

Cameron P Upchurch, MD
CURRICULUM VITAE

Position: Assistant Professor
Departments of Emergency Medicine and Internal Medicine, Division of
Pulmonary Disease and Critical Care Medicine

Robert Larner, MD College of Medicine
University of Vermont

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EDUCATION

Years	Institution	Degree	Area of Degree
2022-2024	Washington University in St. Louis School of Medicine, Division of Pulmonary and Critical Care Medicine	Fellow	Critical Care Medicine
2019-2022	Oregon Health and Science University, Department of Emergency Medicine	Resident	Emergency Medicine; Chief Resident (2021-2022)
2018-2019	St. Joseph Mercy Hospital, Department of Surgery	Resident	General Surgery
2017-2018	University of Michigan Medical Center/St. Joseph Mercy Hospital, Department of Emergency Medicine	Resident	Emergency Medicine
2012-2017	Vanderbilt University School of Medicine	M.D.	<i>Alpha Omega Alpha;</i> Gold Humanism Honor Society
2008-2012	University of Arizona	B.S.	Molecular and Cellular Biology; <i>Summa cum laude</i>

LICENSES, CERTIFICATION

2024-present	Medical Licensure, Vermont: 042.0017686
2024-present	Medical Licensure, New York: 329142
2024-present	Radiologic Technology Ionizing Radiation (Fluoroscopy) Privileges, Vermont: 034.0133795IRP
2024-present	Board Certified, American Board of Internal Medicine, Critical Care Medicine: #570335

2023-present	Board Certified, American Board of Emergency Medicine: #72548
2022-2025	Medical Licensure, Missouri: 2022047910
2019-2022	Educational Limited Medical Licensure, Oregon: PG193325
2017-2019	Educational Limited Medical Licensure, Michigan: 4301112416

CLINICAL CERTIFICATION (year of first certification)

2025	Getinge CardioHelp and HLS (ECMO) perfusionist training course
2025	Extracorporeal Life Support Organization (ELSO) Adult ECMO Cannulation Course
2024	Cardiac Surgical Unit-Advanced Life Support (CSU-ALS)
2022	Extracorporeal Life Support Organization (ELSO) Adult ECMO Training Course
2020	Medication Assisted Treatment (MAT) for Opioid Use Disorder “X-waiver”
2019	Emergency Neurological Life Support (ENLS)
2019	Neonatal Resuscitation Program (NRP)
2017	Basic Life Support (BLS)
2017	Advanced Cardiac Life Support (ACLS)
2017	Advanced Trauma Life Support (ATLS)
2017	Pediatric Advanced Life Support (PALS)

FACULTY POSITIONS HELD

Years	Institution	Academic Title	Department
2024-present	University of Vermont Larner College of Medicine	Assistant Professor	Emergency Medicine and Internal Medicine
2023-2024	St. Louis University School of Medicine	Volunteer Adjunct Assistant Professor	Emergency Medicine

OTHER POSITIONS AND MAJOR ADMINISTRATIVE POSITIONS HELD

Years	Location/Program Name	Role
2025-present	ECMO Program, UVMMC	Co-Medical Director
2025-present	ECMO Clinical Practice Guideline Working Group, UVMMC	Founder and Leader
2025	Cardiogenic Shock Algorithm Working Group, UVMMC	Member
2024-present	Critical Care Education, Department of Emergency Medicine, University of Vermont	Director
2024-present	ECMO Steering Committee, UVMMC	Member
2024-present	Shock Team, UVMMC	Member
2024-present	University of Vermont Medical Center, Burlington, VT	EM, MICU, CVICU, and SICU Attending
2024-present	Champlain Valley Physicians Hospital (CVPH), Plattsburgh, NY	EM and ICU Attending
2024-present	Pulmonary Embolism Response Team (PERT), UVMMC	Member
2023-2024	SSM Health St. Mary’s Hospital, Department of Emergency Medicine	EM Attending
2023-2024	Barnes-Jewish Hospital MICU, Washington University in St. Louis, St. Louis, MO	Internal Moonlighting

HONORS AND AWARDS

Year(s)	Name of Award
2008	Parents of Pinnacle Star Scholarship Scholarship given to outstanding graduate of Pinnacle High School from the Parent-Teacher Association, Pinnacle High School, Phoenix, AZ
2008-2012	Wildcat Excellence Award Four-year full tuition/board merit-based scholarship, University of Arizona
2008-2012	Dean's List with Distinction; Dean's List; Honorable Mention Dean's List Dean's List for academic production every year as an undergraduate, University of Arizona
2011	Galileo Circle Scholar Award Scholarship award given to an undergraduate for their basic science work to support an independently developed project, University of Arizona Department of Molecular and Cellular Biology
2011	Academic Enrichment Stipend Scholarship award given to an undergraduate for their basic science laboratory work, Associated Students of the University of Arizona
2011-2012	Undergraduate Biology Research Program (UBRP) Funding support for one year of undergraduate basic science laboratory work and investigation
2012	Excellence in Mentoring Award Women in Science and Engineering
2012	Excellence in Undergraduate Research Award Award for basic science research productivity and findings generated during undergraduate time, University of Arizona Department of Molecular and Cellular Biology
2012	Astronaut Scholar \$10,000 Award National award for excellence in basic science research during undergraduate years, Astronaut Scholarship Foundation
2012	<i>Summa cum laude</i> University of Arizona
2015	Gold Humanism Honor Society Elected to GHHS as an exemplar of compassionate patient care and role model and mentor
2015-2016	Medical Scholars Program Award to fully-fund one year outside of medical school dedicated to clinical outcomes research, Vanderbilt University School of Medicine
2016	<i>Alpha Omega Alpha</i> Honor Medical Society Awarded to top medical students who demonstrate the highest

- character and attainment in medical sciences, Vanderbilt University School of Medicine
- 2017 Excellence in Emergency Medicine Award
- National award given to an outstanding medical student going into emergency medicine, Society of Academic Emergency Medicine
- 2017 The Kaufman Prize in Medicine
- Presented to the “graduating medical student who has demonstrated qualities of humaneness, dedication, and unselfish service in the study of medicine”, Vanderbilt University School of Medicine
- 2019 Consultant of the Year Award
- Presented by the Department of Emergency Medicine to the “consultant they feel provides superb, timely, and compassionate care to patients in the emergency department requiring consulting service input”, St. Joseph Mercy Hospital
- 2022 Best Research Poster Award
- Department of Emergency Medicine Annual Research Conference, Oregon Health and Science University
- 2022 Resident Educator of the Year Award
- Presented to “the graduating resident who has been deemed by students and peers to be an outstanding teacher and clinical instructor”, Department of Emergency Medicine, Oregon Health and Science University
- 2022 Resident Clinician of the Year Award
- Presented to the “graduating resident who has been deemed by faculty and peers as having demonstrated exemplary clinical and procedural skills during their training. This resident is a role model for departmental efficiency and managing complex patient care”, Department of Emergency Medicine, Oregon Health and Science University
- 2023 Extracorporeal Life Support Organization (ELSO) Froehlich Education Award
- National award provided for “your dedication to medical education and your commitment to the field of Extracorporeal Membrane Oxygenation (ECMO) care. Your unwavering commitment to enhancing ECMO education on a global scale, combined with your passion for innovation and excellence, resonates deeply with the values that this award represents”, ELSO
- 2024 Postdoctoral Trainee Award in Clinical Research
- “In recognition of exemplary scientific exploration through novel and impactful research efforts”, Division of Pulmonary and Critical Care, Washington University in St. Louis School of Medicine
- 2024 Teaching Fellow of the Year Award
- “In recognition of exemplary leadership, patient care, and teaching that fostered a positive learning environment for Internal Medicine Training at Washington University in St.

Louis School of Medicine – Barnes Jewish Residency Program”,
Department of Internal Medicine, Washington University in St.
Louis School of Medicine

2024

Top 50 Peer Reviewer of 2024

- Recognized as Top 50 Peer Reviewer in 2024 for *Annals of Emergency Medicine* for “excellence in peer review and critical analysis of scientific manuscripts”

KEYWORDS/AREAS OF INTEREST

Critical care, emergency medicine, resuscitation, airway management, physiology, acute respiratory distress syndrome, acute respiratory failure, mechanical ventilation, non-invasive ventilation, shock, sepsis, mechanical circulatory support, extracorporeal membrane oxygenation, extracorporeal life support, mechanical circulatory support, pulmonary embolism, multiple organ failure, palliative care

SUMMARY OF PROFESSIONAL ACTIVITIES- OVERALL

I was hired by the Department of Emergency Medicine in July 2024 as an Assistant Professor in Emergency Medicine and Internal Medicine. My clinical time (92.5% FTE) is split between emergency medicine and critical care. My emergency medicine time is spent working in the emergency departments at University of Vermont Medical Center (UVMHC) and Champlain Valley Physicians Hospital (CVPH). My critical care time is spent working in the medical intensive care unit, cardiovascular intensive care unit, and surgical/trauma intensive care unit at UVMHC. While 7.5% of my FTE is dedicated to education as the “Director of Critical Care Education” I spend much more time formally and informally teaching medical students, residents, fellows, and faculty in the departments of emergency medicine, internal medicine, surgery and surgical subspecialties, anesthesia, and pulmonary/critical care given my broad reach and expertise across the medical system in various clinical environments. Furthermore, I am the Co-Medical Director of the ECMO program at UVMHC and have been an integral driving force in the creation of this program from the ground up to offer ECMO to the patients in our region. This has entailed curricula development and the education of faculty, RNs, RTs, perfusionists, staff, and trainees regarding ECMO, creation of clinical practice guidelines regarding ECMO management, supporting and contributing to creating an ECMO transport program, liaising with multiple leaders in various clinical specialties, overcoming logistical challenges, working with coders and billers, developing partnerships with other regional ECMO centers and transplant centers, outreach/education to other hospitals in our health network and non-network hospitals in the VT and Upstate NY region, and lastly deciding on candidacy for ECMO for patients in addition to cannulation, initiation, and ECMO management of patients here. Lastly, I perform clinical outcomes research relating to emergency medicine and critical care topics.

SUMMARY OF ACCOMPLISHMENTS

- Expertise in clinical care with acknowledgement through various clinical excellence awards and continued care provided to patients in our region in a variety of settings including tertiary and community emergency departments, as well as the medical intensive care unit, cardiovascular intensive care unit, and surgical intensive care unit at UVMMC.
- Dedication to and excellence in teaching and mentoring as evidenced by numerous accolades and local teaching awards at the various institutions I have worked and from several departments, including international recognition for educational efforts and effectiveness.
- Continued participation in clinical outcomes research, progressing to self-initiated and completed research questions and study designs with analyses, with receipt of multiple awards for research projects completed during active clinical time, and now acting as mentor and supervisor for others' research projects.

PROFESSIONAL SERVICEDEPARTMENTAL SERVICE

Years	Department	Committee	Role
2020-2022	Emergency Medicine, OHSU	Continuous Quality Improvement	Member and Reviewer
2020-2022	Emergency Medicine, OHSU	Resuscitation Equipment Committee	Member
2021-2022	Emergency Medicine, OHSU	Residency Executive Committee	Member
2021-2022	Emergency Medicine, OHSU	Journal Club and Phi Trauma Rama Conference Series	Co-Leader
2021-2022	Emergency Medicine, OHSU	“Saves and Successes” Series	Creator and Director
2023-2024	Pulmonary and Critical Care, WashU in St. Louis	Program Evaluation Committee	Member
2024-present	Emergency Medicine, UVM	ED Airway Working Group (EDAWG)	Member
2024-present	Emergency Medicine, UVM	Critical Care Education	Director
2024-present	Emergency Medicine, UVM	Division of Resuscitation Science	Member
2025-present	Emergency Medicine, UVM	Residency Program Evaluation Committee	Member
2025-present	Emergency Medicine, UVM	Intern Orientation Planning Committee	Member
2025-present	Emergency Medicine, UVM	Mission Values Task Force	Member
2025-present	Emergency Medicine, UVM	Residency Selection and Recruitment Team	Member

COLLEGE SERVICES

Years	Service Committee	Role
2009	Department of Student Affairs, University of Arizona, Tucson, AZ	Cohort Leader

MEDICAL CENTER SERVICE

Years	Service Committee	Role
2024-present	Shock Team, UVMMC	Member
2024-present	Extracorporeal Membrane Oxygenation Steering Committee, UVMMC	Member
2024-present	ICU Quality Committee, UVMMC	Member
2024-present	Pulmonary Embolism Response Team (PERT), UVMMC	Member
2024-present	Critical Care Transitions Team, UVMMC	Member
2025-present	ECMO Clinical Practice Guideline Working Group, UVMMC	Founder and Lead
2025-present	Cardiogenic Shock Working Group, UVMMC	Member

2025-present	Extracorporeal Membrane Oxygenation (ECMO) Program, UVMCC	Co-Medical Director
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UNIVERSITY SERVICE

Years	Service Committee	Role
2015-2016	Medical School Admissions, Vanderbilt University School of Medicine	Student Ambassador
2015-2016	Student Affiliate Advisors, Vanderbilt University School of Medicine	Head Student Affiliate Advisor
2016	Match Day Committee, Vanderbilt University School of Medicine	Leader

GOVERNMENT

Years	Service Committee	Role
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SOCIETY MEMBERSHIPS

2015-present	Gold Humanism Honor Society
2016-present	<i>Alpha Omega Alpha</i> Honor Medical Society
2017-present	Society of Academic Emergency Medicine
2019-2022	American College of Emergency Physicians
2019-2022	Emergency Medicine Residents' Association: Critical Care Division
2022-present	Extracorporeal Life Support Organization (ELSO)
2024-present	CHEST
2024-present	American Academy of Emergency Medicine

SERVICE TO PROFESSIONAL ORGANIZATIONS

Years	Service Committee	Role
2016-2017	Gold Humanism Honor Society Chapter	Co-Leader

SERVICE TO PROFESSIONAL PUBLICATIONS

Years	Journal	Role
2020-present	Annals of Emergency Medicine "Top 50 Reviewer of 2024"	Reviewer
2024-present	Journal of Thoracic Disease	Reviewer
2025-present	International Journal of Critical Illness and Injury Science	Reviewer

PUBLIC SERVICE

Years	Service	Location
2011	Youth Basketball Coach	Tucson, AZ
2012-2016	Shade Tree Trot Fundraiser for "Shade Tree Free Clinic"	Nashville, TN
	- Race Coordinator: 2012-2016 - Co-Director: 2015	
2012-2016	Shade Tree Free Clinic	Nashville, TN

- Volunteered to see patients in free primary care clinic
- 2013 After School Diabetes Education Program Nashville, TN
- Educated and mentored 5th-8th graders at Wright Middle School on diabetes prevention and management of healthy eating.
- 2017 University of Michigan Football Medical Relief Ann Arbor, MI
- Volunteered at in-stadium medical clinic providing care and relief support for regularly >100,000 fans in attendance during game days.

SUMMARY OF SERVICE ACTIVITIES

Due to my background and specialty training and expertise in both emergency medicine and critical care, I am very active clinically splitting my clinical work between emergency medicine and critical care medicine. I care for patients in the emergency departments at University of Vermont Medical Center and Champlain Valley Physicians Hospital. Additionally, I care for patients that are critically ill in our state working in the medical intensive care unit, cardiovascular intensive care unit, and surgical intensive care unit. I also work daily with learners from medical students to fellows with bedside clinical teaching while working in the emergency departments or intensive care units. From an educational standpoint I have also been elected to the role of Director of Critical Care Education for the Department of Emergency Medicine where I provide formal education in the form of lectures, simulation sessions, curriculum development, and mentoring for residents and faculty. I am part of the Emergency Medicine Residency Review Committee where I review applications and interview potential residents, in addition to being a member of the selection committee. Similarly, I also regularly interview potential fellows for the pulmonary/critical care fellowship. Since starting here, I was named Co-Medical Director of the ECMO program at UVMMC and worked to establish our ECMO program at UVMMC and offer this advanced life support therapy for patients in our region, which is now live and functioning. I am also a member of the Pulmonary Embolism Response Team at UVMMC helping patients and providers in the region navigate how to best treat this potentially life-threatening illness. Furthermore, I am a member of the Shock Team at UVMMC, and provide expedient assessment and management for patients in cardiogenic shock to help determine their need for mechanical circulatory support. Lastly, I serve as a regular reviewer for several peer reviewed medical journals.

FORMAL SCHEDULED COURSES

Year	Course Title	Course R	E	Hours	Number of Learners	Learner Level
2011	Introductory Biology, Preceptor, Univ. of Arizona	x		80	~150	Ug
2011	Supplemental Instruction, Univ. of Arizona		x	30	~10	Ug
2011	Introductory Biology Lab I, TA, Univ. of Arizona	x		80	~15	Ug
2013	Diabetes Education Program, Vanderbilt		x	8	~20	CmuO
2013-2016	Physical Diagnosis Class, Vanderbilt	x		8	~24	MS-1/2
2015	Sterile Technique and Scrub Class, Vanderbilt	x		20	~30	MS-3/4
2017-2018	CPR/ACLS; Airway Management; Trauma: Emergency Medicine Clerkship Lectureship (multiple lectures), Univ. Mich.	x		4	~25	MS-3/4
2018	Blunt Traumatic Aortic Injury: Department of Emergency Medicine Conference Series, University of Michigan	x		0.5	~40	MS, R, F, Faculty
2019	Pediatric Trauma: General Surgery Conference Series, St. Joseph Mercy	x		0.5	~30	MS, R, Faculty
2019	Trauma in Pregnancy: General Surgery Conference Series, St. Joseph Mercy	x		0.5	~30	MS, R, Faculty
2019	Airway and Peri-intubation Management of the Neurocritically Ill and Injured Adult in the ED: Department of Emergency Medicine Conference Series, OHSU	x		1	~35	MS, R, F, Faculty
2019-2021	EM Residency Journal Clubs: Department of Emergency Medicine, OHSU	x		2-3/year	~100	MS, R, F, Faculty
2020	Unstable Bradycardia: Department of Emergency Medicine Conference Series, OHSU	x		1	~40	MS, R, F, Faculty
2020	ACLS "Tachycardia with a Pulse" online during COVID	x		8	~100	C
2020-2022	American Heart Association ACLS and BLS, OHSU	x		12	~100	C
2020	Ultrasound-guided External Aortic Compression for Hemorrhagic Shock: Division of Ultrasound Conference Series, Department of Emergency Medicine, OHSU		x	1	10	MS, R, F, Faculty
2020	Emergency Department HTN: Department of Emergency Medicine Conference Series, OHSU	x		1	~40	MS, R, F, Faculty
2020	Upstairs Interventions that Matter: Department of Emergency Medicine Conference Series, OHSU	x		1	~40	MS, R, F, Faculty
2021	The Simultaneous Physiologically and Anatomically Difficult Airway: Phi Trauma Rama Series, OHSU Department of Emergency Medicine	x		1	~50	MS, R, F, Faculty
2021	Management of Ruptured AAA: Phi Trauma Rama Series, OHSU Department of Emergency Medicine	x		1	~40	MS, R, F, Faculty
2021	Management of Severe Hypothermia: Phi Trauma Rama Series, OHSU Department of Emergency Medicine	x		1	~45	MS, R, F, Faculty
2021	In-flight Emergencies: EM Interest Group Lecture Series, OHSU		x	1	~15	MS
2021	ED Management of Extraglottic Airways, Department of Emergency Medicine Conference Series, OHSU	x		1	~35	MS, R, F, Faculty

2021	<i>EM Orthopedic Fundamentals: EM Intern Orientation Series, OHSU</i>	x		1	11	R
2021	<i>Principles of Diabetes Mellitus: Fundamentals of Medicine Lecture Series, OHSU</i>	x		1	~15	MS2
2021	<i>Emergent Airway Management Simulation Session: Department of Emergency Medicine Simulation Series, OHSU</i>	x		4	~30	MS, R
2021	<i>How to Thrive in EM Residency: EM Intern Orientation Series, OHSU</i>	x		1	11	R
2022	<i>Acute on Chronic Pulmonary Hypertension in Septic Shock: Phi Trauma Rama Series, OHSU Department of Emergency Medicine</i>	x		1	~50	MS, R, F, Faculty
2022	<i>Rapid Infusion Catheter (RIC) Placement Simulation Session: Department of Emergency Medicine Simulation Series, OHSU</i>	x		4	~40	MS, R, F, Faculty
2022	<i>ECG—real world learning with case follow-up: Department of Emergency Medicine Conference Series, OHSU</i>	x		3	~45	MS, R, F, Faculty
2022	<i>Out-of-hospital Cardiac Arrest due to UGIB and Hyperkalemia: Phi Trauma Rama Series, OHSU Department of Emergency Medicine</i>	x		1	~45	MS, R, F, Faculty
2022	<i>Post-arrest and tPA TVP Placement: Multidisciplinary Critical Care Conference Series, WashU</i>	x		1	~35	F, Faculty
2023	<i>ADVOR Trial: MICU Journal Club Series, Pulmonary and Critical Care, WashU</i>		x	1	~15	R, F, Faculty
2023	<i>Acute Hypercapnic Respiratory Failure and NIPPV: MICU Resident Didactics Series, WashU</i>	x		3	~20	MS, R
2023	<i>Hemorrhagic Shock and Gastrointestinal Bleeding: MICU Resident Didactics Series, WashU</i>	x		3	~20	MS, R
2023	<i>Liberation from Invasive Mechanical Ventilation: MICU Resident Didactics Series, WashU</i>	x		4	~30	MS, R
2023	<i>Rapid Infusion Catheter (RIC) Placement: Pulmonary and Critical Care Simulation Series</i>		x	4	~12	F, Faculty
2023	<i>Driving Pressure: MICU Journal Club Series, WashU</i>		x	1	~15	RN, RT, R, F, Faculty
2023	<i>ED Management of Acute PE: Department of Emergency Medicine Conference, WashU</i>	x		1	~30	MS, R, F, Faculty
2023	<i>Identification of Patients with PE at Risk for Deterioration: Pulmonary and Critical Care Medicine Journal Club Series, WashU</i>	x		1	~12	F, Faculty
2023	<i>Point-of-care Ultrasound Sessions: MICU Resident Ultrasound Series, WashU</i>	x		4	~16	MS, R
2024	<i>Acute Hypercapnic Respiratory Failure: MICU Resident Didactics Series, WashU</i>	x		3	~24	MS, R
2024	<i>Acute Respiratory Distress Syndrome: MICU Resident Didactics Series, WashU</i>	x		2	~14	MS, R
2024	<i>Airway Management: MICU Resident Didactics Series, WashU</i>	x		2	~8	MS, R

2024	ED Extraglottic Airway Management: Department of EM Conference, WashU	x		1	~30	MS, R, Faculty
2024	Hypertensive Emergencies: Department of EM Conference, WashU	x		1	~30	MS, R, Faculty
2024	REDECAP Trial: Pulmonary and Critical Care Respiratory Failure Journal Club, WashU	x		1	12	F, Faculty
2024	Septic Shock: MICU Resident Didactics Series, Washington University in St. Louis	x		3	10	R, MS
2024	Sonographic Tamponade: Pulmonary and Critical Care Fellow Ultrasound Didactic Conference, Washington University in St. Louis	x		1	8	F, Faculty
2024	Surgical Airway Simulation Session: Pulmonary and Critical Care Medicine Fellow Didactics, UVM	x		2	5	F
2024-present	Emergency Medicine Advanced Integration Course (EMED 9502)	x		350	80	MS
2024-present	Medical ICU Advanced Integration Course (MED 2157)		x	200	~15	MS
2024-present	Surgical ICU Advanced Integration Course (SURG 9501)		x	208	~8	MS
2024	Emergency Medicine Research I (EMED 3000), UVM		x	1	~10	Pre Med
2024	Fundamentals of Ultrasound, UVM	x		3	16	MS-1
2024	Transvenous Pacer Placement Simulation Session: Pulmonary and Critical Care Medicine Fellow Didactics, UVM	x		2	6	F
2025	Fundamentals of Ultrasound (DVT), UVM	x		3	16	MS-1
2025	Rapid Infusion Catheter and Central Line Simulation Session: UVM EM Residency	x		4	18	R
2025	UVM EM Residency Conference Resuscitation Leadership Conversations and Simulations	x		4	18	R
2025	CVPH APP Transitions of Practice Lecture: septic shock, refractory hypoxemia, status epilepticus, ECMO		x	3	4	APP
2025	5 th Emergency Critical Care Nursing Fellowship: "Basics of Mechanical Ventilation"	x		2	20	RN
2025	UVM Department of Emergency Medicine conference: "Extracorporeal life support for the emergency clinician"	X		1	50	MS, R, F, Faculty
2025	UVM Department of Emergency Medicine simulation session: airway, non-invasive, and invasive ventilation simulation session	x		3	18	R
2025-present	UVM Emergency Medicine Advanced Integration Course (EMED 9502): medical student didactics facilitator	x		6	6	MS
2025	PCCM Fellows Lecture Series: "Refractory hypoxemia and ARDS", UVM	x		1	18	F

2025	Dartmouth EM-CCM Conference Day: "ED management of extraglottic airways"	X		1	30	MS, R, F, Faculty
2025	Dartmouth EM-CCM Conference Day: airway simulation sessions	X		3	18	R
2025	PCCM Fellows Ultrasound Lecture Series: "POCUS in cardiac arrest and devices", UVM	X		1	18	R, F
2025	ECMO Primer for the Transport Specialist	X		12	10	RNs, paramedics, Faculty
2025	EM Intern Critical Care Orientation, UVM	x		3	6	R
2025	ECMO Primer for the Emergency Nurse		X	1	20	RNs, techs, paramedics
2025	CPC Case—Department of Emergency Medicine Conference	X		1	25	MS, R, Faculty
2025	PCCM Fellows Ultrasound Lecture Series: "RV, TV, and PV POCUS", UVM	X		1	9	F
2025	PCCM Fellows Ultrasound Lecture Series: "FAST and Shock POCUS", UVM	X		1	8	F
2025	Fundamentals of Ultrasound Course (Renal), UVM	X		4	16	MS
2025	UVM Emergency Medicine Residency Simulation Session: aneurysmal subarachnoid hemorrhage	X		4	18	R, MS

R-required; E-elective; Hours-approx. per semester; G-graduate studies (instruction as per the LCOM Teaching Academy Portfolio)

CURRICULUM DEVELOPMENT

2020	American Heart Association Advanced Cardiac Life Support, "Tachycardia with a Pulse" online module	Created online module for ACLS training for physicians to certify during COVID pandemic
2020	Extracorporeal Life Support Clinical Elective, Department of Emergency Medicine, Oregon Health and Science University	Created clinical elective with curricula for residents interested in ECLS
2024	Extracorporeal Membrane Oxygenation Primer, University of Vermont	Primer curriculum of curated lectures, videos, primary literature, textbooks, and podcasts for residents in EM, anesthesia, and surgery as

		well as PCCM fellows to use to learn basics of ECMO.
2025	Airway, non-invasive, and invasive ventilation management simulation curriculum, University of Vermont	Created simulation day for emergency medicine residents regarding physiologically difficult airway management, and non-invasive/invasive ventilation learning.
2025	Emergency Medicine Intern Bootcamp: emergency medicine-critical care, University of Vermont	Created, organized, and delivered curriculum for new intern orientation relating to critical care topics
2025	ECMO Primer for the Transport Specialist, University of Vermont Medical Center	Created and deliver ECMO curriculum for transport physicians and nurses involved in transporting patients on ECMO and MCS with UVM Health Critical Care Transport
2025	ECMO Transport Guidelines, HealthNet, University of Vermont Health Network and Dartmouth Medical Center	Helped create guidelines, curriculum, and training for transport of ECMO patients for UVM Health Critical Care Transport and Dartmouth Critical Care Transport
2025	ECMO RN Specialist Didactic and Simulation Training Curriculum, University of Vermont Medical Center	I created and delivered the curriculum for ICU RNs to train to become bedside ECMO RN Specialists that are responsible or ECMO circuit management

POSTGRADUATE AND OTHER COURSES

Year(s)	Preceptorship
2022-2024	8 months/year I precepted, educated, and supervised medical students, and residents in EM, IM, surgery, Ob/gyn, IR, and ENT while on their required ICU rotations in the various ICUs at Washington University in St. Louis
2023-2024	2-8 shifts/month I precepted, educated, and supervised medical students and IM residents on their emergency medicine rotation at SSM Health St. Mary's Hospital in St. Louis, MO.
2024-present	~8 shifts/month (10.5 hrs/shift) I precept, educate, and supervise medical students and residents in EM, IM, and FM on their emergency medicine rotations at UVMMC and CVPH.

2024-present

1-3 weeks/month I precept, educate, and supervise medical students, residents in EM, IM, anesthesia, surgery, Ob/gyn, ENT, IR and fellows in pulmonary and critical care medicine during their medical, cardiovascular, or surgical ICU rotations at UVMMC.

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program School	Role	Current Position
2011-2012	Sebastian Hernandez	Undergraduate student at University of Arizona	Supervised research year.	Asst. Prof. EM, UC Davis
2013-2017	Chris Wallace	Medical student	Medical school mentor	Military Orthopedic Surgeon, Hamburg, Germany
2024	Laura Obrien	Undergraduate student at Univ. of Vermont	Personal advisor, clinical shadowing	Undergrad at UVM
2024	Andrew Meredith	Undergrad at Univ. of Vermont	Personal advisor, clinical shadowing	Undergrad at UVM
2025	Joseph Du	Medical student at Univ. of Vermont	Clinical and career advisor	Medical student at UVM
2025	Isaac Sellinger	Medical student at Univ. of Vermont	Clinical and career advisor	Medical student at UVM
2026	Steven Hepp	Medical student at Univ. of Vermont	ECMO Reading Elective Course mentor	Medical student at UVM

POSTDOCTORAL FELLOWS AND RESIDENTS DIRECTLY SUPERVISED OR MENTORED

Dates	Name	Mentee Role	Faculty Role	Current Position
2024-2025	Kyle McCurry	PGY1 Pharmacy Resident	Research supervisor	Pharm Resident, UC Davis
2024-present	Rebekah Guay	PGY2 Pharmacy Resident	Research supervisor	Pharm Resident, UVM
2024-present	Talat Raja	PCCM Fellow Physician	Clinical mentor	PCCM Fellow, UVM
2024-present	Alex Cavert	EM Resident	Clinical and career/educational mentor	EM resident at UVM, applying for CCM fellowship

GENERAL MENTORING

2011	Women in Science and Engineering (WISE): mentor to high school students interested in STEM fields, Tucson, AZ
2011	Undergraduate Biology Research Program Pen Pal Program: pen pal to middle school students interested in science higher education
2012	Levi Watkins, Jr. Pre-Med Conference: interview workshop leader for pre-medical students applying to medical school, Vanderbilt University
2013-2014	<i>Alpha Epsilon Delta</i> Pre-Med Mentor: mentored two undergraduate students and conducted mock interviews for other pre-med students, Vanderbilt University
2015-2016	Student Affiliate Advisors: wellness college mentor to medical students, and Head Student Affiliate Advisor in 2016, Vanderbilt University School of Medicine

2024-present	Emergency Medicine Residents: act as clinical educator and supervisor with bedside education for 18 residents per year working clinically in the emergency departments at UVMMC and CVPH, as well as in MICU, CVICU, and SICU at UVMMC
2024-present	Anesthesiology Residents: act as clinical educator and supervisor with bedside education for anesthesia residents in the CVICU and SICU at UVMMC
2024-present	Internal Medicine Residents: act as clinical educator and supervisor with bedside education for internal medicine residents in the MICU and ED at UVMMC
2024-present	Surgery Residents: act as clinical educator and supervisor with bedside education for general surgery and surgical subspecialty residents in the CVICU and SICU at UVMMC
2024-present	Pulmonary and Critical Care Fellows: act as clinical educator and supervisor with bedside education for 9 pulmonary and critical care fellows each year in the MICU at UVMMC

INFORMAL TEACHING

2009	Cohort Leader, Department of Student Affairs, Univ. of Arizona: taught small group sessions and tutoring for freshmen undergraduate students.
2020	Pediatric Septic Shock: presentation at Morbidity and Mortality Conference, Department of EM, OHSU
2021	High-risk Pulmonary Embolism: presentation at Morbidity and Mortality Conference, Department of EM, OHSU
2021	RV Failure—a physiologic case-based approach: Grand Rounds presentation at Department of EM, OHSU
2022-2024	Clinical Rounds: led daily clinical rounds for medical students and residents in IM, anesthesia, surgery, EM, OB/Gyn in MICU, SICU, CVICU, BMT-ICU, NNICU for 9 months each year
2023	Intermediate-high Risk Pulmonary Embolism: presentation at Morbidity and Mortality Conference, Washington University in St. Louis Division of Pulmonary and Critical Care
2024-present	Attending Rounds: lead rounds in MICU, CVICU, and SICU at least one week/month with team of medical students and residents in IM, EM, surgery, and anesthesia, University of Vermont
2024-present	Emergency Medicine Clinical Teaching: teach medical students and residents in EM, IM, FM during on-shift patient-care approximately 8 shifts/month, University of Vermont

FACULTY MENTORED

Dates	Name	Position while mentored	Faculty Role	Current Position

OTHER VISITING FACULTY SUPERVISED

Years	Names	University/College
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TEACHING AIDS

1. Emergency Department Resuscitation Inventory: created online repository of all resuscitation supplies stocked in the emergency department, what they are for, and where to locate them for aid in times of acute need caring for patients; OHSU (2019).
2. Tachycardia with a Pulse: American Heart Association Advanced Cardiac Life Support Online Learning Module for certification during COVID pandemic (2020).
3. Extracorporeal Life Support Clinical Elective: developed clinical elective and accompanying curriculum with syllabus for residents interested in learning more about ECMO. Several residents have subsequently used their elective time to take this clinical elective at OHSU (2020).
4. Intern Survival Guide: co-wrote intern survival guide/handbook for EM residency, OHSU (2021).
5. Alternative Hemodynamic Monitoring: wrote textbook chapter for Washington Manual of Critical Care, 4th edition, for bedside referencing caring for patients in the ICU (2024).
6. Rapid Infusion Catheter Implementation and Education for the Department of Emergency Medicine, University of Vermont (2024).
7. Extracorporeal Membrane Oxygenation Clinical Primer: developed primer for education on the topic of ECMO for residents in EM, surgery, anesthesia, and medicine, as well as fellows in pulmonary and critical care medicine, University of Vermont (2024).

TEACHING AWARDS AND NOMINATIONS

2022	Resident Educator of the Year Award, Department of Emergency Medicine, OHSU
2023	Extracorporeal Life Support Organization (ELSO) Froehlich Education International Award
2024	Teaching Fellow of the Year Award, Department of Internal Medicine, Washington University in St. Louis School of Medicine
2024	Graduate Medical Education (GME) Educator of the Year Award Nominee, University of Vermont Health Network Medical Group

SUMMARY OF TEACHING ACTIVITIES

My current teaching efforts at University of Vermont are several-fold. I teach regularly at the bedside for medical students and residents in EM, IM, surgery, OB, and anesthesia during rounds and clinical work in the medical intensive care unit (~33 hours/month), cardiovascular intensive care unit and surgical intensive care unit (~45-85 hours/month). Furthermore, I also perform bedside clinical teaching on shift with medical students and residents in EM, IM, FM, OB in the emergency department at University of Vermont Medical Center (40-60 hours/month) and CVPH (20-30 hours/month). More formally, I contribute to medical student education through ultrasound course teaching, formal medical student didactic sessions, and undergraduate EMRAP teaching and mentoring. I am a frequent contributor to weekly Department of Emergency Medicine Residency Educational Conferences as well as journal clubs, and Division of Pulmonary and Critical Care weekly educational conferences, simulation sessions, lecture series, and journal clubs as well. Furthermore, I am the Director of Critical Care Education for the Department of Emergency Medicine, where I support EM residents' education both at the bedside in the ED and ICU, but also more formally through structured critical care simulation sessions, conference lectures, and journal clubs, in addition

to acting as liaison for their critical care rotations as residents in the medical, cardiovascular, and surgical ICUs. I have received numerous teaching awards at each institution I have worked, in addition to international recognition for education as it relates to extracorporeal life support from the Extracorporeal Life Support Organization.

RESEARCH AND SCHOLARLY ACTIVITIES

RESEARCH AWARDS AND GRANTS

Ongoing Research Support – None to date

Completed Research Support

2016-2017 Medical Scholars Program, Vanderbilt University School of Medicine

Pending – None to date

Selected Unfunded Grant Submissions (include scoring if available) – None to date

SCHOLARSHIP

Peer Reviewed Publications

Original Research

1. Spooner E, McLaughlin BM, Lepow T, Durns TA, Randall J, **Upchurch C**, Miller K, Campbell EM, Fares H. Systematic screens for proteins that interact with the mucopolipidosis type IV protein TRPML1. PLoS One. 2013;8(2):e56780. doi: 10.1371/journal.pone.0056780. Epub 2013 Feb 13. PMID: 23418601; PMCID: PMC3572064.
2. **Upchurch C**, Morgan CD, Umfress A, Yang G, Riederer MF. Discharge instructions for youth sports-related concussions in the emergency department, 2004 to 2012. Clin J Sport Med. 2015 May;25(3):297-9. doi: 10.1097/JSM.0000000000000123. PMID: 24977953.
3. Miller A, Schafer J, **Upchurch C**, Spooner E, Huynh J, Hernandez S, McLaughlin B, Oden L, Fares H. Mucopolipidosis type IV protein TRPML1-dependent lysosome formation. Traffic. 2015 Mar;16(3):284-97. doi: 10.1111/tra.12249. Epub 2015 Jan 25. PMID: 25491304.
4. Shaver CM, **Upchurch CP**, Janz DR, Grove BS, Putz ND, Wickersham NE, Dikalov SI, Ware LB, Bastarache JA. Cell-free hemoglobin: a novel mediator of acute lung injury. Am J Physiol Lung Cell Mol Physiol. 2016 Mar 15;310(6):L532-41. doi: 10.1152/ajplung.00155.2015. Epub 2016 Jan 15. PMID: 26773065; PMCID: PMC4796260.
5. Gee K, Zamora D, Horm T, George L, **Upchurch C**, Randall J, Weaver C, Sanford C, Miller A, Hernandez S, Dang H, Fares H. Regulators of Lysosome Function and Dynamics in *Caenorhabditis elegans*. G3 (Bethesda). 2017 Mar 10;7(3):991-1000. doi: 10.1534/g3.116.037515. PMID: 28122949; PMCID: PMC5345728.
6. **Upchurch CP**, Grijalva CG, Russ S, Collins SP, Semler MW, Rice TW, Liu D,

- Ehrenfeld JM, High K, Barrett TW, McNaughton CD, Self WH. Comparison of Etomidate and Ketamine for Induction During Rapid Sequence Intubation of Adult Trauma Patients. *Ann Emerg Med*. 2017 Jan;69(1):24-33.e2. doi: 10.1016/j.annemergmed.2016.08.009. PMID: 27993308; PMCID: PMC5180365.
7. **Upchurch CP**, Grijalva CG, Wunderink RG, Williams DJ, Waterer GW, Anderson EJ, Zhu Y, Hart EM, Carroll F, Bramley AM, Jain S, Edwards KM, Self WH. Community-Acquired Pneumonia Visualized on CT Scans but Not Chest Radiographs: Pathogens, Severity, and Clinical Outcomes. *Chest*. 2018 Mar;153(3):601-610. doi: 10.1016/j.chest.2017.07.035. Epub 2017 Aug 9. PMID: 28802696; PMCID: PMC5989638.
 8. Self WH, **Upchurch CP**, Wunderink RG, Waterer GW, Grijalva CG, Edwards KM. Response. *Chest*. 2018 Mar;153(3):763-764. doi: 10.1016/j.chest.2017.09.020. PMID: 29519302.
 9. **Upchurch CP**, Haas NL, Magnone G, Compton J. Symptomatic Cholelithiasis of a Remnant Gallbladder after Open Cholecystectomy. *J Emerg Med*. 2018 Sep;55(3):e71-e73. doi: 10.1016/j.jemermed.2018.05.028. Epub 2018 Jun 23. PMID: 29941371.
 10. **Upchurch C**, Blumenberg A, Brodie D, MacLaren G, Zakhary B, Hendrickson RG. Extracorporeal membrane oxygenation use in poisoning: a narrative review with clinical recommendations. *Clin Toxicol (Phila)*. 2021 Oct;59(10):877-887. doi: 10.1080/15563650.2021.1945082. Epub 2021 Aug 16. PMID: 34396873.
 11. Kimball E, Buchwalder K, **Upchurch C**, Kea B. Intermittent complete heart block with ventricular standstill after Pfizer COVID-19 booster vaccination: A case report. *J Am Coll Emerg Physicians Open*. 2022 Apr 20;3(2):e12723. doi: 10.1002/emp2.12723. PMID: 35475120; PMCID: PMC9020811.
 12. **Upchurch CP**, Wessman BT, Roberts BW, Fuller BM. Arterial to end-tidal carbon dioxide gap and its characterization in mechanically ventilated adults in the emergency department. *Am J Emerg Med*. 2023 Nov;73:154-159. doi: 10.1016/j.ajem.2023.08.042. Epub 2023 Sep 1. PMID: 37683313.
 13. Condella A, Lentz S, **Upchurch C**, Badulak J, Long B, Gottlieb M. Extracorporeal membrane oxygenation (ECMO): A narrative review for the emergency clinician. *Am J Emerg Med*. 2025 Jun 4;96:6-14. doi: 10.1016/j.ajem.2025.06.007. Epub. PMID: 40505195.
 14. **Upchurch CP**, Ran R. Peripheral Venoarterial Extracorporeal Membrane Oxygenation: A Better Pressor due to Impedance Effects. *J Cardiothorac Vasc Anesth*. 2025;39(12):3648-3649. doi:10.1053/j.jvca.2025.09.018
 15. **Upchurch, CP.**, et al. "Association of Shock Index and Variants with Mortality in Acute Pulmonary Embolism." *Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health* (2025).
 16. McCurry K, DeWitt K, **Upchurch CP**, Wren RN. Peripherally administered vasopressin initiated in the emergency department. *J Crit Care*. 2025 Nov 26;92:155363. doi: 10.1016/j.jcrc.2025.155363. Epub ahead of print. PMID: 41308502.

In Review

1. Weisman A and **Upchurch CP**. Preoxygenation for emergent intubation in a rural setting: In Rural Life (IRrL) series. *EB Medicine*. 2025.

In Preparation

1. Guay RE, Porter BA, DeWitt KM, Lamberson MG, **Upchurch CP**, Lentz SA. Evaluation of antibiotic-associated hypotension in emergency department patients with bacteremia.

2. Bria, K, Gage B, **Upchurch CP**, Sanfillippo K. Survival outcomes in patients with intermediate and high-risk pulmonary embolism treated with low molecular weight or unfractionated heparin: time-to-start of anticoagulant therapy.

Non-Peer Reviewed Publications

Review Articles:

1. **Upchurch CP**, Kornegay JG. Updates in the Airway. EM Resident, Official Publication of EMRA. December 2020/January 2021;47.6.

Books and Chapters

1. **Upchurch CP**. Alternative Hemodynamic Monitoring. In: Kollef MH, Despotovic V, Kraft BD, McDonald RK, and Nguyen N, eds. *Washington Manual of Critical Care*. 4th ed. Wolters Kluwer; 2024.
2. **Upchurch CP** and Wessman BT. Basics of Invasive Mechanical Ventilation. In: Shiber JR, ed. *Fundamentals of Surgical Critical Care Outside of the SICU*. Oxford University Press; 2024. *In press*.
3. **Upchurch CP** and Wessman BT. Acute Respiratory Failure. In: Shiber JR, ed. *Fundamentals of Surgical Critical Care Outside of the SICU*. Oxford University Press; 2024. *In press*.
4. **Upchurch CP** and Roginski MA. Upper Respiratory Tract Infections. In: Rosen's Emergency Medicine: Concepts and Clinical Practice. 11th ed. Elsevier. 2025. *In press*.

Blog Publications

1. **Upchurch C**, Beyer A, Munzer B. Journal Club: Intracerebral hemorrhage. *WolverEM*. University of Michigan/St. Joseph Mercy Emergency Medicine. Web. <<https://www.wolverem.com/journal-club-intracerebral-hemorrhage/>>. 2018.
2. **Upchurch C** and Chess L. "FLORALI - Hypoxemic Respiratory Failure." *PDX EM*, OHSU Emergency Medicine Blog. Web. <<https://pdxem.com/blog-1/florali>>. 2019.
3. **Upchurch C** and Hicks B. "Ultrasound-guided external aortic compression." *PDX EM*, OHSU Emergency Medicine Blog. Web. < <https://pdxem.com/blog/eac>>. 2020.
4. **Upchurch C**, Kornegay JG, and Ran R. "Peri-intubation management of the neurocritically ill and injured adult in the ED, Part 1: pre-intubation." *PDX EM*, OHSU Emergency Medicine Blog. Web. < <https://pdxem.com/blog/peri-intubation-neurocritical-part-1>>. 2020.
5. **Upchurch C**, Kornegay JG, and Ran R. "Peri-intubation management of the neurocritically ill and injured adult in the ED, Part 2: intubation considerations." *PDX EM*, OHSU Emergency Medicine Blog. Web. < <https://pdxem.com/blog/peri-intubation-neurocritical-part-2>>. 2020.
6. **Upchurch C**, Kornegay JG, and Ran R. "Peri-intubation management of the neurocritically ill and injured adult in the ED, Part 3: post-intubation management and special considerations." *PDX EM*, OHSU Emergency Medicine Blog. Web. < <https://pdxem.com/blog/peri-intubation-neurocritical-part-3>>. 2020.
7. **Upchurch C**, Hambelton C, and Kornegay JG. "PrePARE and PreVent Trials: Journal Club Review." *PDX EM*, OHSU Emergency Medicine Blog. Web. < <https://pdxem.com/blog/ptr-6/2020>>. 2020.
8. **Upchurch C**, Wackett J, and Burns B. "Steroids for pediatric meningitis: a review of current guidelines." *PDX EM*, OHSU Emergency Medicine Blog. Web. <<https://pdxem.com/blog/pedsteroids>>. 2020.
9. Buerk K, **Upchurch C**, and Kusin S. "Pediatric nicotine toxicity." *PDX EM*, OHSU

- Emergency Medicine Blog. Web. <<https://pdxem.com/blog/nicotine>>. 2021.
10. Buerk K and **Upchurch C**. “Post-abortion care in the ED.” *PDX EM*, OHSU Emergency Medicine Blog. Web. <<https://pdxem.com/blog/edabortioncare>>. 2022.
 11. **Upchurch C**, Raja, T, Sellinger I, and Lentz S. “Snuff said: anatomical snuffbox distal radial arterial lines for the win.” *emDOCs* blog. Web. <<https://www.emdocs.net/snuff-said-anatomical-snuffbox-distal-radial-arterial-lines-for-the-win/>>. 2026.

Film and Video

1. **Upchurch C** and Ran R: “Peri-intubation care of the neurocritically ill patient.” Video blog reviewing practice and rational around management of patients requiring intubation for neurocritical illness. < <https://www.youtube.com/watch?v=htgBSxN3ocA>>. (2020).

Clinical Practice Guidelines

1. **Upchurch CP**, Wollenberg M, and Zakhary B. “Venoarterial extracorporeal membrane oxygenation in toxic exposures: a clinical practice guideline.” OHSU Extracorporeal Life Support Program. 2020.
2. **Upchurch CP**, Setien T, Pocock E. “Extracorporeal membrane oxygenation in toxic exposures: clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2024.
3. **Upchurch CP**, Kirk L, and Pocock E. “Venovenous ECMO clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2024.
4. **Upchurch CP**, Hunter P, Kessler R, Parent E, Chambers C, Grogan C. “Mechanical ventilation in venovenous ECMO: clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2024.
5. **Upchurch CP**. “Weaning venovenous ECMO: clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2025.
6. **Upchurch CP**, Kessler R, Lentz S, Kirk L, and Hunter P. “Mechanical ventilation in venoarterial ECMO: clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2025.
7. **Upchurch CP**, Pocock E, and Kirk L. “Anticoagulation in ECMO: clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2025.
8. **Upchurch CP**, Klick JC, Erb L, Wren R, and Zadikian N. “Guideline for sedation-dose continuous ketamine infusion for analgo-sedation of intubated adults in the intensive care units.” University of Vermont Health Network.
9. **Upchurch CP**, Kirk FL, Pocock E, Gogo P, and Hunter P. “Anticoagulation in extracorporeal membrane oxygenation: clinical practice guideline.” UVMHC Extracorporeal Life Support Program. 2025.

Abstracts (*denotes physical presenter)

1. **Upchurch C***, Randall J, and Fares H: Lysosome biogenesis. Molecular and Cellular Biology Undergraduate Annual Poster Session. Tucson, AZ. Poster presentation, November 2011.
2. **Upchurch C***, Randall J, and Fares H: Role of CUP-8, CUP-9, and other novel proteins in the formation of lysosomes. 23rd Annual Undergraduate Biology Research Program Annual Conference. Tucson, AZ. Poster presentation, January 2012.
3. **Upchurch C***, Randall J, and Fares H: Lysosome biogenesis. ABBS Recruitment Session. Tucson, AZ. Poster presentation, March 2012.
4. Riederer M, Boyle J, Morgan C, Martin E, Umfress A, **Upchurch C***, Yang G, Zengqui L, and Saville B: Discharge instructions for youth sports-related concussions in the

- pediatric emergency department 2004-2012. 31st Annual Vanderbilt Research Forum. Nashville, TN. Poster presentation, April 2013.
5. Riederer M*, Boyle J, Morgan C, Martin E, Umfress A, **Upchurch C**, Yang G, Zengqui L, and Saville B: Discharge instructions for youth sports-related concussions in the pediatric emergency department 2004-2012. American Medical Society for Sports Medicine Research 22nd Annual Conference. San Diego, CA, April 2013.
 6. Morgan K, **Upchurch C***, Narveson T, Seiberling R, Williams D, Hespos K, and Hathaway J: Intervening on interventions: an analysis of an intervention reporting system in an inpatient pharmacy. Fundamentals of Quality Improvement in Healthcare Poster Session. Nashville, TN. Poster presentation, May 2013.
 7. **Upchurch C*** and Davidson M: One ICU bed left, who gets it? Working towards the appropriate allocation of the scarce resource that is critical care medicine. Vanderbilt Biostatistics Class. Nashville, TN. Poster presentation, May 2013.
 8. Ware L*, Shaver C, **Upchurch C**, Hiromasa N, Janz D, May J, Dikalov S, Roberts II LJ, and Bastarache J.: The Thomas L. Petty Aspen Lung Conference. Aspen, CO, June 2014.
 9. **Upchurch C***, Liu D, and Self WH: Comparative effectiveness of etomidate versus ketamine for rapid sequence intubation induction of adult traumatic brain injured patients. Association for Clinical and Translational Science Conference. Washington, DC. Poster presentation, April 2016.
 10. Asokan I*, Bhutiani M, Wolenberg K, **Upchurch C**, Meador K, Miller B, Cutrer W, Fleming A: Use of learning community recommendations in selecting Gold Humanism Honor Society (GHHS) candidates: a novel approach to selection. Learning Communities Institute Annual Meeting. Seattle, WA. Poster presentation, November 2016.
 11. **Upchurch C***, Blumenberg A, Brodie D, MacLaren G, Zakhary B, and Hendrickson R. Extracorporeal membrane oxygenation use in poisoning: a narrative review with clinical recommendations. OHSU Department of Emergency Medicine Annual Research Conference. Portland, OR. Poster Presentation, April 2022.
 12. **Upchurch C***, Wessman B, Roberts B, and Fuller B. Arterial to end-tidal carbon dioxide gap and its characterization in mechanically ventilated adults in the emergency department. Washington University in St. Louis Division of Pulmonary and Critical Care Research Day. Poster presentation. April 2024.
 13. **Upchurch C***, Samant M, Sanfillipo K, Yusen R, and McDonald R. Shock index and several novel variants in predicting mortality among patients with acute pulmonary embolism. Washington University in St. Louis Division of Pulmonary and Critical Care Research Day. St. Louis, MO. Poster presentation, won "Best Clinical Research Abstract Award." April 2024.
 14. McCurry KA*, DeWitt K, **Upchurch CP**, and Nashett R. Safety of peripherally administered vasopressin in the emergency department. American Society of Health-System Pharmacists Midyear Clinical Meeting and Exhibition Conference. New Orleans, LA. Poster presentation, December 2024.
 15. McCurry KA*, DeWitt K, **Upchurch CP**, and Nashett R. Peripherally administered vasopressin initiated in the emergency department. Eastern States Conference. Hershey, PA. Podium presentation, May 2025.

Patents Issued or Pending: none to date

Other Creative Activities

1. **Upchurch C** and Batson Advisory College at Vanderbilt Medical School. Research I Course. Stories in Science: "Finding Your Niche: A Focus on the Physician Researcher." (2013). Film documentary. Awarded "Most Inspiring Film."

<<https://medschool.vanderbilt.edu/student-research/stories-science> >.

2. **Upchurch C** and Wackett J: “Discover PDXEM.” (2021). Recruitment video of bike commuting to work and day-in-the-life of an OHSU EM resident, for prospective residency applicants

Quality Improvement and Patient Safety Activities

2020-2022 Continuous Quality Improvement Group

- Department of Emergency Medicine at OHSU group with monthly meetings reviewing all cases of return visits and/or death within 48 hours of emergency department presentation to identify gaps in care or safety.

2024-present ICU Quality Committee

- MICU Quality Committee at UVMC, contributing to identification of areas of improvement related to care for patients in the MICU and development of projects to address quality issues.

SUMMARY OF SCHOLARLY ACTIVITIES

My scholarly activity is focused on the early identification of critically ill patients and improving and providing advanced critical care to these patients early in their course, such as in the emergency department, in attempt to change their care trajectory course positively. I have been involved in clinical outcomes research pertaining to these goals. I have progressed to primary developer of clinical questions and study designs to analyze outcomes, to now acting as research mentor for others to help develop their own research questions and designs, and guiding them through the publishing process. In my short time at UVM, I have become intimately involved with the extracorporeal membrane oxygenation (ECMO) group, creating protocols, credentialing, education, and systems to bring this advanced life support to the patients in need in our region. I continue to lecture regularly and contribute to medical textbook chapters and peer-reviewed educational articles. I have also written multiple textbook chapters as content expert on critical care-related emergency medicine topics. I am an invited lecturer for both regional, national, and international conferences relating to emergency medicine-critical care topics.

INVITED PRESENTATIONS

Regional

2012	Women in Science and Engineering Expanding Your Horizons Conference	Tucson, AZ
	“Interested in STEMI fields?”	
2012	American Medical Student Association Pre-Med Conference	Nashville, TN
	“Panel Presentation”	
2013	Vanderbilt Case-based Learning Development	Nashville, TN
	“Panel Presentation”	

2013	Vanderbilt Continuity Clinic Faculty Development “Panel Presentation”	Nashville, TN
2014	32 nd Annual Vanderbilt Research Forum: selected oral presentation “Cell-free hemoglobin elicits a pro-inflammatory response in lung epithelial cells”	Nashville, TN
2016	Society for Academic Emergency Medicine Midwest Regional Conference: selected oral presentation “Etomidate vs ketamine for rapid sequence intubation of adult trauma patients: a comparative effectiveness study”	Indianapolis, IN
2017	Vanderbilt Medical Scholars Annual Research Symposium: selected oral presentation “Comparison of etomidate and ketamine for induction during rapid sequence intubation of adult trauma patients”	Nashville, TN
2022	Oregon College of Emergency Physicians (OCEP) Conference: “Peri-intubation management of neurocritically ill and injured adults”	Sunriver, OR
2024	WashU in St. Louis Department of Emergency Medicine Conference: “Hypertensive Emergencies”	St. Louis, MO
2024	WashU in St. Louis Department of Emergency Medicine Conference: “ED Extraglottic Airway Management”	St. Louis, MO
2024	UVM MiniMed School: “EM-CCM: providing and advancing the crucial and critical care for Vermont and the North Country”	Burlington, VT
2025	Stowe EM 2025 Conference: “Integrated Curriculum Workshop: Ventilator Management in the Emergency Department”	Stowe, VT
2025	University of Vermont Department of Emergency Medicine Grand Rounds: “Extracorporeal life support for the emergency clinician”	Burlington, VT
2025	Dartmouth Hitchcock Department of Emergency Medicine Conference: “ED management of extraglottic airways”	Hanover, NH
2025	Vermont/New Hampshire Society for Respiratory Care 2025 Educational Conference: “Invasive mechanical ventilation in ECMO”	Waterville Valley, NH
2025	University of Vermont Department of Medicine Morbidity and Mortality Conference, expert discussant, pulmonary embolism	Burlington, VT
2026	Northwestern Medical Center Grand Rounds: “UVM ECMO”	St. Albans, VT
2026	Stowe EM 2026 Conference: “When norepinephrine is no longer working: advanced shock management”	Stowe, VT
2026	Stowe EM 2026 Conference: “Critical cases to remember: from the critical access ED to the ICU”	Stowe, VT
National		
2012	Astronaut Scholar Technical Conference “Lysosomes: what are they, how are they formed, and why do we care?”	Cocoa Beach, FL
2016	Society for Academic Emergency Medicine Conference: selected oral presentation “Comparative effectiveness of	New Orleans, LA

	etomidate vs ketamine for rapid sequence intubation of adult trauma patients”	
2023	Society for Academic Emergency Medicine Conference: selected oral presentation Top 10% “Arterial to end-tidal carbon dioxide gap in intubated adults in the emergency department”	Austin, TX
2024	Society for Academic Emergency Medicine Conference: selected oral presentation “Shock index and several novel variants in predicting mortality among patients with acute pulmonary embolism”	Phoenix, AZ
International		
2014	American Thoracic Society International Conference: selected discussion session and presentation “Cell-free hemoglobin elicits a pro-inflammatory response in lung epithelial cells”	San Diego, CA
2025	Mediterranean Emergency Medicine Conference, hosted by American Academy of Emergency Medicine: invited lecturer “A plastic endotracheal tube is oft not the cure: an evidence-based approach for optimal peri-intubation management”	Budapest, Hungary