

ZACHARY (ZACH) RUMLOW DO, MSc

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Education and Training:

Child Health Evaluation and Research Fellowship: University of Michigan Susan B. Meister Child Health Evaluation and Research Center	2025 – present
Master's of Science in Health and Health Care Research: University of Michigan Rackham Graduate School	2025 – 2026
Pediatric Critical Care Fellow: University of Michigan Pediatric Critical Care Fellowship	2024 – present
Pediatrics Resident – Physician Scientist Training Pathway: University of Iowa Pediatrics Residency	2021 – 2024
Doctorate of Osteopathic Medicine: Rocky Vista University College of Osteopathic Medicine	2017 – 2021
Bachelor of Arts, Biochemistry and Chemistry – With Distinction: University of Colorado at Boulder	2012 – 2015

Licensure and Certification:

American Board of Pediatrics – ABP ID: 1026396	2024 – present
Advanced Cardiac Life Support	2024 – present
Michigan Medical License – License Number: 5315246591	2024 – present
Michigan Controlled Substance – License Number: 5101027866	2024 – present
Pediatric Advanced Life Support	2021 – present
Basic Life Support	2019 – present

Additional Coursework/Membership:

NIH Compass Post-Doctoral Fellowship: Joint training between Washington University and the NIH for post-doctoral trainees to develop skills for team-leadership, communication, peer-mentoring, and research	2026 – present
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University of Michigan Summer Session in Epidemiology: Audited coursework through the University of Michigan School of Public Health. Coursework included: EPID 702 (Analysis with Missing Data), EPID 708 (Machine Learning for Epidemiologic Data Analysis), EPID 720 (Applied Mediation Analysis), EPID 733 (Quasi-experimental Methods in Epidemiology)	2026
Institute For Healthcare Policy and Innovation: Regularly participate in activities with emphasis on the development of careers in health services research	2025 – present
Physician Scientist Training Pathway: Selected to the physician scientist training pathway at the University of Iowa. Completed during the final two years of residency requiring attendance at monthly educational seminars, progress reports, annual presentations at national conferences. Mentor(s): Lyndsay Harshman MD, MS. University of Iowa, Iowa City IA	2022 – 2024

RESEARCH EXPERIENCE:

Causal Inference: Informing the Impact of Diagnostic Codes on Reported Healthcare Utilization and Outcomes in Children with Sepsis: Designed the statistical methodology to perform causal inference to interrogate the impact of sepsis diagnostic codes in the HCUP based Pediatric ICU Epidemiology dataset. Mentor(s): Erin Carlton MD, MSc	2026 – present
The Utilization of Angiotensin II in Children: A review: Served as the analyst for project utilizing the Pediatric Health Information Systems administrative database to identify the utilization of angiotensin II in pediatric patients admitted to critical care units in the United States. Mentor(s): Erin Carlton MD, MSc	2026 – present
The impact of non-linear transformations on non-normally distributed data. An exploration of an underappreciated topic in pediatric sepsis: Performing a simulated observational study and statistical analysis analyzing the impact of non-normal distributions of data on predicted length of stay for patients with pediatric sepsis. Mentor(s): Rahul Ladhania PhD, MSc; Erin Carlton MD, MSc	2026 – present
Factors associated with the Utilization of Extracorporeal Life Support in Patients with “High-Risk” Diagnoses: Performed statistical analysis, methodologic design and manuscript preparation for observational analysis interrogating the impacts of specific diagnoses on an individual’s probability of receiving ECMO. Mentor(s): Ryan Barbaro MD, MSc	2025 – present
10 Year Kidney Outcomes & Healthcare Utilization in a Cohort of Pediatric Patients with Severe AKI by Subphenotype: Performed retrospective analysis of single center data regarding patient outcomes and healthcare utilization for patients over a ten-year period following severe acute kidney injury. Mentor(s): Amy Strong MD, MScE	2023 – present
The Impact of Fluid Accumulation and Acute Lung Injury in Children and young Adults receiving Continuous Renal Replacement Therapy: A Report From the Worldwide Exploration of Renal Replacement Outcomes Collaborative in Kidney Disease: Performed retrospective data collection and ancillary study proposal design regarding outcomes of critically ill patients suffering from pediatric acute respiratory distress syndrome and fluid overload as part of the	2022 – 2026

international WE-ROCK consortium. Mentor(s): Amy Strong MD, MScE; Stephen Gorga MD, MSc; Katja Gist DO, MSc

The Impact of Diagnosis-Specific Plan Templates on Admission Note Writing Time: A Quality Improvement Initiative: Performed two-year QI project and first author manuscript authorship regarding the development and implementation of templated clinical documentation to reduce note-writing burden on residents. Mentor(s): Anna Schmitz MD, Lindsey Knake MD, MS. 2022 – 2024

Development of Unique Coagulopathy Curriculum: Developed an IRB approved study which analyzed the implementation of a trauma Induced coagulopathy curriculum working to improve provider comfort and skill in performing initial hemostasis in the peri-trauma setting. Mentor(s): Amy Stier MD, MME 2022 – 2023

Investigation of Cannabinoid Hyperemesis Syndrome: Pathophysiology, Treatment, and Burden: Performed analysis and summary of published research concerning the use of cannabis as it relates to the development of Cannabis Induced Hyperemesis Syndrome. Mentor(s): Michelle Kem-Su Hor MD 2020

Scholarly Activity:

Ad Hoc Journal Reviews

Pediatrics

Pediatric Research

Leadership Experience and Teaching:

Resident Preparation Instructor: Served as instructor for clinical simulation lab and procedural simulation lab for incoming pediatric residents 2025 – present

Resident Simulation Facilitator: Served as a simulation instructor for pediatric residents 2024 – present

Pediatric Critical Care Medicine: Pathology Review: Developed clinical case review portion of Pathology Review conference. University of Michigan, Ann Arbor MI 2024 – present

General Pediatrics – Presenter: Presented topics to trainees reviewing: Drowning, Acute Kidney Injury, Lactic Acidosis, Acute Kidney Injury, Tylenol Ingestion, and Sodium Channel Antagonists. University of Michigan, Ann Arbor MI 2024 – present

Ultrasound Curriculum Development: Served on committee to develop initial curriculum for introduction to bedside ultrasound to general pediatric residents. University of Iowa, Iowa City IA 2022 – 2023

Awards and Recognition:

Westover Fellow – University of Michigan Department of Pediatrics: In recognition of my likelihood as the pediatric fellow most likely to receive early career funding as a clinician scientist, I was the fellow awarded the 2026 Westover Fellowship position 2026

Team of the Year – In recognition of excellent clinical care and teamwork received award as member of the PICU clinical team for the 2024 – 2025 academic year	2025
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Committee(s):

Patient Transfer Clinical Documentation Project: served as the fellow liaison to develop templated formal clinical documentation for transfer.	2025 – present
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Procedure Supply Improvement Project: served as a fellow liaison to redevelop procedure carts used for PICU bedside procedures	2025 – present
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Oral Presentations:

Is Randomization an Instrument? The SODa-BIC Trial. University of Michigan, Ann Arbor MI	2026
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If the line doesn't fit, you must logit. University of Michigan, Ann Arbor MI	2026
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"The Lord Jehovah...has given unto you these...[11] commandments to obey" – Evidence Based Resuscitation. University of Michigan, Ann Arbor MI	2026
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VASSTLY Superior: Vasopressin versus Norepinephrine Infusion in Patients with Septic Shock. University of Michigan, Ann Arbor MI	2025
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The Endothelium: "If you don't know where you're going, you'll end up someplace else" - Yogi Berra. University of Michigan, Ann Arbor MI	2025
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2 – 4 – 6 – 8: (let's palliate)!. University of Iowa, Iowa City IA	2024
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BIBLIOGRAPHY:

Peer Reviewed Journal Publications

Rumlow, Z, Seo, J., Strong, A. et al. Fluid balance and acute lung injury in children and young adults receiving continuous renal replacement therapy: a report from the Worldwide Exploration of Renal Replacement Outcomes Collaborative in Kidney Disease (WE-ROCK). *Eur J Pediatr* 185, 638 (2026). <https://doi.org/10.1007/s00431-026-07285-8>

Rumlow Z, Almodallal Y, Zimmerman MB, Miner R, Asbury R, Knake L, Schmitz A. The Impact of Diagnosis-Specific Plan Templates on Admission Note Writing Time: A Quality Improvement Initiative. *J Grad Med Educ.* 2024;16(5):581-587. doi:10.4300/JGME-D-24-00087.1

Manuscripts Under Review

Rumlow Z, Zorn A, Misurac J, Strong A. 10 Year Kidney Outcomes & Healthcare Utilization in a Cohort of Pediatric Patients with Severe AKI by Subphenotype. *Journal Of Pediatric Nephrology.* Resubmission 08/2026

Manuscripts in Preparation

Rumlow Z, Ladhania R, Carlton E. The Impact of Non-Linear Transformations on Non-Normally

Distributed Data. An Exploration of an Underappreciated Topic in Pediatric Sepsis. *In Preparation*

Rumlow Z, Killien E, Hartman M, Carlton E Causal Inference: Informing the Impact of Diagnostic Codes on Reported Healthcare Utilization and Outcomes in Children with Sepsis. *In Preparation*

Rumlow Z, Gebremariam A, Modi Z, Gorga S, Carlton E, Barbaro R. Factors associated with the Utilization of Extracorporeal Life Support in Patients with “High-Risk” Diagnoses. *In Preparation*

Abstracts

Rumlow Z, Gebremariam A, Modi Z, Gorga S, Carlton E, Barbaro R. Factors associated with the Utilization of Extracorporeal Life Support in Patients with “High-Risk” Diagnoses. Poster presentation at the University of Michigan CS Mott Department of Pediatrics’ Research Day 2026, Ann Arbor MI

Rumlow Z, Gebremariam A, Modi Z, Gorga S, Carlton E, Barbaro R. Factors associated with the Utilization of Extracorporeal Life Support in Patients with “High-Risk” Diagnoses. Poster presentation presented at Pediatric Academic Society 2026, Boston MA

Rumlow Z, Strong A ... Gorga S. The Impact of Fluid Accumulation and Acute Lung Injury in Children and young Adults receiving Continuous Renal Replacement Therapy: A Report From the Worldwide Exploration of Renal Replacement Outcomes Collaborative in Kidney Disease (WE-ROCK). Poster presentation at 5th International Symposium on Acute Kidney Injury in Children 2025, Cincinnati OH

Rumlow Z, Almodallal Y, Zimmerman MB, Miner R, Asbury R, Knake L, Schmitz A. “A Resident’s Guide to Working Less”. Poster presentation and data-blitz presented at the University of Iowa Stead Family Department of Pediatrics’ Research Day 2024, Iowa City IA

Rumlow Z, Stier A, Rabe G. “Stopping the Bleed”. Poster presentation and data-blitz presented at the University of Iowa Stead Family Department of Pediatrics’ Research Day 2023, Iowa City IA

Rumlow Z, Alhamoud I, Van-Wyck B, Strong A. “Improving Mortality Prediction in Patients Undergoing CRRT”. Poster presentation presented at annual AKI & CRRT 2023, San Diego CA

Dang F, **Rumlow Z**, Kolodziejczyk T, Muir L, Dzwonkowski M, Hor M. “Investigation of Cannabinoid Hyperemesis Syndrome: Pathophysiology, Treatment, and Burden.” Virtual (COVID-19) Poster Presentation at The American Journal of Gastroenterology conference 2020, Nashville TN