout during COVID-19. *International Conference on Physician Health*. Phoenix AZ, September 2021. Accepted for oral presentation.
2. Adapa K, Kanwar R, Stokes S, Kratzke I, Meltzer-Brody S, **Mazur LM**. Innovative Participatory Approach to Identify Factors Contributing to PCPs Burnout and Prioritizing Targeted Improvement Efforts to Mitigate PCPs Burnout. Accepted for poster presentation at American Conference on Physician Health. *International Conference on Physician Health*. Phoenix AZ, September 2021. Accepted for poster presentation.

3. Stokes S, Kanwar R, Adapa K, Meltzer-Brody S, **Mazur LM**. Identification and Comparison of Top-Ranked Socio-Technical Factors Contributing to Oncology-Provider Burnout during COVID-19 to Pre-pandemic Factors. *International Conference on Physician Health*. Phoenix AZ, September 2021. Accepted for oral presentation.
4. Kratzke I, Stokes S, Kanwar R, Adapa K, Meltzer-Brody S, **Mazur LM**. Evaluating the Sociotechnical Factors that Lead to Burnout in Surgical Residents During the COVID Era. *International Conference on Physician Health*. Phoenix AZ, September 2021. Accepted for oral presentation.
5. Adapa K, Mosaly P, Yu F, Moore C, Das S, **Mazur LM**. Association between Measures of Electronic Health Records' Usability and Cognitive Workload: A scoping review. *American Medical Informatics Association's Clinical Informatics Annual Conference*. San Francisco CA, October 2021. Accepted for poster presentation.
6. Adapa K, Mosaly P, Yu F, Moore C, Das S, **Mazur LM**. Exploring the Impact of Perceived Usability and Cognitive Workload on Objective Performance Using Supervised Machine Learning Classifiers. *American Medical Informatics Association's Clinical Informatics Annual Conference*. San Francisco CA, October 2021.
7. Adapa K, Mosaly P, Yu F, McGurk R, Moore C, Das S, Marks L, **Mazur LM**. Evaluating the Usability of a Dosimetry Quality Assurance Checklist and Associated Workload, Performance, and Patient Safety in Clinical Settings. *ASTRO's Annual Conference*. Boston MA, October, 2021. Accepted for poster presentation.
8. Shumway J, Adapa K, Amos A, **Mazur LM**, Das S, Chera B, Marks L. The Utility of Video-based Pre-treatment Peer Review in the COVID Era. *ASTRO's Annual Conference*. Boston MA, October, 2021. Accepted for poster presentation.
9. Kratzke I, Stokes S, Kanwar R, Adapa K, Meltzer-Brody S, **Mazur LM**. Mixed-methods Analysis of The Socio-technical Factors Contributing to Workplace Stress in Surgical Residents During Covid-19 Pandemic. *American College of Surgeons Virtual Conference*. October, 2021. Accepted as an oral presentation.
10. Shultz B, Karthik A, Foster M, **Mazur LM**. Leadership Walkarounds to Support Tiered Safety Huddles at a Large Healthcare System at the Lean Healthcare Academic Conference. *Stanford Lean Virtual Conference*. September, 2021. Accepted for oral presentation.
11. Richardson D, Adapa K, Cole A, Khasawneh A, **Mazur LM**. Advancing Methods for Analyzing and Visualizing Patient-level Data from Discrete Choice Experiments to Inform Shared Decision Making about Chemotherapy. *Society of Medical Decision Making Annual North American Meeting. Virtual Meeting*. October 2021. Accepted for oral presentation.
12. Cole A, Adapa K Richardson D, **Mazur LM**. Co-design Approaches Involving Older Adults in the Development of Electronic Healthcare Tools: Processes and Levels of Involvement.

*International Medical Informatic Conference (MedInfo)*. Virtual Conference. October 2021. Accepted for poster presentation.

13. Adapa K, Shultz B, Dangerfield C, Burgess E, Ivester T, **Mazur LM**. The Effectiveness of System-level Implementation of Tiered Huddle System. 14<sup>th</sup> Annual Conference on the *Dissemination and Implementation in Health*. Virtual Conference. December 2021. Accepted as poster presentation.
14. **Mazur LM**, Shultz B, Dangerfield C, Burgess E, Ivester T. UNC Journey Towards High Reliability – Tiered Huddle System. *IHI Patient Safety Congress*. Virtual conference. September 2021.
15. Fentom-Wilhelm S, Amos A, **Mazur LM**. 300% Improvement – A Journey to Creating a Robust Patient Safety Reporting System. *ASHRAM Risk Management Annual Meeting*. San Antonio, October 2021. Accepted for oral presentation.
16. **Mazur LM**, Adapa K. The University of North Carolina’s (UNC) Journey Towards High Reliability – Tiered Huddle System and Use of Human Factors and Systems Engineering Methods and Tools (4hr workshop). *Human Factors and Ergonomics Society Annual Conference*. Virtual Conference. October 2021.
17. Lindsay DP, Gu D, Amos A, Chera BS, Marks LB, and **Mazur LM**. Reliability of an Incident Analysis Tool in Radiation Oncology. 25th Annual IHI Scientific Symposium; 2019 Dec 09; Orlando, FL. Accepted for poster presentation.
18. Gu D. Amos A, Reeves K, and **Mazur LM**. How Robust is Your Incident Reporting System? A Practical Measurement Tool. 2019 IHI National Forum on Quality Improvement in Health Care; 2019 Dec 10-11; Orlando, FL. Accepted for poster presentation.
19. Pillai M, Adapa K, Das K, **Mazur LM**, Dooley J, Marks L, Chera B. Augmenting Quality Assurance Measures in Radiation Oncology with Machine Learning. AMIA Annual Symposium, Washington DC, November 2019. Accepted for poster presentation.
20. Adams RD. **Mazur LM**. Radiation Therapists Emulator Training. National Radiation Therapist Meeting, San Antonio Texas, October 2019. Accepted for oral presentation.
21. Adams RD, **Mazur LM**. Simulation Based Training. National Association of Medical Dosimetrists National Meeting, Austin Texas. June 2019. Accepted for oral presentation.
22. **Mazur LM**, Stokes S. Measuring Individual Transformation to Lean Thinking -- Pilot Study, Industrial and Systems Engineering Research Conference, Orlando, FL, May 2019. Accepted for oral presentation.
23. Stokes S, **Mazur LM**. Towards a Better Understanding of Factors Contributing to Provider Burden. Industrial and Systems Engineering Research Conference, Orlando, FL, May 2019. Accepted for oral presentation.

24. **Mazur LM.** Using simulation-based training to advance safety mindfulness of radiation therapy therapists. 25<sup>th</sup> Annual Meeting of Society for Simulation in Europe. Glasgow, Scotland, June 2019a. Accepted for oral presentation.
25. Mullins B, McGurk R, Amos A, Gu D, Chera C, Marks L, Das S, **Mazur LM.** Bowtie Analysis to Enhance Patient Safety in Radiation Oncology. American Society for Therapeutic Radiology and Oncology (ASTRO), 61th Annual Conference, Chicago, IL, September 2019. Accepted for poster presentation.
26. Lindsay D, Gu D, Amos A, Chera B, Marks L, **Mazur LM.** Incorporating Human-Factors and Classification System (HFACS) into Analysis of Reported Near-misses and Incidents in Radiation Oncology Settings. American Society for Therapeutic Radiology and Oncology (ASTRO), 61th Annual Conference, Chicago, IL, September 2019. Accepted for poster presentation.
27. McGurk R, Mullins B, Amos A, Gu A, Chera B, Marks L, Das S, **Mazur LM.** Analysis of SBRT Planning and Delivery Incidents via Customized Process Mapping. American Association of Physicists in Medicine (AAPM), 61th Annual Meeting-2019. Accepted for oral presentation.
28. Howell T, **Mazur LM.** Quantifying, Visualizing, and Predicting Radiation Oncology Process Reliability using Incident Learning System Data. International Conference on Applied Human Factors and Ergonomics, Washington, DC, July 2019. Accepted for oral presentation.
29. Castellano N, **Mazur LM.** Association between Physicians' Burden and Performance during Interactions with Electronic Health Records (EHRs). International Conference on Applied Human Factors and Ergonomics, Washington, DC, July 2019. Accepted for oral presentation.
30. Mosaly PR, **Mazur LM.** Assessment of Interface Driven Task Difficulty and Mental Effort during Interaction with Electronic Health Record System. International Conference on Applied Human Factors and Ergonomics, Washington, DC, July 2019. Accepted for oral presentation.
31. Campbell A, **Mazur LM,** Yefimov M, Meltzer-Brody S, Mosaly P, Farrell T. Towards better Understanding of Physician Burnout: Can Neurofeedback Help? International Conference on Applied Human Factors and Ergonomics, Washington, DC, July 2019. Accepted for oral presentation.
32. Stokes S, **Mazur LM,** Meltzer-Brody S. A Systems Engineering Analysis Approach to Understanding Provider Burden and Identifying Short- and Long-term Interventions. International Conference on Applied Human Factors and Ergonomics, Washington, DC, July 2019. Accepted for oral presentation.

33. Stokes S, **Mazur LM**. Individual Transformation to Lean-Thinking: Results from a Pilot Study. Lean Healthcare Academic Conference at Stanford, Palo Alto, CA, October 2018. Accepted for poster presentation.
34. **Mazur LM**. Effect of Neurofeedback Intervention on Medical Residents' Burnout. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2018. Accepted for oral presentation.
35. Amos A, Saponaro P, **Mazur LM**, Chera B, Marks L. Patient Flow Analysis in Outpatient Radiation Oncology Clinic: Improving the Patient's Experience. Society for Radiation Oncology Administrators (SORA), 34<sup>th</sup> Annual Meeting, San Diego, CA, July 2017. Accepted for oral presentation.
36. **Mazur LM**. Improving procedural compliance of radiation oncology professionals using simulation-based training. International Conference on Applied Human Factors and Ergonomics, Los Angeles, CA, July 2017. Accepted for oral presentation.
37. Mosaly P, Yu F, **Mazur LM**, Guo H, Merck D, Laidlaw D, Marks L, Mostafa J. Assessing relationship between workload, task demand and performance during physician-EHR interaction. International Conference on Applied Human Factors and Ergonomics, Los Angeles, CA, July 2017. Accepted for oral presentation.
38. Thompson T, Tracton G, Howell T, Mosaly P, **Mazur LM**. Building a robust treatment delivery system by balancing the reliability of “safety” processes with workload. International Conference on Applied Human Factors and Ergonomics, Los Angeles, CA, July 2017. Accepted for oral presentation.
39. Amos A, Taylor K, Johnson K, **Mazur LM**. Validation of quality assessment tool for A3 thinking-based improvement projects. International Conference on Applied Human Factors and Ergonomics, Los Angeles, CA, July 2017. Accepted for oral presentation.
40. **Mazur LM**, Chera B, Marks L. Using Simulation-based Training to Enhance Procedural Compliance of Radiation Oncology Professionals. American Society for Therapeutic Radiology and Oncology (ASTRO), 59th Annual Conference-2017. Accepted for poster presentation.
41. **Mazur LM**, Mosaly P, Moore C, Mustafa J, Marks LB. Acknowledgment and Follow-up on Abnormal Test Results under Cross-coverage? Results of a Randomized Trial. UNC Health Informatics Symposium 2017, Chapel Hill, NC. Accepted for poster presentation.
42. Judy G, Reddy-Mosaly P, **Mazur LM**, Tracton G, Marks L, Chera B. Near Miss or Safety Incident in Patients Treated with Radiotherapy: What are the Contributing Factors? American Society of Clinical Oncology (ASCO), Chicago, IL, March 2017. Accepted for oral presentation.



43. Chera B, Marks L, **Mazur LM**. Development and Test of Simulated Scenarios to Assess Radiation Therapy Physicians' Performance during Interaction with Computers. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016. Accepted for oral presentation.
44. Johnson K, **Mazur LM**. Incorporating Lean Exploration Loops into New Hospital Design. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016. Accepted for oral presentation.
45. Comitz E, Mosaly P, **Mazur LM**. Alpha/Theta Power During Cognitive Tasks in the EMR. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016. Accepted for oral presentation.
46. **Mazur LM**, Campbell A, Comitz E, Planting D, Lowen S, Mosaly P, Aysenil B, Chera B, Marks L. Neuro-feedback as Intervention to Improve Providers' Workload and Performance during Computer-based Tasks. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016. Accepted for oral presentation.
47. Mosaly P, **Mazur LM**, Hoyle L, Marks L. Usability Evaluation of Electronic Medical Records with Radiation Oncologist using Subjective and Objective Measures. American Society for Therapeutic Radiology and Oncology (ASTRO), 57th Annual Conference-2015. Accepted for poster presentation.
48. Wilson A, Chang D, Alley M, Chera B, **Mazur LM**, Comitz E, Deschesne K, Mosaly P, Taylor K, Rockwell J, Terzo L, Neuvirth K, Stravers L, Hoyle L, Tracton G, Adams A. Rate of Portal Film Approval: An In-House Retrospective Analysis of Regular vs. Cross-Coverage Variances in Radiation Oncology. American Society for Therapeutic Radiology and Oncology (ASTRO), 57th Annual Conference-2015. Accepted for poster presentation.
49. Chang D, Alley M, Adams R, Wilson A, Church J, Comitz E, Deschesne K, Mosaly P, Taylor K, Johnson K, Terzo L, Rockwell J, Neuvirth K, Stravers L, Hoyle L, Tracton G, **Mazur LM**, Marks L, Chera B. Enhancing Patient Safety Mindfulness and Promoting a Safety Culture in Radiation Oncology Through the use of an Event Learning System (ELS). American Society for Therapeutic Radiology and Oncology (ASTRO), 57th Annual Conference-2015. Accepted for poster presentation.
50. **Mazur LM**, Mosaly P, Tracton G, Taylor K, Johnson K, Comitz E, Adams R, Chera B, Marks L. A Quantitative Assessment of the Utility of Safety Barriers. American Society for Therapeutic Radiology and Oncology (ASTRO), 57th Annual Conference-2015. Accepted for oral presentation. *Selected for discussion as one of the 2015 Best of ASTRO meeting.*
51. **Mazur LM**, Mosaly P, Hoyle L, Falhook A, Eblan M, Marks L. Quantification of workload and performance during provider-EMR interactions. University of North Carolina Annual Quality Expo 2015, Chapel Hill, North Carolina, NC. Accepted for oral presentation.

52. Pooya P, Ivy J, **Mazur LM**, Marks L, Deschesne K, Mosaly P, Tracton G, Chera B. A Framework for Evaluating the Cost-Effectiveness of Safety Barriers in Radiation Therapy Process. 2015 CIHDS (Center for Integrated Healthcare Delivery Systems) Workshop, State College, PA, March 2015. Accepted for oral presentation.
53. Pooya P, Ivy J, **Mazur LM**, Marks L, Deschesne K, Mosaly P, Tracton G, Chera B. A Cost-Effectiveness Study of Safety Barriers in Radiation Therapy Process. Industrial and Systems Engineering Research Sessions (ISERC), Nashville, TN, May 2015. Accepted for oral presentation.
54. Pooya P, Ivy J, **Mazur LM**, Marks L, Deschesne K, Mosaly P, Tracton G, Chera B. A Framework for Evaluating the Cost-Effectiveness of Safety Barriers in Radiation Therapy Process. Industrial and Systems Engineering Research Conference, Nashville, TN, July 2015. Accepted for oral presentation.
55. Johnson K and **Mazur LM**. Integrating Lean Principles and Practices into Hospital Design. Industrial and Systems Engineering Research Conference, Nashville, TN, May 2015. Accepted for oral presentation.
56. **Mazur LM**. Towards Higher Levels of Safety Mindfulness. Industrial and Systems Engineering Research Conference, Nashville, TN, May 2015. Accepted for oral presentation.
57. Marks L, **Mazur LM**. Towards High Reliability and Value Creation in Healthcare: A Case Study from Radiation Oncology Clinic. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015. Accepted for oral presentation.
58. Campbell J, **Mazur LM**. Towards safe, accessible, and efficient electronic medical records (EMR): Exploration of efforts at Epic. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015. Accepted for oral presentation.
59. Lebbos N, Oyung R, **Mazur LM**. Adopting human center design to enhance patient safety and improve quality of life. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015. Accepted for oral presentation.
60. **Mazur LM**, Mosaly P, Comitz E. Relating Workload to Performance during Physician-Computer Interactions. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015. Accepted for oral presentation.
61. Mosaly P, **Mazur LM**. Usability Evaluation of Electronic Medical Records with Physicians using Pupillary Response. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015. Accepted for oral presentation.
62. **Mazur LM**, Johnson K, Chadwick J. Safe and Efficient Hospitals: A Case Study of Lean-Evidence Based Design (EBD) Approach during Program and Schematic Phases of Design. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015. Accepted for oral presentation.

63. Pooya P, Ivy J, **Mazur LM**, Deschesne K, Mosaly P. An Optimization Framework to Improve Patient Safety in Radiation Therapy Care Delivery Process. INFORMS Annual Meeting, San Francisco, CA, November 2014. Accepted for oral presentation.
64. Pooya P, Ivy J, **Mazur LM**, Deschesne K, Mosaly P, Tracton G. Assessing the Reliability of the Radiation Therapy Care Delivery Process Using Discrete Event Simulation. Winter Simulation Conference, Savannah, GA, December 2014. Accepted for oral presentation.
65. **Mazur LM**. Towards Lean Implementation Theory of Individual Transformation in Healthcare. American Society of Engineering Management, Virginia Beach, VA, October 2014. Accepted for oral presentation.
66. Mosaly P, **Mazur LM**, Chera B, Marks L. Objective Assessment of Mental Workload with Pupillary Monitoring during Routine Clinical Tasks: The Impact of Cross-coverage. Industrial and Systems Engineering Research Conference and Expo (ISERC), 2014, Montreal, Canada. Accepted for oral presentation.
67. Mosaly P, **Mazur LM**, Chera B, Marks LB. Task-evoked pupillary response as an Indicator of Cognitive Workload “Redline”. American Society for Therapeutic Radiology and Oncology (ASTRO), 56th Annual Conference-2014. Accepted for poster presentation.
68. Taylor KB, Chera B, **Mazur LM**. A Case Study of the Use of A3 Thinking in Radiation Oncology. American Society for Therapeutic Radiology and Oncology (ASTRO), 56th Annual Conference-2014. Accepted for poster presentation.
69. Chera B, Deschense K, Mosaly P, Tracton G, **Mazur LM**, Marks LB. Lessons from a Prospective Incident Learning System: Focus on Physician-Specific “Errors/Near-Misses” and “Errors” that Reached the Patient. American Society for Therapeutic Radiology and Oncology (ASTRO), 56th Annual Conference-2014. Accepted for oral presentation.
70. Adams RD, **Mazur LM**, Chera B, Marks LB. Towards High Reliability and Value Creation in Radiotherapy: University of North Carolina's Department of Radiation Oncology Pursuit for Patient Safety. National Radiation Therapy Conference, San Francisco CA, September 14-16, 2014. Accepted for oral presentation.
71. **Mazur LM**, Mosaly P, Falchook A, Eblan E, Boyle M, Frohlich F, Marks LB. Quantification of Physicians' Workload using Eye-tracking and EEG-based Data. Industrial and Systems Engineering Research Conference, Montreal, Canada, May 2014. Accepted for oral presentation.
72. Taylor LM, **Mazur LM**, Chera B, Marks LB. Application of “A3 Thinking” to Operational Improvements in Radiation Oncology. Industrial and Systems Engineering Research Conference, Montreal, Canada, May 2014. Accepted for oral presentation.

73. Mosaly P, **Mazur LM**, and Marks LB. Task-evoked pupillary response as an Indicator of Cognitive Workload “Redline. Industrial and Systems Engineering Research Conference, Montreal, Canada, May 2014. Accepted for oral presentation.
74. **Mazur LM**, Mosaly P, Falchook A, Eblan E, Boyle M, Frohlich F, Marks LB. Towards Better Understanding of Cognitive Workload during Physician-Computer Interaction, International Conference on Applied Human Factors and Ergonomics, Krakow, Poland, July 2014. Accepted for oral presentation.
75. **Mazur LM**, Chera B, Adams R, Marks LB. Using High Reliability and 'Lean' Thinking to Drive Excellence in Patient Safety: A Case Study from Radiation Oncology. International Conference on Applied Human Factors and Ergonomics, Krakow, Poland, July 2014. Accepted for oral presentation.
76. McCreery J, **Mazur LM**, Leading Change in Hospital Lean Implementation: Top Management Perceptions and Reflection. International Conference on Applied Human Factors and Ergonomics, Krakow, Poland, July 2014. Accepted for oral presentation.
77. **Mazur LM**, and McCreery J. Hospital Design: Integrating Evidence-Based Design with Lean Principles and Practices. IIE Annual Conference and Expo, Puerto Rico, May 2013. Accepted for oral presentation.
78. **Mazur LM**, Mosaly P, Jones E, Hoyle L, Chera B, Marks LB. Exploring Association Between Mental Workload and Performance in Radiotherapy Planning. IIE Annual Conference and Expo, Puerto Rico, May 2013. Accepted for oral presentation.
79. Mosaly P, **Mazur LM**, Jones E, Hoyle L, Chera B, Marks LB. Physicians Mental Workload Quantification during Cross-coverage in Radiation Treatment Planning, IIE Annual Conference and Expo, Puerto Rico, May 2013. Accepted for oral presentation.
80. Hummer D, **Mazur LM**, Hoeg K. A Mixed Methods Case Study of Lean Implementation Climate. IIE Annual Conference and Expo, Puerto Rico, May 2013. Accepted for oral presentation.
81. Mosaly P, **Mazur LM**, Jones E, Hoyle L, Chera B, Zagar T, Marks L. Quantifying the Impact of “Cross-coverage” on Physician’s Workload and Performance During Radiation Therapy Treatment Planning. American Society for Therapeutic Radiology and Oncology (ASTRO), 55th Annual Conference, Atlanta, GA, 2013. Accepted for oral presentation.
82. Mosaly P, **Mazur LM**, Miller S, Eblan M, Jones E. Applying Human Factors Analysis and Classification System (HFACS) to the Analysis of ‘Good Catches’ in Radiation Oncology. American Society for Therapeutic Radiology and Oncology (ASTRO), 55th Annual Conference, Atlanta, GA, 2013. Accepted for oral presentation.
83. Mosaly P, **Mazur LM**, Miller S, Eblan M, Jones E, Burkhardt K, Adams R, Rockwell J, Chera B, Marks LB. Applying the Human Factors Analysis and Classification System

(HFACS) Model to the Analysis of Radiation Therapy Safety Events. Joint Workshop: Technology for Innovation in Radiation Oncology, National Institutes of Health, Bethesda, MD, 2013. Accepted for poster presentation.

84. **Mazur LM**, Mosaly P, Jones E, Hoyle L, Chera B, Marks L. Towards Better Understanding of Workload and Performance during Radiation Therapy Planning Tasks. Joint Workshop: Technology for Innovation in Radiation Oncology, National Institutes of Health, Bethesda, MD, 2013. Accepted for poster presentation.
85. Venkitasubramanian A, Yannayon J, Kim B, Donahue D, Augustine GK, Doshi N, Venkateswaran A, Arellano C, **Mazur LM**. Empirical Evaluation of Hand Hygiene Perceptions and Behaviors, Institute for Healthcare Improvement, 23rd Annual National Forum on Quality Improvement in Health Care, Orlando, 2012. Accepted for poster presentation.
86. **Mazur LM**, Mosaly P, Marks LB. Association Between Workload and Errors in Clinical Radiation Oncology”, American Society for Therapeutic Radiology and Oncology (ASTRO), 54th Annual Conference, Boston, 2012. Accepted for poster presentation.
87. **Mazur LM**, Mosaly P, Jones E, Hoyle L, Chera B, Zagar T, Marks LB. Quantification of Physician Workload for Radiotherapy Planning, and Possible Associations with Performance. ASCO's Quality Care Symposium, San Diego, 2012. Accepted for poster presentation.
88. Hummer D, **Mazur LM**, Lefteris C, Grant H. Assessment between Organizational Climate and Lean Behaviors, IIE Annual Conference and Expo, Orlando, May 2012. Accepted for oral presentation.
89. Mosaly P, **Mazur LM**, Banes D, Plato A, and Marks LB. Interventions in Standardizing Work Procedures and Reducing Stress in High-dosage-radiation Nurses' Work. International Forum on Quality and Safety in Healthcare Expo 2012, Paris. Accepted for poster presentation.
90. Adams R, Church J, Jackson M, Chang S, Deschesne K, LaChapelle D, Rockwell J, Baynes, D, Jones E, **Mazur LM**, Marks LB. Multipronged Quality Initiative in Radiation Oncology. Institute for Healthcare Improvement, 23rd Annual National Forum on Quality Improvement in Health Care, Orlando, 2011. Accepted for poster presentation.
91. Mosaly P, Mazur LM, Jackson M, Chang S, Burkhardt K, Adams R, Jones E, Rockwell J, Marks LB. Empirical Evaluation of Workload of the Radiation Oncology Physicist during Radiation Treatment Planning and Delivery. Human Factors and Ergonomics Society's 55th Annual Meeting, Las Vegas, 2011. Accepted for oral presentation. *Supplemented with 'full-paper' conference publication.*
92. **Mazur LM**, Moslay P, Jackson M, Chang S, Burkhardt DK, Adams R, Jones E, Rockwell J, Marks LB. Quantitative Assessment of Workload and Stressors in Clinical Radiation

Oncology: A Step Towards Improving Patient Safety”, American Society for Therapeutic Radiology and Oncology (ASTRO), 53rd Annual Conference, Miami, 2011. Accepted for oral presentation.

93. Marks LB, Jackson M, Taylor K, Jones E, **Mazur LM**, Saponaro P, Burkhardt K. From Paper Charts to An Electronic Medical Record (EMR): Challenges to Patient Flow. American Society for Therapeutic Radiology and Oncology (ASTRO), 52nd Annual Conference, San Diego, 2010. Accepted for oral presentation.
94. **Mazur LM**, and Chen, S.-J. “An Empirical Study for Medication Delivery Improvement Based on Healthcare Professionals’ Perceptions of Medication Delivery System”, Production and Operations Management Society (POMS) Conference, Orlando, FL, 2009. Accepted for poster presentation.
95. Jackson M, Johnson J, Thompson S, John S, Lefteris C, **Mazur LM**. Reducing Discharge Time on Patient Floors. Fifteenth Annual International Scientific Symposium on Improving the Quality and Value of Health Care, part of the Annual Institute of Healthcare Improvement Conference, Orlando, FL, 2009. Accepted for poster presentation.
96. Gebicki M, Raghunandan A, Kizhakethil GT, Lawing B, Godwin W, Smith M-L, Carter J, Lefteris C, **Mazur LM**. Inventory Control for Supplies in Emergency Department. Fifteenth Annual International Scientific Symposium on Improving the Quality and Value of Health Care, part of the Annual Institute of Healthcare Improvement Conference, Orlando, FL, 2009. Accepted for poster presentation.
97. Gebicki M and **Mazur LM**. Evaluation of Inventory Management Policies in Hospitals' Medication Supply Chain. Fifteenth Annual International Scientific Symposium on Improving the Quality and Value of Health Care, part of the Annual Institute of Healthcare Improvement Conference, Orlando, FL, 2009. Accepted for poster presentation.
98. Roszell S, Jackson M, Taylor K, Xu J, **Mazur LM**. Reducing Standard Work to Increase Nursing Care Time in a Clinic Setting. Fifteenth Annual International Scientific Symposium on Improving the Quality and Value of Health Care, part of the Annual Institute of Healthcare Improvement Conference, Orlando, FL, 2009. Accepted for oral presentation.

#### **Invited Presentation and Panels – Not Refereed:**

1. **Mazur LM**. Health and Humanities Ground Rounds, UNC, 2019 (60min talk).
2. **Mazur LM**, Mosaly P, Tracton G. Exploring Providers’ Performance During Interactions with Health Information Technology. Carolina Digital Health Research Initiative (CaDHRI) Workshop Series, University of North Carolina (UNC), 2018 (60 min talk).
3. **Mazur LM**, Smith B (session organizers) and Marks L (session moderator). The Impact of EHRs on Radiation Oncology Practice. American Society for Therapeutic Radiology and Oncology (ASTRO), 56th Annual Conference-2016 (90-minute panel session).

4. **Mazur LM.** Towards Better Understanding of Human Errors during Providers Interactions with Electronic Medical Records (EMRs). Fall Pan Campus Health Informatics Meeting, University of North Carolina at Chapel Hill, 2016.
5. **Mazur LM.** Mental Workload and Performance. American Association of Physicists in Medicine (AAPM), 57<sup>th</sup> Annual Meeting-2015. Abstract published with Med. Phys. 42, 3617 (2015); <http://dx.doi.org/10.1118/1.4925671>
6. **Mazur LM.** Current and Future State of Quality and Safety in Radiation Therapy (RT). Industrial and Systems Engineering Department, North Carolina State University, 2016 (ISE; invitation form Dr. Julie Ivy).
7. **Mazur LM, Adams R.** High Reliability and Value Creation in Radiation Therapy: UNC's Pursuit for Patient Safety. American Association of Medical Dosimetrists (AAMD), 5<sup>th</sup> Regional Meeting, Raleigh, NC 2014.
8. **Mazur LM, Grant H.** Using 'Lean' Methodology to Drive Continuous Improvement – Coworkers Empowerment. 37<sup>th</sup> Annual Conference: North Carolina Association of Healthcare Access Management, Carolina Beach, North Carolina, 2012.
9. Spade J, Easton L, **Mazur LM.** Reducing Cost and Improving Care. The 26th Forum on Emerging Issues, Raleigh, NC, 2011.
10. **Mazur LM, Poole T.** Partnering with Students to Improve Care. The 22nd Annual National Forum on Quality Improvement in Health Care, Orlando, FL, 2010.
11. **Mazur LM, McCreery J, Rothenberg L.** Measuring Organizational Change Process in Hospitals: Development of Evaluation Framework. National Outreach Scholarship Conference, Raleigh, NC, October 5th, 2010.
12. **Mazur LM.** Beyond Lean in Healthcare. North Carolina Hospital Association Board Meeting (NCHA), Cary, North Carolina, 2009.
13. **Mazur LM.** Reducing Medication Delivery Errors using Lean Process Design Rules. Annual Six Sigma Conference, College of Textiles, North Carolina State University, Raleigh, NC, February 20th, 2009.
14. **Mazur LM.** Achieving Culture of Excellence for Health Care Operations using Lean Principles. American Society for Quality - Raleigh ASQ Section 1113, 2010.
15. **Mazur LM.** Streamlining Your Organization: The Lean Concept. North Carolina Community Health Center Association 2009 Annual Meeting & Primary Care Conference *in conjunction with the* NC Office of Rural Health and Community Care, New Bern Hotel & Marina, New Bern, NC June 11-13, 2009.

## **Teaching Record**

### **Instructor (with full lecture/lab and grading responsibility):**

- 2016-present INLS 582: Systems Analysis, School of Information and Library Science (SILS) – University of North Carolina.
- 2013-present HPM 967: Lean Six-Sigma I & II for Healthcare, School of Public Health (workshop & on-line class) – University of North Carolina
- 2012 BME 495: Quality Systems and Human Factors Engineering for Medical Devices, (Lecture and Lab), Biomedical Engineering Department – North Carolina State University
- 2008 I&ME 471: Computer Integrated Manufacturing (Lecture and Lab) Industrial and Management Engineering at Montana State University
- 2007 I&ME 350: Statistical Data Analysis for Engineers, (Lecture) Industrial & Management Engineering, Montana State University

### **Invited Co-Instructor:**

- 2008-2011 ISE 498: Senior Design Projects  
Industrial and Systems Engineering, North Carolina State University  
Yellow Belt Lean Six Sigma Certification Program for Students

### **Workshops:**

- 2019 Lean-Six Sigma Yellow Belt Certification. Eight-hour workshop for SILS students taking my INLS 582 course. University of North Carolina.
- 2015-present Two-hour workshop to medical students on topics related to patient safety and care quality. School of Medicine – University of North Carolina (initiated via the NC AHEC UNC Campus Innovation Grants). Delivered every  $\approx$  6 weeks to sequential student cohorts.
- 2009-present One-hour workshop to new employees, residents, and students on topics related to Safety and Quality. Radiation Oncology, School of Medicine – University of North Carolina. Delivered as needed (just-in-time workshop).
- 2016 Six-hour workshop on engineering patient safety in radiation oncology and how to use ‘Lean’ tools to improve your department. ASRT Radiation Therapy Conference, Boston, MA.



2009-2014 Continuous Quality Improvement (CQI) programs in healthcare: Why do they fail? Department of Health Policy and Management, UNC Gillings School of Global Public Health, University of North Carolina (invitation from Dr. Jeffrey Simms and Dr. Bruce Fried).

**Teaching Assistant Experience:**

2005 I&ME 471: Computer Integrated Manufacturing  
2004 I&ME 271: Microcomputers in Industry  
2004 I&ME 471: Computer Integrated Manufacturing  
2003 I&ME 271: Microcomputers in Industry

**PH.D. Advisor:**

2025. Title: TBD. Kwong, Elizabeth Choy School of Information and Library Science (SILS), University of North Carolina.  
2024 Title: TBD Student: Ashlyn Zabrowski, School of Information and Library Science (SILS), University of North Carolina.  
2021 Tentative Dissertation Title: Application of Human Factors Engineering to Optimization of Quality Assurance (QA) Program in Radiation Oncology Settings. Student: Karthick Adapa, School of Information and Library Science (SILS), University of North Carolina.

**Ph.D. Committee Advisor:**

2019 Tentative Dissertation Title: Integrated Technological Support for Coordinated Care inside the Emergency Department. Student: Rachel Stemerman. School of Information and Library Science (SILS), University of North Carolina.  
2016 Dissertation Title: Development and Test of Discrete Event Simulation Models for Optimizing Quality Assurance (QA) Systems. Student: Pega Pooya, Industrial and Systems Engineering, North Carolina State University.  
2013 Dissertation Title: Do Lean Management Initiatives Improve Quality of Care? Student: Sheila Roszell, School of Nursing, University of North Carolina.

**Master Theses Advisor:**

2021 Co-Design Approaches Involving Older Adults: Development of a patient-centered preference tool for patients with hematologic malignancies. Student: Amy Cole SILS, University of North Carolina, Chapel Hill, NC.  
2019 Identifying Facilitators and Barriers in the Application of Contextual Inquiry to Understand Provider Burnout. Student: Richa Kanwar, SILS, University of North Carolina, Chapel Hill, NC.

- 2019 Developing an Objective Framework for Measuring and Assessing the Implementation of Information Systems in a Healthcare Setting. Student: Jain Saumya, SILS, University of North Carolina, Chapel Hill, NC.
- 2018 Usability Assessment of Epic Interfaces using Heuristics.  
Student: Natalie Castellano, SILS, University of North Carolina, Chapel Hill, NC.
- 2017 Assessing the Relationships between Task Demand, Task Difficulty and Performance during Physicians' Interaction with EHR Systems. Student: Xia Dong, School of Library and Information Science, University of North Carolina.
- 2010 Research and Evaluation of Inventory Control Policies in Central Sterile Departments. Student: Gerish Kumar, Industrial and Systems Engineering, North Carolina State University.
- 2009 Understanding Individual Readiness for Process Improvement in Emergency Departments. Student: Trip Poole, Industrial and Systems Engineering, North Carolina State University.

**Senior Design Project Advisor: Undergraduate Students:**

*Industrial & Systems Engineering Department – North Carolina State University:*

- 2016 Cycle Time and Interruptions Study (Department of Radiation Oncology, UNC)  
Students: Seo A, Lisy C.
- 2009 Facility Design – Biomedical Engineering Department (Rex Hospital)  
Students: Smith A, Goldstein B.
- 2008 Product Flow Optimization (Electroswitch, Raleigh, NC)  
Students: Raghunandan A, Kizhakethil A.

*Industrial & Management Engineering Department – Montana State University:*

- 2006 Medication Delivery Process Improvement: Part I (Bozeman Deaconess Hospital)  
Students: Gebicki M, Andrikopoulos A, Hume, M.

**Summer Internships Advisor:**

- 2019 Usability Assessment of Epic Interfaces using Heuristics.  
Student: Natalie Castellano, SILS, University of North Carolina, Chapel Hill, NC.
- 2018 Development of Return on Investment (ROI) Model for Continuous Quality Improvement Programs in Healthcare Settings. Student: Aravind Reddy Kothagadi, SILS, University of North Carolina, Chapel Hill, NC.
- 2018 Usability Assessment of Patient Occurrence Reporting System (PORS)

- Student: Aravind Reddy Kothagadi, SILS, University of North Carolina, Chapel Hill, NC.
- 2018 Machine Learning Application for Quality Assurance (QA) in Radiation Oncology.  
Student: Malvika Pillai, SILS, University of North Carolina, Chapel Hill, NC.
- 2017 Cognitive Modeling of Providers' Interactions with Epic.  
Student: Xia (Shia) Dong, SILS, University of North Carolina, Chapel Hill, NC.
- 2017 Computer Simulation Modeling, Radiation Oncology QA System.  
Student: Howell C, Medical student, University of North Carolina, Chapel Hill, NC.
- 2016 Data Visualization Methods for Safety Mindfulness: Part II (Rad-Onc, UNC).  
Student: Zhao Q, PhD candidate, Computer Science Department, UNC.
- 2015 Data Visualization Methods for Safety Mindfulness: Part I (Rad-Onc, UNC).  
Student: Zhao Q, PhD candidate, Computer Science Department, UNC.
- 2015 Computer Simulation Modeling, Surgical Pavilion Design (Surgery, UNC).  
Student: Pooya P, PhD candidate, Industrial and Systems Engineering, NCSU.
- 2010 Development of Strategies for Hand Hygiene Compliance (Rex Hospital).  
Students: Venkitasubramanian A, Yannayon J, Kim B, Donahue D, Augustine GK, Doshi N, Venkateswaran A.
- 2010 Patient Flow Optimization in Emergency Department (Rex Hospital).  
Students: Gebicki M, Raghunandan A, Poole T.
- 2009 Development of Process Flow and Standard Work to Increase Nursing Care Time in a Clinic Setting, Radiation Oncology. UNC.  
Students: Roszell, S., Mosaly P, Jackson, M., Taylor, K., Xu, J.

**Field Experience:**

- 2017 Emergency Department- Systems Analysis  
Student: Melissa Hofman, SILS, University of North Carolina.
- 2017 Emergency Department- Systems Analysis  
Student: Melissa Hofman, SILS, University of North Carolina.

**Development of Education Materials:**

- 2019 Systems Analysis (On-line version). School of Information and Library Science (INLS 582; 3 credit class).

- 2016 Process Capability and Control Charts; Medical Students; Institute for Healthcare Quality Improvement (IHQI); 3 x 1hr.
- 2016 A3 Problem Solving Workshop; UNC Healthcare System (with collaboration with Operational Excellence (OE)); 2 x 8hrs.
- 2015 Lean and High Reliability; Medical Student; Institute for Healthcare Quality Improvement (IHQI); 2 x 1hr.
- 2013 Lean Six-Sigma Certification (Department of Health Policy and Management, UNC Gillings School of Global Public Health, University of North Carolina, 2 x 8hr workshop and 16 x 1.5hrs lectures delivered on-line over 2 semesters).
- 2009 A3 Problem Solving Class for Radiation Oncology Professionals; (1hr)

**Selected Informal Mentorship:**

I have a somewhat unique role in the university. I’m a PhD/industrial engineer with a primary appointment in a clinical department. One of my primary assignments has been to help to apply industrial engineering (IE) principles, methods and tools to the radiation oncology clinic to improve quality and safety. As such, I have been conducting formal and informal training of employees throughout the department, including members of the Division of Healthcare Engineering (DHE), which I oversee. This consists of formal lectures as well as informal mentoring over time.

- 2021- Dr. Amro Khasawneh (Assistant Professor, DHE)
- 2018-2022 Dr. Ian Kratzke (Surgery Resident, UNC Health)
- 2015-2021 Dr. Alison Amos (Improvement Specialist, DHE)
- 2014-2017 Gregg Tracton (Data Analysis and Visualization, DHE)
- 2013-2014 Kendra Johnson (Improvement Specialist, DHE)
- 2011-2012 Kinley Taylor (Quality and Safety Leader, North Carolina Cancer Hospital)
- 2011-2012 Dr. Marianne Jackson (Improvement Specialist, Cancer Hospital)

**Research Grants**

*[Key = (\*competitive [peer-review]; ^project/industry based [not peer-review]):*

**Active (total=\$727,000):**

- Carolina Center for Total Worker Health and Well-being
  - Agency: National Institute for Occupational Safety and Health (NIOSH 1U19OH012303-0): \$7,5M Date: September 2021 – October 2026 PI: Linnen LA, Co-I (R21 sub-project): **Mazur LM**, Rural and Urban Clinician Well-being and Targeted Improvement Interventions during COVID-19. \$275K). Effort: 5%.
- ^Application of Systems Analysis to Physician Wellness/Burnout Issues – Phase 3.

- Agency: Physician Network, University of North Carolina Healthcare System: \$82K. Date: August 2021 – July 2022 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 20%.
- ^Application of Continuous Quality Improvement (CQI) to COVID 19 Priority Issues.
  - Agency: Physician Network, University of North Carolina Healthcare System: \$370K. Date: August 2021 – July 2021 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 40%.

**Completed (total=\$3,192,000):**

- \*Simulation-based Research to Enhance Performance of Radiation Therapists.
  - Agency: AHRQ Advances in Patient Safety through Simulation Research (R18 HS023458-01): \$800K Date: April 2018 – March 2021 PI: **Mazur LM**, School of Medicine, University of North Carolina (UNC). Effort: 25%.
- \*To Quantify the Impact of the Existing vs. Enhanced Work Configuration of Radiation Therapy Technicians on Workload, Situation Awareness and Performance during Pretreatment QA Tasks.
  - Agency: AHRQ Small Research Projects (R03): \$100,000 Proposed Date: September 2018 – August 2020 (PI: Mosaly P, Co-PI: **Mazur LM**, School of Medicine, University of North Carolina (UNC)). Effort: 5%.
- ^Application of Systems Analysis to Physician Wellness/Burnout Issues – Phase 2.
  - Agency: Physician Network, University of North Carolina Healthcare System: \$328K. Date: July 2019 – June 2021 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 20%.
- ^Application of Continuous Quality Improvement (CQI) to COVID 19 Priority Issues.
  - Agency: Physician Network, University of North Carolina Healthcare System: \$370K. Date: August 2020 – July 2021 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 40%.
- ^Application of Neurofeedback Interventions to Residents Wellness/Burnout Issues.
  - Agency: Physician Network, University of North Carolina Healthcare System: \$25K. Date: August 2019 – July 2020 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 20%
- ^Application of Systems Analysis to Physician Wellness/Burnout Issues – Phase 1.
  - Agency: Physician Network, University of North Carolina Healthcare System: \$114K Date: August 2018 – July 2019 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 20%.
- \*Simulation-based Research to Enhance Patient Safety in Radiation Oncology.
  - Agency: AHRQ Advances in Patient Safety through Simulation Research (1 R18 HS023458-01): \$750K Date: September 2014 – October 2017 (PI: **Mazur LM**. University of North Carolina (UNC)). Effort: 40%.

- \*Enhancing Providers' Ability to Follow-up on Abnormal Test Results.
  - Agency: AHRQ Exploratory and Developmental Grant to Improve Health Care Quality through Health Information Technology (IT) (R21 HS024062-01): \$300K Date: September 2015 – October 2017 (PI: **Mazur LM**. University of North Carolina (UNC)). Effort: 20%.
- \*Towards Formalizing Quality and Safety Instruction in Healthcare Curricula.
  - Agency: NC AHEC UNC Campus Innovation Grants: \$25K Date: October 2015 – October 2016 (Co-PIs: Marks L, **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 50%.
- \*Objective Assessment of Workload and Performance for Clinical Tasks Requiring Human-Computer Interactions.
  - Agency: UNC Center for Health Innovation, University of North Carolina: \$50K Date: July 2013 – June 2014 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 60%.
- ^Quantitative Evaluation of Workload, Situational Awareness and Stressors in Mosaiq-based Tasks.
  - Agency: Elekta (radiation software/machine vendor): \$200K Date: May 2012 – April 2014 (PI: **Mazur LM**. School of Medicine, University of North Carolina (UNC)). Effort: 80%.
- ^Quantitative Evaluation of Workload, Situational Awareness and Stressors in Tomotherapy and Cyberknife-based Tasks.
  - Agency: Accuray (radiation software/machine vendor): \$80K Date: May 2012 – December 2013 (PI: **Mazur LM**, Co-PI: Chang S, School of Medicine, University of North Carolina (UNC)). Effort: 50%.
- \*Empirical Research and Evaluation of Collaborative Implementation Process of Toyota Production System (TPS) Approach to Continuous Improvement in Rural Hospitals.
  - Agency: North Carolina Department of Health & Human Services (NC DHHS), Funding: \$25K Date: June 2009 – March 2010 (PI: **Mazur LM**, Co-PIs: McCreery and Rothenberg L, North Carolina State University (NCSU)). Effort: 60%.
- \*Evaluation of Social Connectedness and Change Management Process for Quality Improvement in Rural Hospitals.
  - Agency: North Carolina Department of Health & Human Services (NC DHHS), Funding: \$61K Date: May 2010 – August 2011 (PI: **Mazur LM**, Co-PIs: McCreery and Rothenberg L, North Carolina State University (NCSU)). Research dissemination website: <http://www.leanimplementationscience.com/> Effort: 60%.
- \*Healing North Carolina Healthcare with One Engineering Student at the Time.

- Agency: University Extension, Engagement, and Economic Development Grants. Funding: \$10K, Date. July 2009 – June 2010 (PI: **Mazur LM**). Effort: 100%.
- ^The Analysis and Improvement of Medication Delivery Processes.
  - Agency: Bozeman Deaconess Hospital, Bozeman, Montana. Funding: \$27K. Date: January 2008 – June 2008 (Co-PIs: Chen S-J, and Stanislao J, Montana State University (MSU); Graduate Researcher: **Mazur LM**). Effort: 60% (PhD work).
- ^The Effects of Automated Medication-Dispensing System on Medication Delivery Performance.
  - Agency: Bozeman Deaconess Hospital, Bozeman, Montana. Funding: \$46K. Date: January 2007 – December 2007 (PIs: Chen S-J, Montana State University (MSU); Graduate Researcher: **Mazur LM**). Effort: 60% (PhD work).
- ^Medication Delivery System Mapping, Analysis and Improvement.
  - Agency: Bozeman Deaconess Hospital, Bozeman, Montana. Funding: \$45K. Date: June 2005 – December 2006 (PI: Dr. Shi-Jie (Gary) Chen from Montana State University (MSU); Graduate Researcher: Lukasz Mazur). Effort: 60% (PhD work).

## **Professional Service**

### ***University of North Carolina Health Care System***

- Advisor to the Office of the Executive Vice Chancellor and Provost – Operations Efficiency (OE): 2019-present.
- Quality Improvement Oversight Committee, University of North Carolina Healthcare System: 2017-present.
- Medical Center Improvement Committee, University of North Carolina Healthcare System: 2017-present.
- Physician Wellbeing Oversight Committee, Physician Network, University of North Carolina Healthcare System: 2017-present.
- Operational Excellence Steering Committee, Provost Office, University of North Carolina: 2019-present.

### ***Agency for Healthcare Research and Quality (AHRQ)***

- Healthcare Safety and Quality Improvement Research (HSQR study section meeting, October 24-25, Washington, DC, 2018).

### ***Institute of Industrial Engineering (IIE)***

- Technical Vice President (TVP). Role: Overseeing institute strategic activities and dissemination efforts; Directly supporting 3 divisions (Society for Healthcare Systems, Quality and Reliability, Manufacturing and Design): 2015-2018.

- Society of Engineering and Management Systems. Role: Director of blog and Engineering Management (EM) content: 2011-2013.

***American Society for Radiation Therapy (ASTRO)***

- Served on a committee to help create an ASTRO's Accreditation Program for Excellence (APEX) designed to define national standards for quality: 2013-2014.
- Served on a committee to help create an ASTRO's Radiation Oncology Incident Learning System (RO-ILS) designed to track errors nationally: 2013-2014.

***American Association of Physicists in Medicine (AAPM)***

- Abstract reviewer: 2017 AAPM Annual Meeting.
- Served on the panel dedicated to patient safety during 2015 AAPM Annual Meeting.

***Applied Human Factors and Ergonomics (AHFE)***

- Conference co-chair: Cognitive Computing and Internet of Things, Orlando, FL, July 2018
- Conference co-chair: Neuroergonomics & Cognitive Engineering, Orlando, FL, July 2018
- Invited session on ***relationship between workload and performance***. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016.
- Invited session on ***simulation-based training***. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016.
- Invited session on ***lean evidence-based design***. International Conference on Applied Human Factors and Ergonomics, Orlando, FL, July 2016.
- Invited session on ***usability of electronic medical records***. International Conference on Applied Human Factors and Ergonomics, Las Vegas, NV, July 2015.

***Industrial and Systems Engineering Research Conference (ISERC)***

- Invited session on ***workload and performance***. Human Factors Track, Industrial Engineering Research Conference, San Juan, Puerto Rico, 2013.
- Invited session on ***implementation science for continuous quality improvement (CQI)***, Engineering Management Track, Industrial Engineering Research Conference, Orlando, Florida, 2012.
- Invited session on ***change management for continuous quality improvement (CQI)***, Engineering Management Track, Industrial Engineering Research Conference, Reno, Nevada, 2011.
- Invited session on ***engineering reliability and patient safety in healthcare***. Engineering Management Track, Industrial Engineering Research Conference, Cancun, 2010.

**Invited Journal Reviewer:**

JAMA Network Open  
 American Journal of Medical Quality  
 BMJ  
 BMJ Open Quality  
 BMJ Quality and Safety  
 Joint Commission Journal on Quality and Patient Safety  
 Journal of Healthcare Quality  
 Health Environments Research & Design Journal



Human Factors  
Ergonomics  
International Journal of Radiation Oncology, Biology and Physics  
Practical Radiation Oncology Journal  
Advances in Radiation Oncology  
Journal of Medical Imaging and Radiation Sciences  
International Journal of Industrial and Systems Engineering  
IEEE Transaction on Engineering Management  
Engineering Management Journal  
Journal of Industrial Engineering and Management  
Journal of Cognitive Engineering  
Computers & Industrial Engineering  
Applied Ergonomics  
Journal of Risk Management and Health Policy  
Journal of Hospital Administration  
Global Journal of Health Science

#### **Editorial Board Member**

Journal of Hospital Administration (2012-2015)  
Global Journal of Health Science (2012-2014)

#### **Associate Editor**

Engineering Management Journal (2012-present; focus on healthcare engineering management).

#### **Engagement on Hospital-based Projects (Selected Examples)**

2020 Safety Walk (Gemba) Implementation, University of North Carolina Hospitals, NC.  
2020 Tiered Huddle System (THS) Implementation, University of North Carolina Hospitals, NC.  
2019 Organizational Goals Lead – Ambulatory, University of North Carolina Hospitals, NC.  
2018 Organizational Goals Lead - Ambulatory, University of North Carolina Hospitals, NC.  
2017 Surgical Tower Design, Lean Team Co-Lead, University of North Carolina Hospitals, NC.  
2016 Surgical Tower Design, University of North Carolina Hospitals, NC.  
2012 Patient Discharge Optimization, Rex Hospital, Raleigh, NC  
2011 Analysis of Throughput Capacity in Cath Lab, Rex Hospital, Raleigh, NC  
2011 Schedule Optimization for Cath Lab, Rex Hospital, Raleigh, NC  
2011 Analysis of Throughput Capacity in Heart Station, Rex Hospital, Raleigh, NC  
2011 Schedule Optimization for Heart Station Department, Rex Hospital, Raleigh, NC  
2010 Kaizen – Missing/Damaged Instruments, Rex Hospital, Raleigh, NC  
2010 Implementation of Central Telemetry, Rex Hospital, Raleigh, NC  
2010 Laboratory Design (Part 2), Rex Hospital, Raleigh, NC  
2010 Kaizen – Food Processing, Rex Hospital, Raleigh, NC  
2010 Training – Performance Excellence for Leaders, Rex Hospital, Raleigh, NC  
2009 Training – Lean Fundamentals, Public Class, Wilmington, NC  
2009 Training – Lean Fundamentals, Duke Hospital, Durham, NC  
2009 Kaizen – Emergency Room Throughput (Part 2), Rex Hospital, Raleigh, NC  
2009 Medication Reconciliation – Reliability Study, Rex Hospital, Raleigh, NC  
2009 Certification – Lean Certification for Healthcare Engineers, Anaheim, CL

2009 Laboratory Design (Part 1), Rex Hospital, Raleigh, NC  
2008 Bed Repair Process Optimization, Rex Hospital, Raleigh, NC  
2008 Laboratory Department Design, Montgomery Hospital, Troy, NC  
2008 Kaizen – Emergency Room Throughput (Part 1), Rex Hospital, Raleigh, NC  
2008 Training – Lean Building Blocks, Public Class, Cary, NC  
2008 Training – Infection Control, SCIP Forum, Chapel Hill, NC  
2008 Training – Lean Culture, Halifax Regional Medical Center, NC  
2007 Medication Errors Management, Bozeman Deaconess Hospital, MT  
2006 Hiring Process Optimization, Bozeman Deaconess Hospital, MT  
2005 Nursing Documentation Optimization, Bozeman Deaconess Hospital, MT  
2005 Medical Record – Structure Evaluation, Bozeman Deaconess Hospital, MT  
2005 Medication Delivery Flow Optimization, Bozeman Deaconess Hospital, MT